



An Oshkosh Corporation Company

Electrical Schematic Manual

Models
X17JP - X500AJ
X20JP - X600AJ

P/N - 3121762

November 1, 2016

**For Machines Prior To
S/N-C170000893**

ANSI

CE



An Oshkosh Corporation Company

ELECTRIC DIAGRAM HINOWA LIGHTLIFT PERFORMANCE

DESCRIPTION	REFERENCE
• How to read the electric wiring diagrams	
• Photocells – Safety Exclusion	A
• Slew proximity – 1° arm switch – Stabilizers pressure sensors	B
• Outriggers switches	C
• Can Network - Cylinder position sensor – Modem	D
• Ropes switch - Jib position switch – Pedal – Load cell	E
• Ground position control box	F
• Aerial safety line	G
• Emergency descend electro valves – Widening cylinder sensors - Optionals	H
• Ground part: Tracks – Undercarriage widening – 2° speed – Proportional electro valves	I
• Ground part: Outriggers – Electric diverter	J
• Aerial part: Basket levelling – Basket rotation – Jib – Proportional electro valve	K
• Aerial part: 1° Cylinder - 2° cylinder – Extension - Rotation	L
• Engine diesel versions: RPM regulation system	M
• Engine diesel Perkins 2 cylinders: Sensors and electro stop	N
• Engine diesel Perkins 2 cylinders: Start and sparks	O
• Engine Diesel Hatz 1 cylinder	P
• Engine Gasoline Honda 1 cylinder	Q
• 12 Volt power supply	R
• 120/230 Volt Line	S
• Components location	T
• Components abbreviation meaning	U
• Connectors layout	V
• Lithium version LL17.75	Y1, Y2...
• Lithium version LL20.10	Z1, Z2...

SCHEMA ELETTRICO HINOWA LIGHTLIFT 3S PERFORMANCE

DESCRIZIONE	RIFERIMENTO
• Come leggere gli schemi elettrici	
• Fotocellule – Esclusione sicurezze	A
• Proximity ralla – Interruttore posizione primo braccio - Pressostati stabilizzatori	B
• Interruttori stabilizzatori	C
• Linea CAN – Sensore posizione cilindro – Modem	D
• Interruttore funi – Interruttore posizione Jib – Pedale – Cella di carico	E
• Scatola di comando a terra	F
• Linea aerea sicurezza	G
• Elettrovalvole discesa di emergenza – Sensori posizione carro – Optionals	H
• Parte a terra: Traini – Allargamento carro – 2° velocità – Elettrovalvole proporzionali	I
• Parte a terra: Stabilizzatori – Elettrovalvola deviatrice	J
• Parte aerea: Livellamento cesto – Rotazione cesto - Jib - Elettrovalvola proporzionale	K
• Parte aerea: 1° cilindro – 2° cilindro – Sfilo - Rotazione	L
• Motori Diesel: Sistema regolazione giri motore	M
• Motore Diesel Perkins 2 cilindri: Sensori e eletro stop	N
• Motore Diesel Perkins 2 cilindri: Avviamento e candelette	O
• Motore Diesel Hatz 1 cilindro	P
• Motore benzina Honda 1 cilindro	Q
• Alimentazione 12 Volt	R
• Linea 120/230 Volt	S
• Locazione componenti	T
• Significato abbreviazione componenti	U
• Layout connettori	V
• Versione litio LL17.75	Y1, Y2...
• Versione litio LL20.10	Z1, Z2...

INSTALACIÓN ELÉCTRICA HINOWA LIGHTLIFT 3S PERFORMANCE

DESCRIPCIÓN	RIFERENCIA
• Como leer la instalación eléctrica	
• Fotocélulas – Exclusión seguridades	A
• Proximity rotación – Interruptor 1º brazo - Sensores de presión estabilizadores	B
• Interruptores estabilizadores	C
• Línea CAN – Sensor posición cilindro - Modem	D
• Interruptor cuerdas – Interruptor posición jib - Pedal – Célula de carga	E
• Caja de comando en tierra	F
• Línea aérea seguridades	G
• Electroválvulas bajada de emergencia – Sensores posición orugas - Opcionales	H
• Parte de tierra: Orugas – Extensión del carro – 2º velocidad Electroválvulas proporcionales	I
• Parte de tierra: Estabilizadores – Comutador eléctrico	J
• Parte aérea: Nivelación de la cesta – Rotación de la cesta – Jib – Electrovalvula proporcional	K
• Parte aérea: 1º cilindro – 2º cilindro – Telescópico – Rotación	L
• Motores Diesel: sistema regulación RPM	M
• Motor Diesel Perkins 2 cilindros: Sensores y electro stop	N
• Motor Diesel Perkins 2 cilindros: Arranque y bujías	O
• Motor Diesel Hatz 1 cilindro	P
• Motor Gasolina Honda 1 cilindro	Q
• Alimentación 12 Volt	R
• Línea 110/230 Volt	S
• Colocación componentes	T
• Significado abreviatura componentes	U
• Layout conectores	V
• Version litio LL17.75	Y1, Y2...
• Version litio LL20.10	Z1, Z2...

PLAN ÉLECTRIQUE HINOWA LIGHTLIFT 3S PERFORMANCE

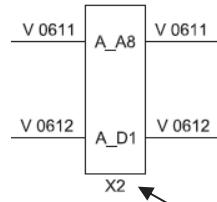
DESCRIPTION	RÉFÉRENCE
• Comment lire les plans électriques	
• Cellules photoélectriques - Exclusion sécurités	A
• Proximity crapaudine – Interrupteur 1° bras - Capteurs de pression stabilisateurs	B
• Interrupteurs stabilisateurs	C
• Ligne Can - Capteurs de position cylindre – Modem	D
• Interrupteur câbles - Interrupteur position jib - Pédale –Cellule de charge	E
• Boîte de commande a la terre	F
• Ligne de sécurité arienne	G
• Electrovannes descente d'urgence – Capteurs position chenille - Option	H
• Partie au sol: Chenilles - Elargissement chenilles – Deuxième vitesse – Electrovannes proportionnelle	I
• Parti eau sol: Stabilisateurs - Electrovanne déviatrice	J
• Parti arienne: Nivellement panier - Notation panier - Jib – Electrovanne proportionnelle	K
• Parte arienne: 1° cylindre - 2° cylindre - Bras télescopique - Rotation	L
• Moteur Diesel: Système du contrôle RPM	M
• Moteur Diesel Perkins 2 cylindres: Capteurs et électro stop	N
• Moteur Diesel Perkins 2 cylindres: Démarrage et préchauffage	O
• Moteur Diesel Hatz 1 cylindre	P
• Moteur essence Honda 1 cylindre	Q
• Alimentation 12 Volt	R
• Ligne 120/230 Volt	S
• Disposition composants	T
• Signifie abréviations des composants	U
• Layout connecteurs	V
• Version lithium LL17.75	Y1, Y2...
• Version lithium LL20.10	Z1, Z2...

- **HOW TO READ THE WIRING DIAGRAMS**
- **COME LEGGERE GLI SCHEMI ELETTRICI**
- **CÓMO LEER LOS ESQUEMAS ELÉCTRICOS**
- **COMMENT LIRE LES PLANS ÉLECTRIQUES**

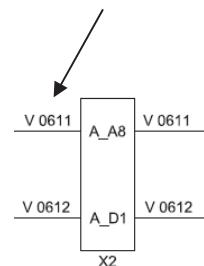
- Big letter identify the page number
- La lettera grande identifica il numero di pagina
- La letra grande identifica el numero de pagina
- La lettre grand indique le numéro du page



- Letter X always identify connectors
- La lettera X identifica sempre connettori
- La letra X identifica siempre conectores
- La lettre X indique toujours connecteurs



- Every wire is identified by the color and, if present, a number
- Ogni cavo è identificato dal colore e, se presente, da un numero
- Todos los cables son identificados da el color y, si presente, da un numero
- Chaque câble est identifié par le couleur et, si présente, par le nombre



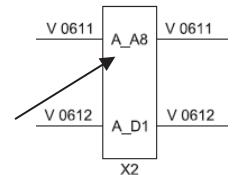
COLOUR CODES	
A	= AZURE
B	= BLACK
BL	= BLUE
BR	= BROWN
G	= GREEN
GR	= GREY
OR	= ORANGE
P	= PINK
R	= RED
V	= PURPLE
W	= WHITE
Y	= YELLOW
SCH	= SHIELDING

TABELLA COLORI	
A	= AZZURRO
B	= NERO
BL	= BLU
BR	= MARRONE
G	= VERDE
GR	= GRIGIO
OR	= ARANCIO
P	= ROSA
R	= ROSSO
V	= VIOLA
W	= BIANCO
Y	= GIALLO
SCH	= SCHERMATURA

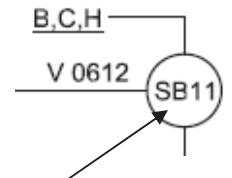
TABLA COLORES	
A	= AZUL
B	= NEGRO
BL	= AZUL
BR	= MARRÓN
G	= VERDE
GR	= GRIS
OR	= NARANJA
P	= ROSA
R	= ROJO
V	= VIOLETA
W	= BLANCO
Y	= AMARILLO
SCH	= CRIBADO

TABLEAU COULEURS	
A	= BLEU CLAIR
B	= NOIR
BL	= BLEU
BR	= MARRON
G	= VERT
GR	= GRIS
OR	= ORANGE
P	= ROSE
R	= ROUGE
V	= VIOLET
W	= BLANC
Y	= JAUNE
SCH	= BLINDAGE

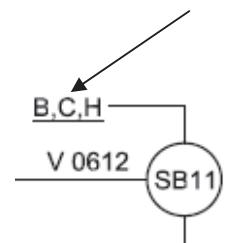
- Figures in the connectors, shows the pin numbers
- Le cifre all'interno dei connettori, indicano il numero del pin
- Las cifras dentro de los conectores, indican el numero del los contactos
- Les chiffres dans les connecteurs, indiquent le nombre des goupilles



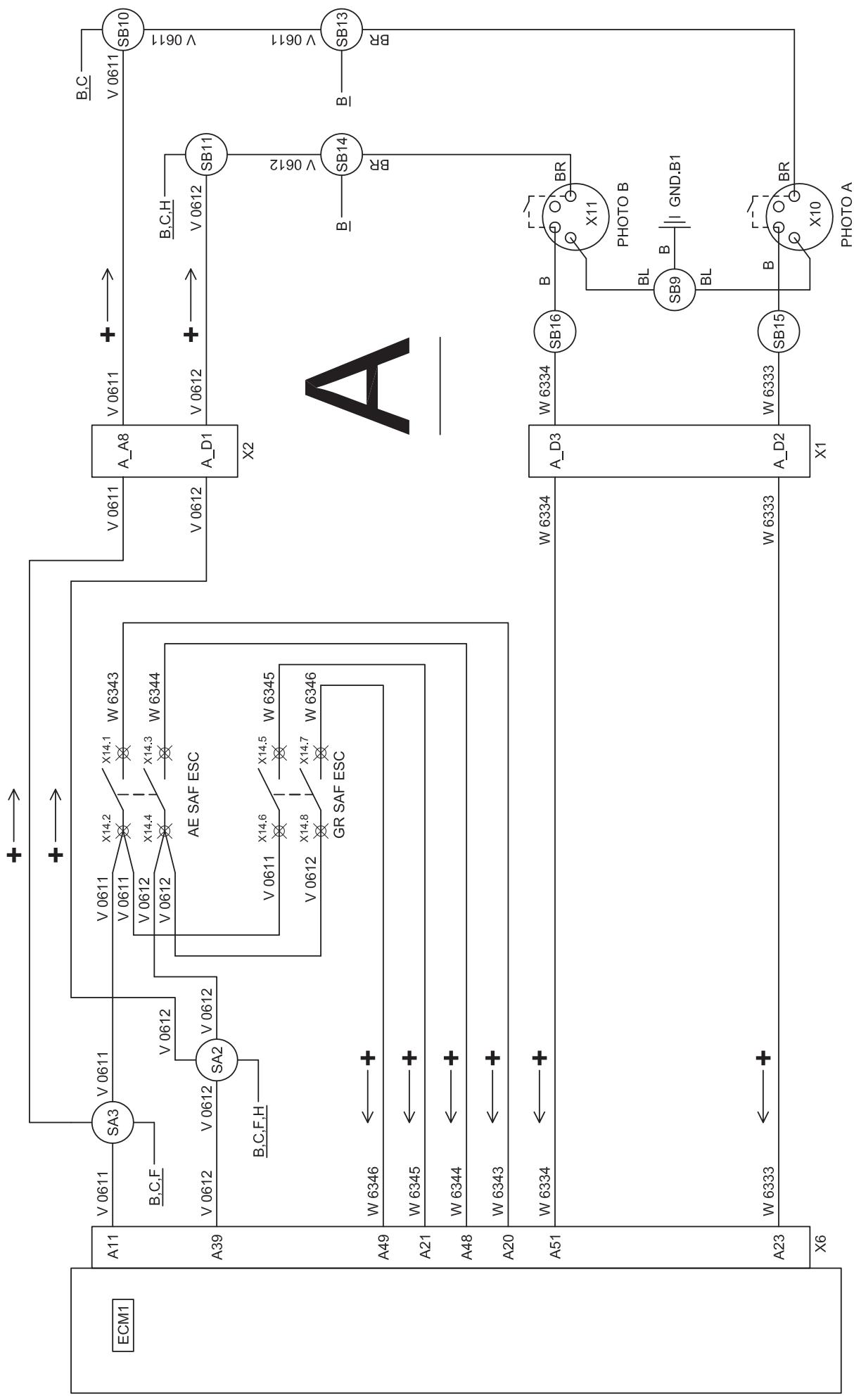
- Circles show welds with two or more wires. Each weld has a identification number
- I cerchi mostrano saldature con due o più cavi. Ogni saldatura ha un numero identificativo
- Los circulo maestra soldaduras con dos o más cables. Cada soldadura tiene un numero de identificación
- Les cercles indiquent les soudures avec deux ou plusieurs câbles. Chaque soudure a un numéro d'identification



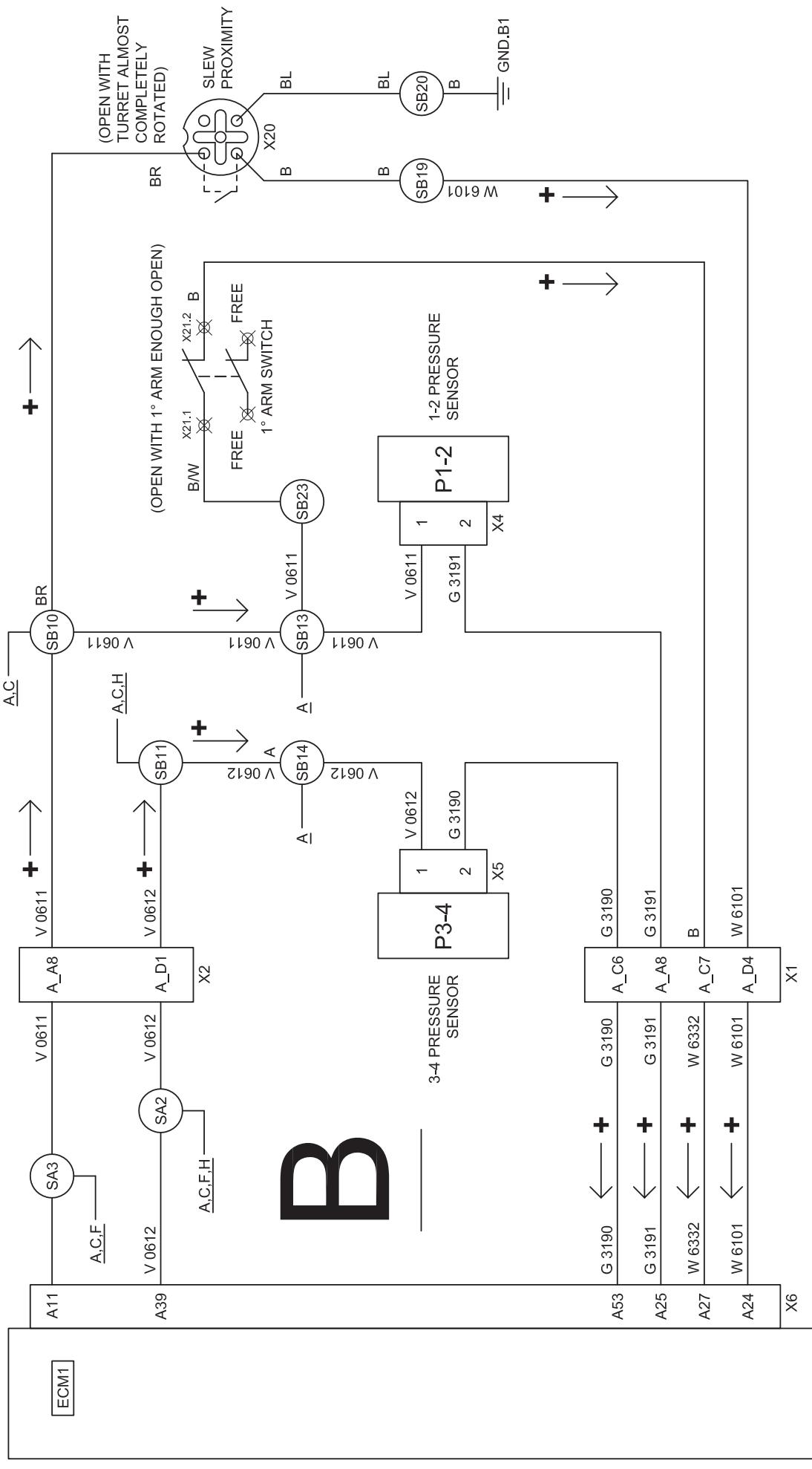
- Underlined letters show the page where the component is present too
- Le lettere sottolineate indicano le altre pagine dove il componente è presente
- Las letras subrayadas indican las otras páginas en donde el componente está presente
- Les lettre soulignées indiquent les autres pages où le composant est présent



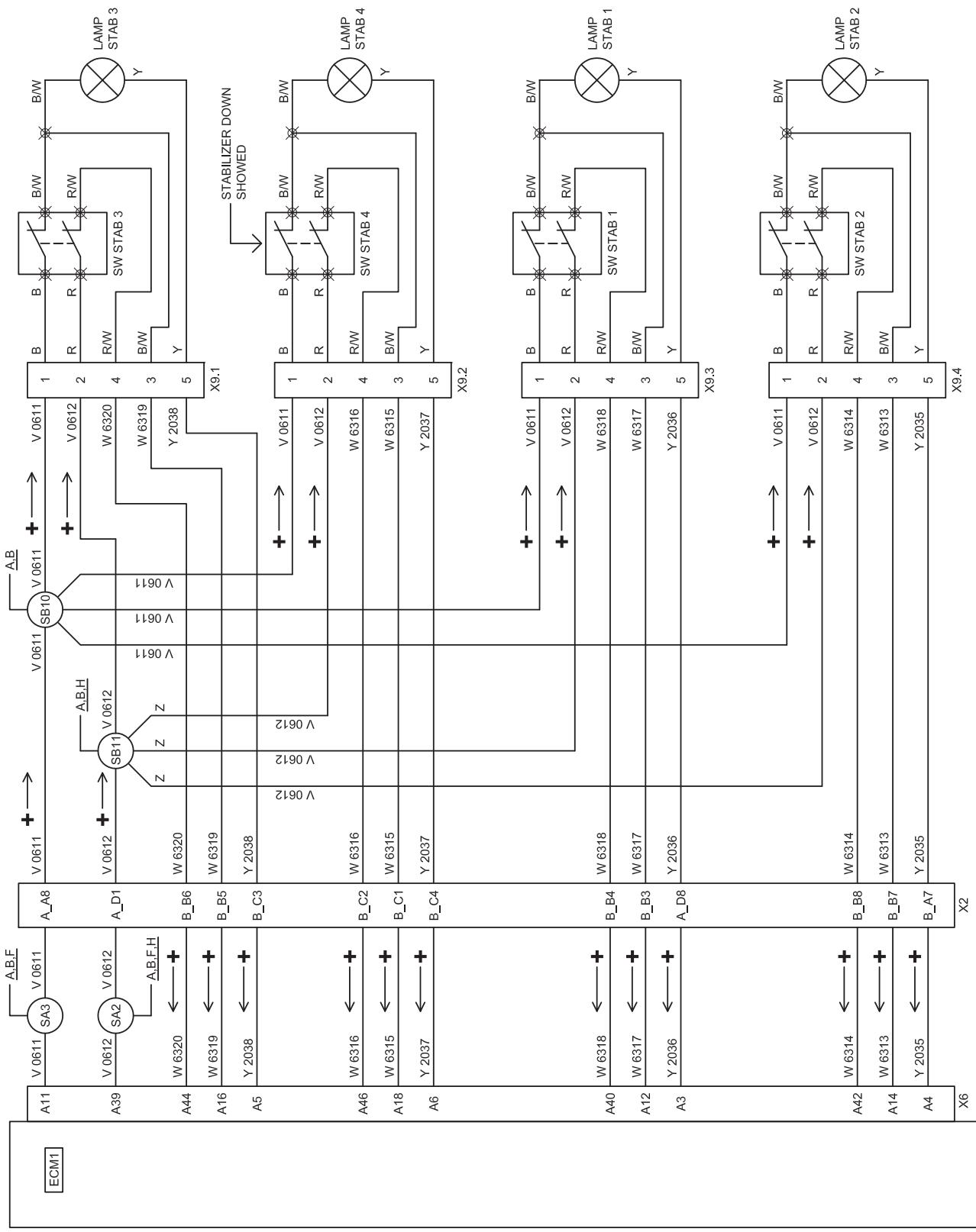
PHOTOCELLS - SAFETY EXCLUSION



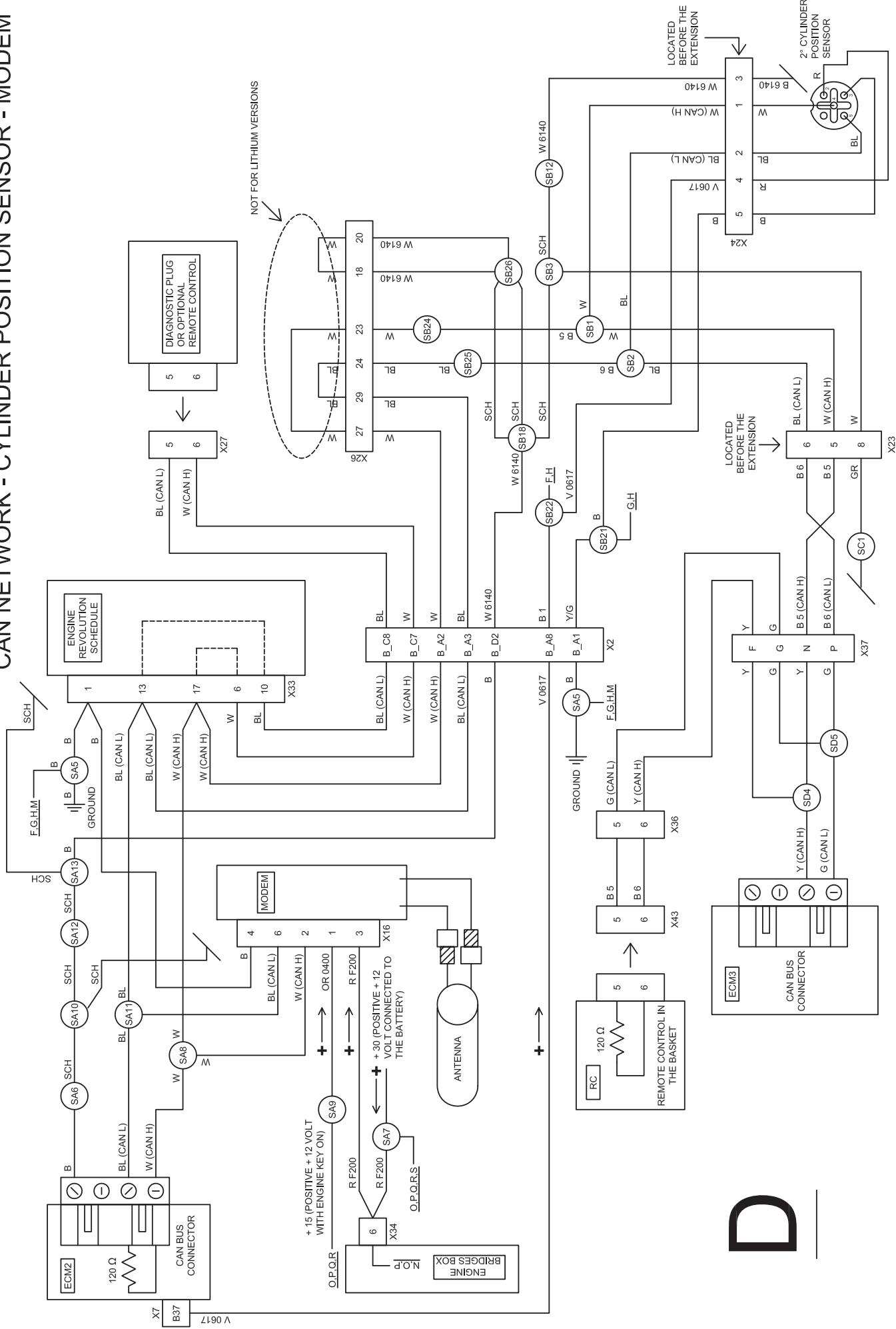
SLEW PROXIMITY - 1° ARM SWITCH - STABILIZERS PRESSURE SENSORS



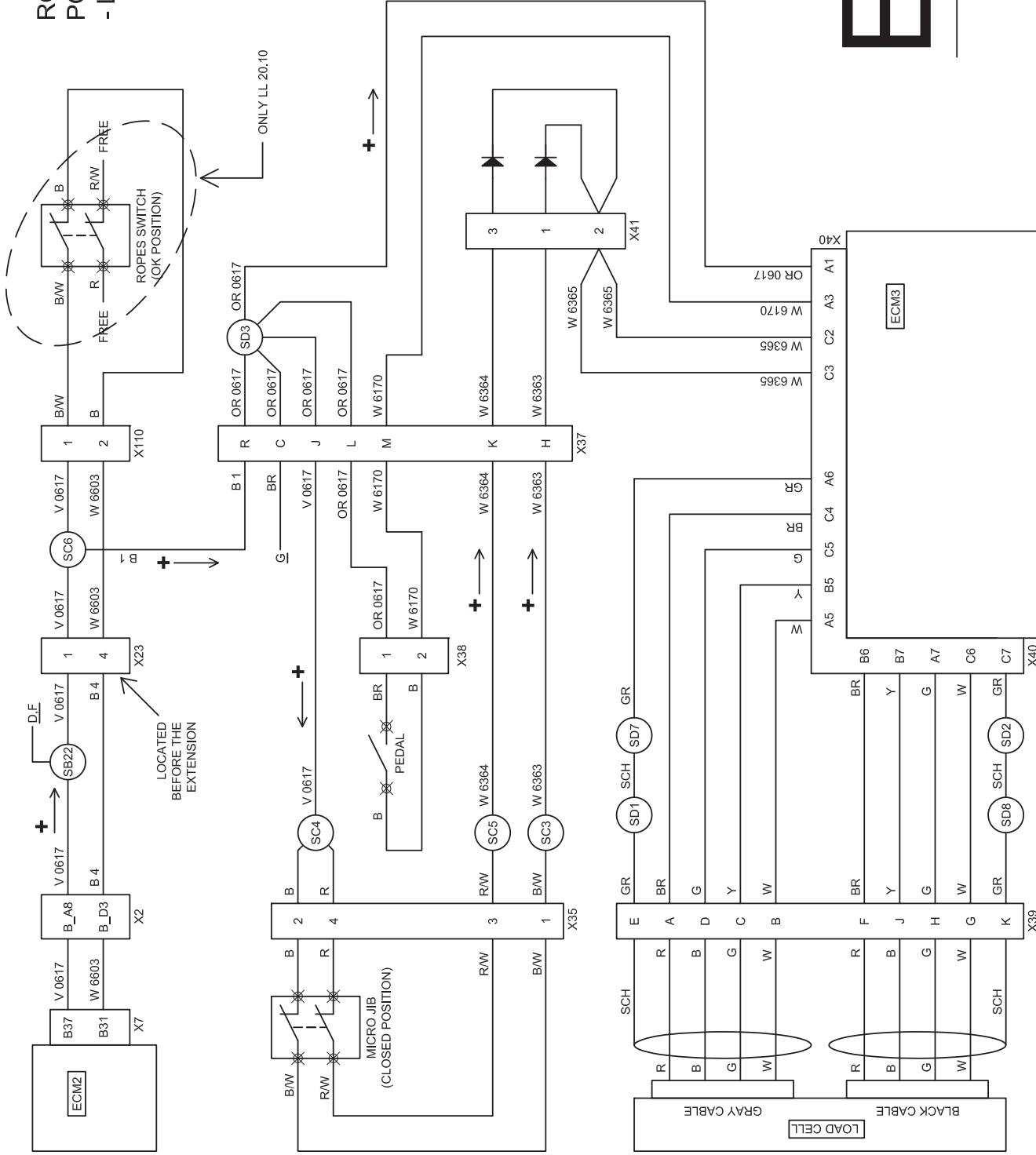
OUTRIGGERS SWITCHES



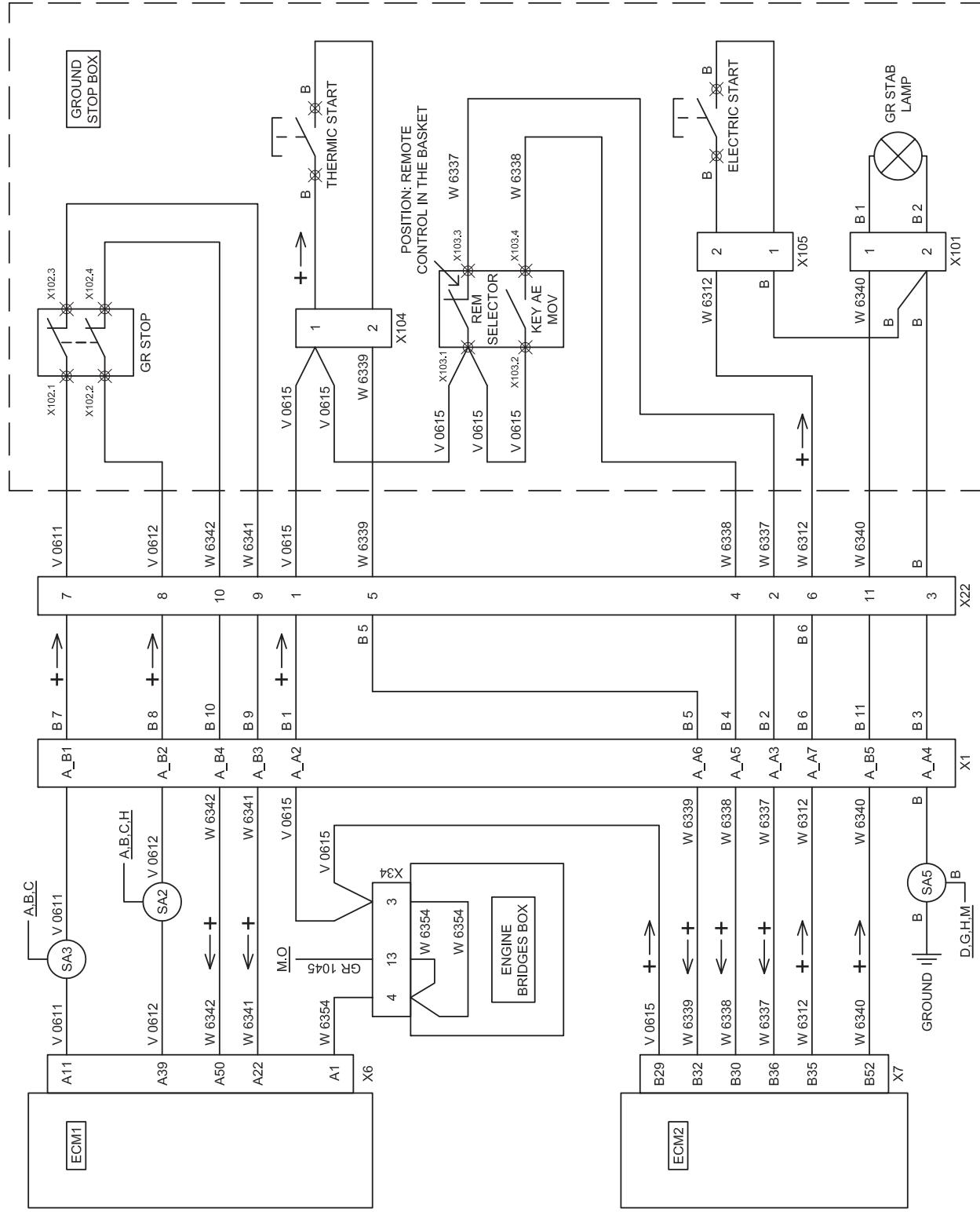
CAN NETWORK - CYLINDER POSITION SENSOR - MODEM



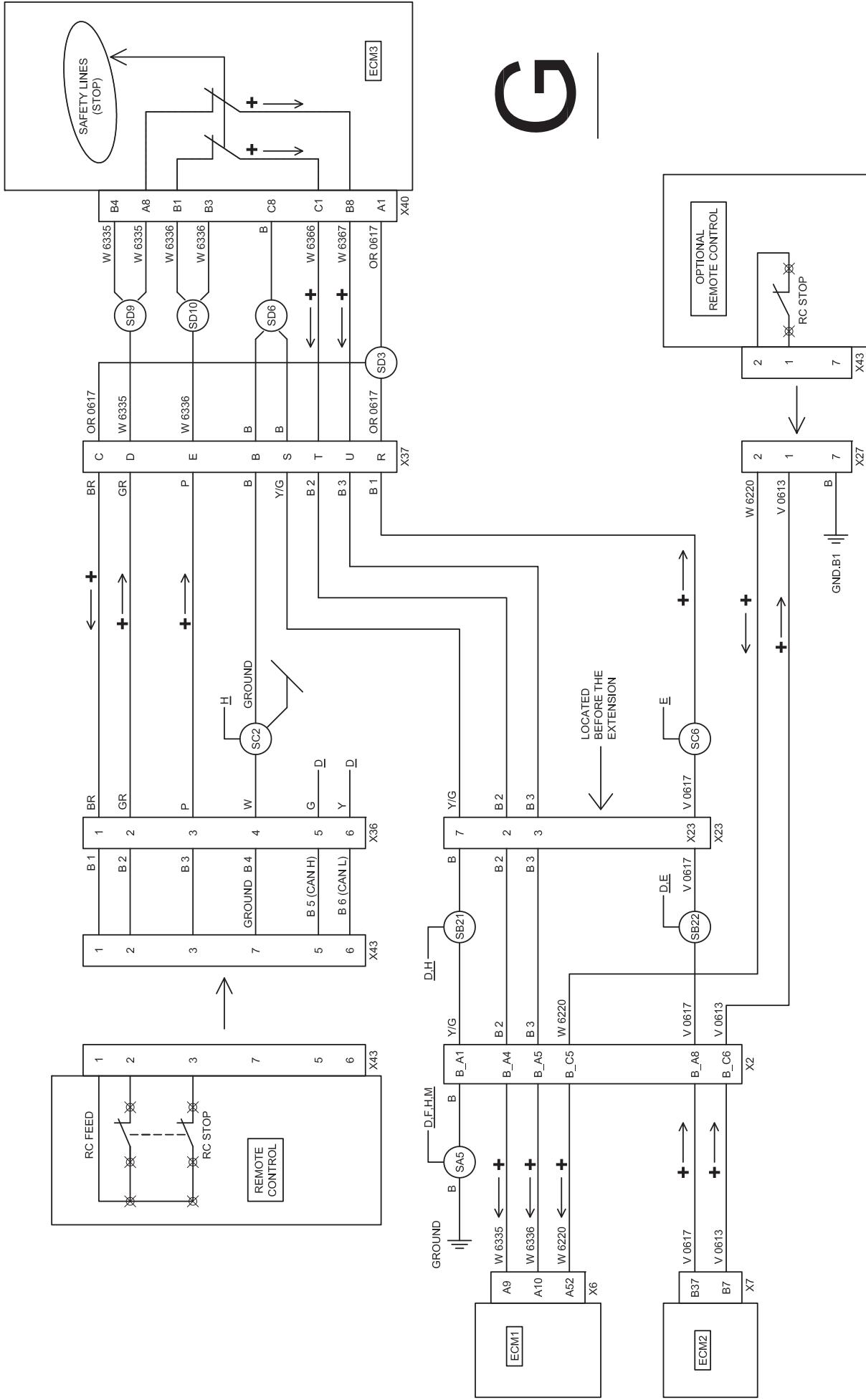
**ROPE SWITCH - JIB
POSITION SWITCH - PEDAL
- LOAD CELL**



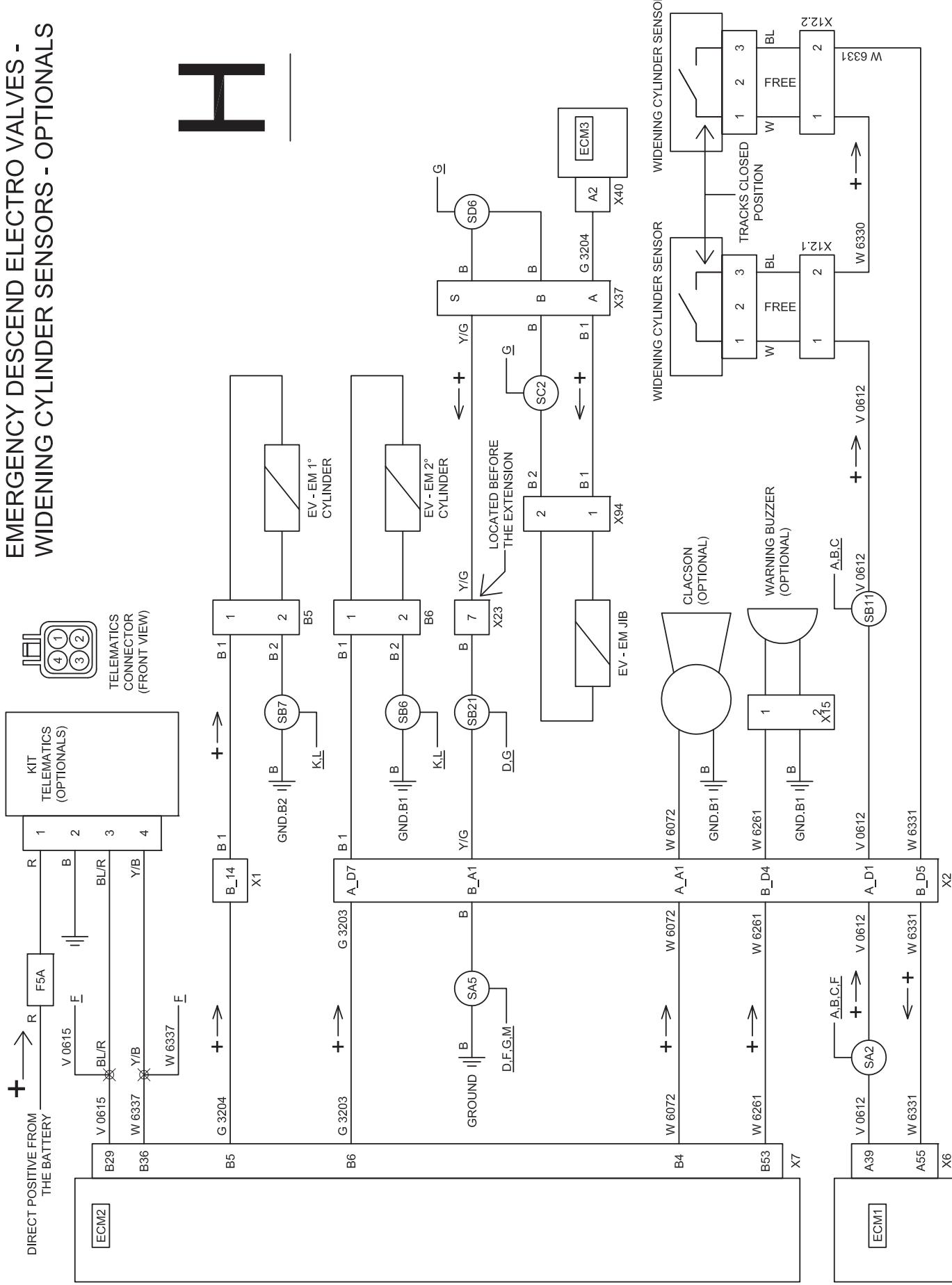
GROUND POSITION CONTROL BOX



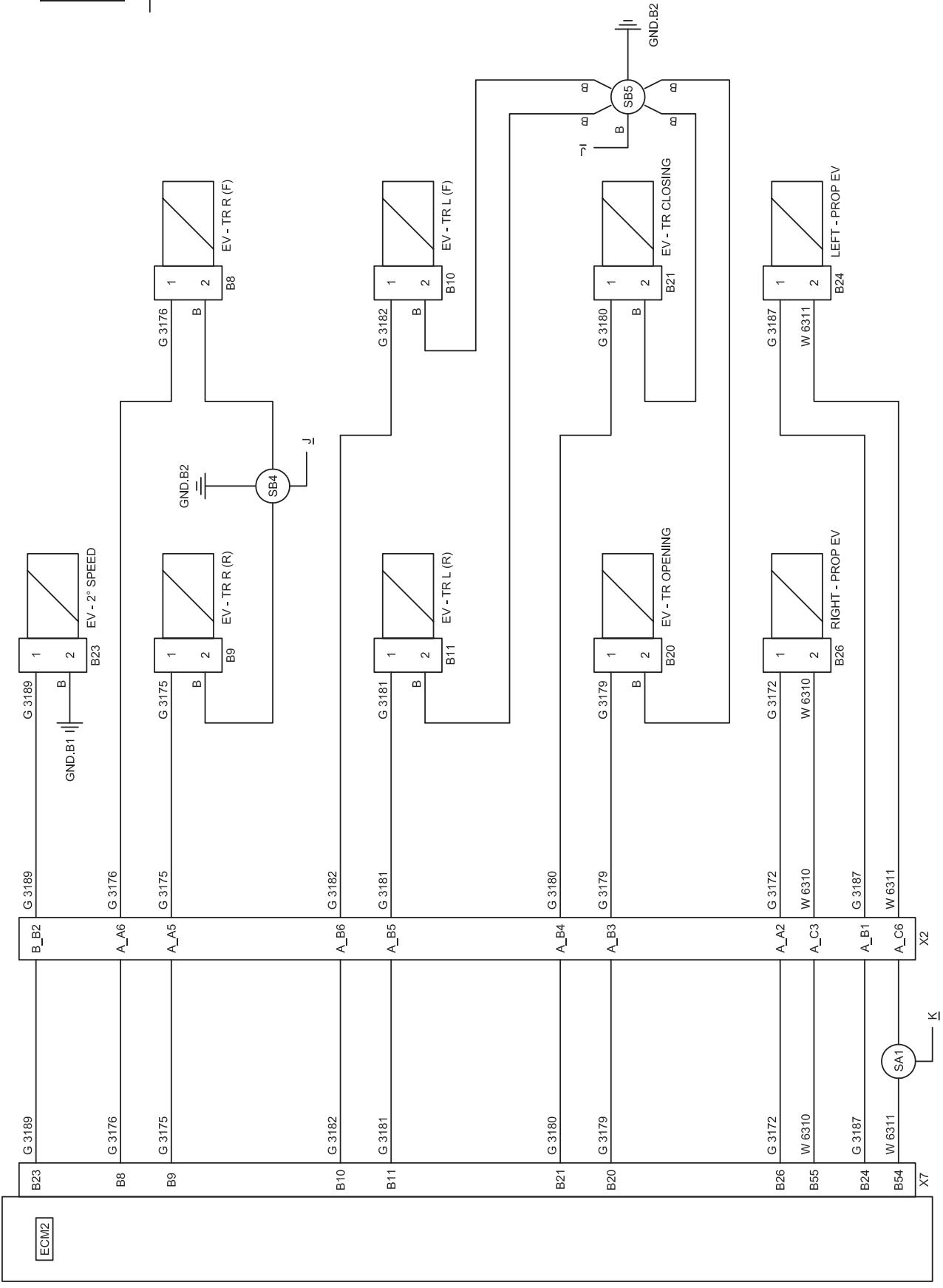
AERIAL SAFETY LINE



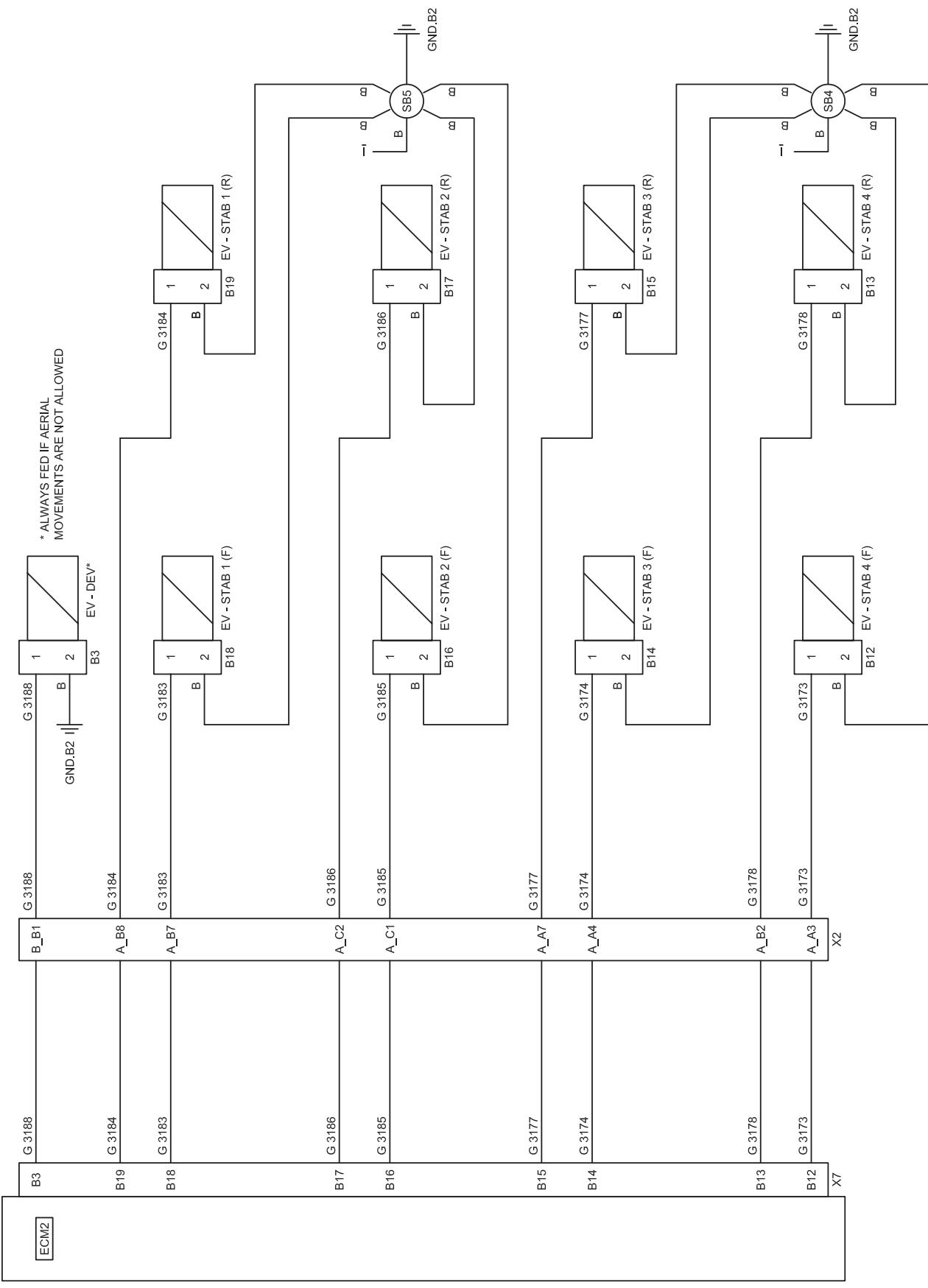
EMERGENCY DESCEND ELECTRO VALVES - WIDENING CYLINDER SENSORS - OPTIONAL



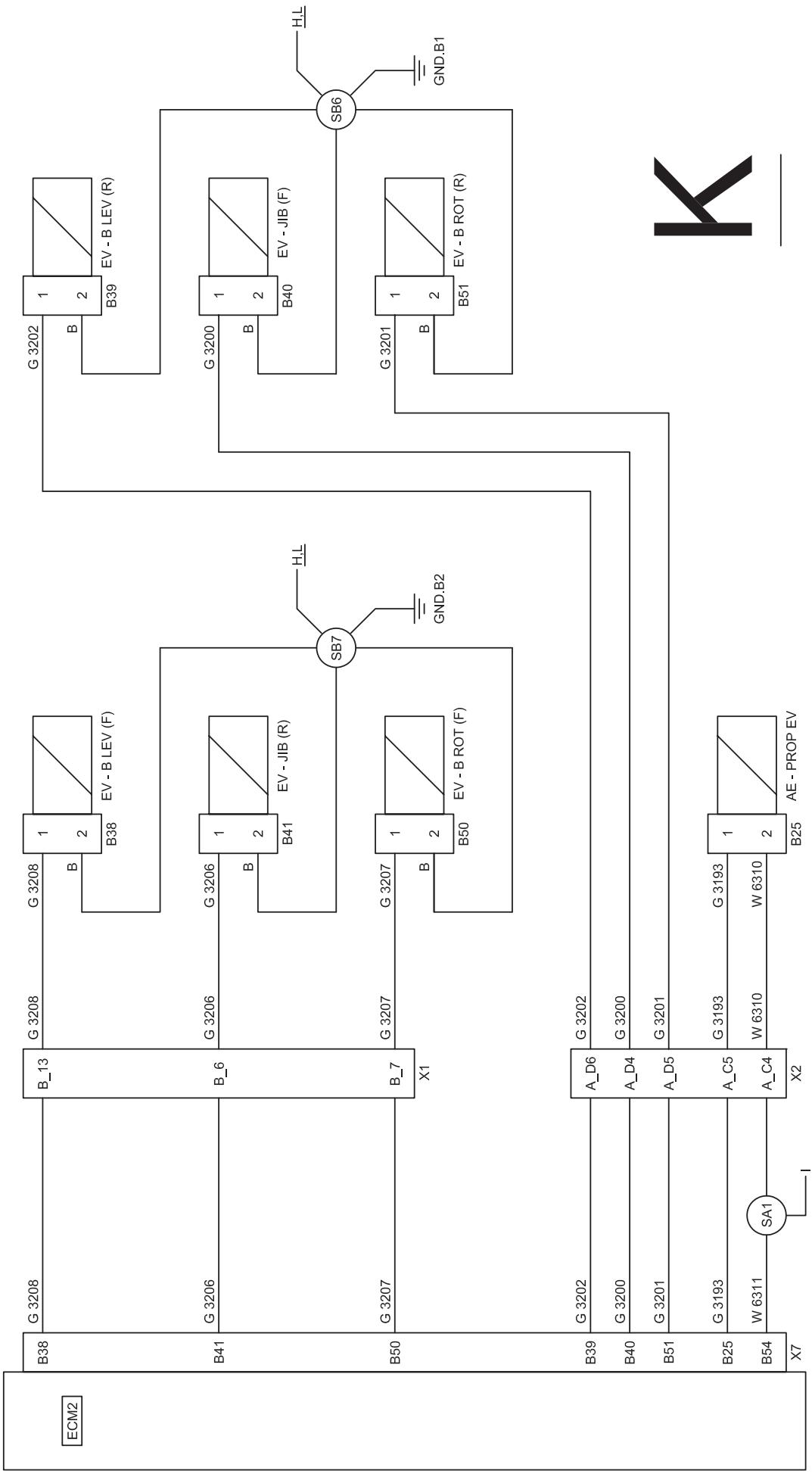
GROUND PART: TRACKS - UNDERCARRIAGE WIDENING - 2° SPEED - PROPORTIONAL ELECTRO VALVES



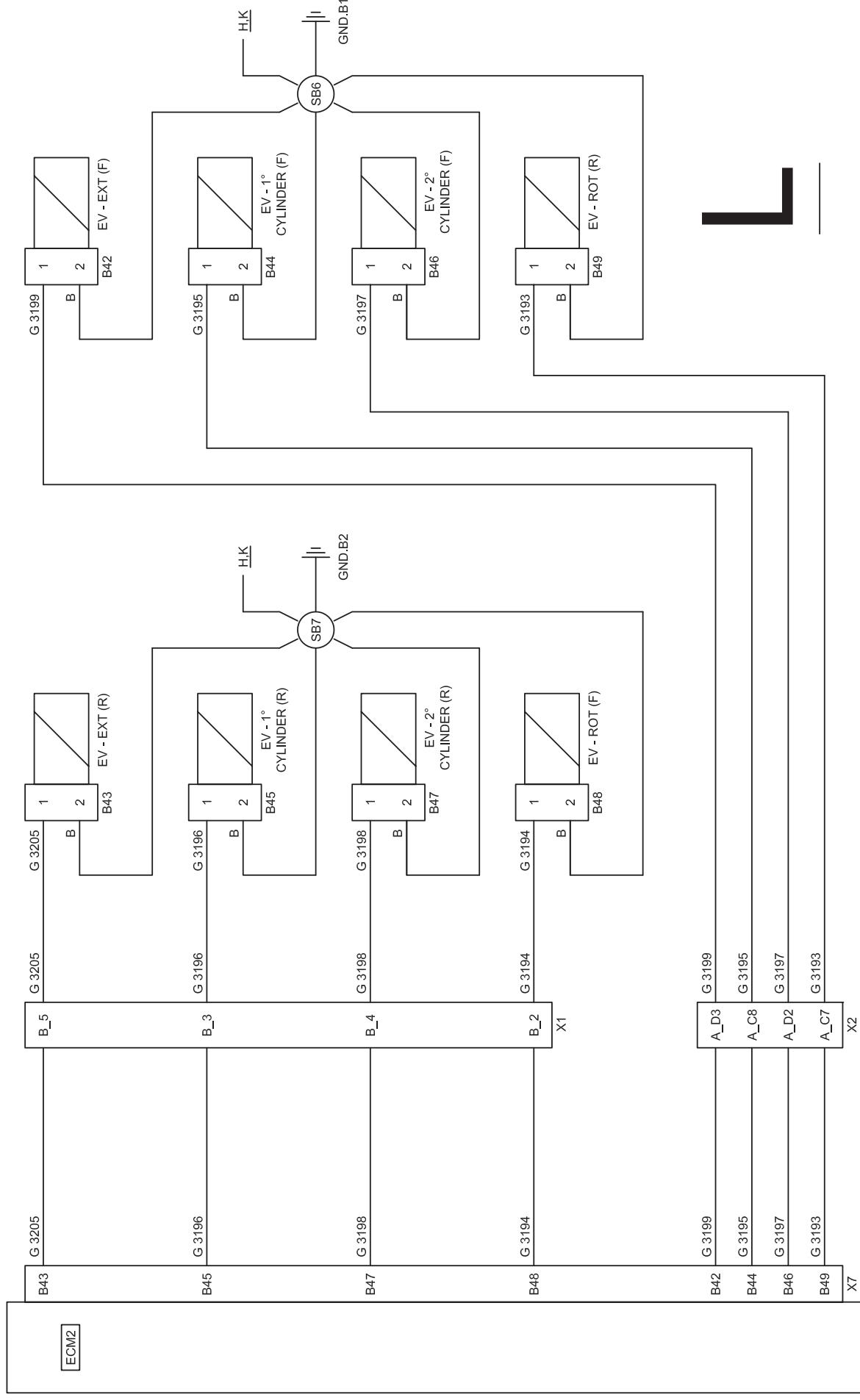
GROUND PART: OUTRIGGERS - ELECTRIC DIVERTER



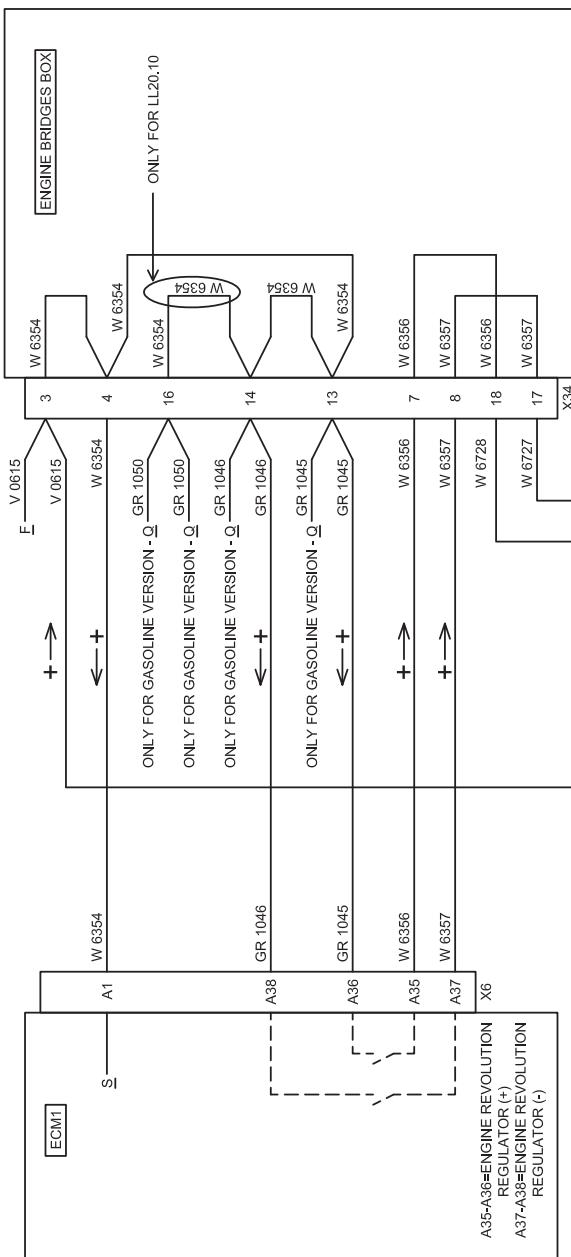
AERIAL PART: BASKET LEVELLING - BASKET ROTATION - JIB PROPORTIONAL ELECTRO VALVE



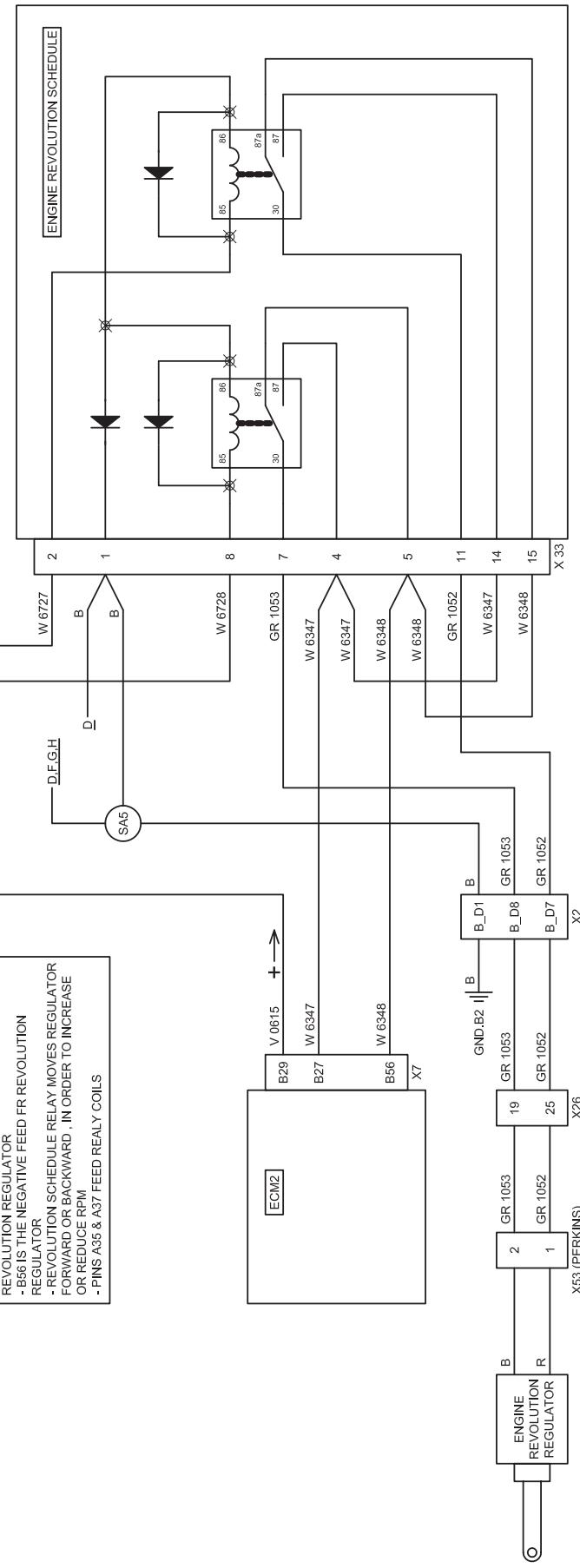
AERIAL PART: 1° CYLINDER - 2° CYLINDER - EXTENSION - ROTATION



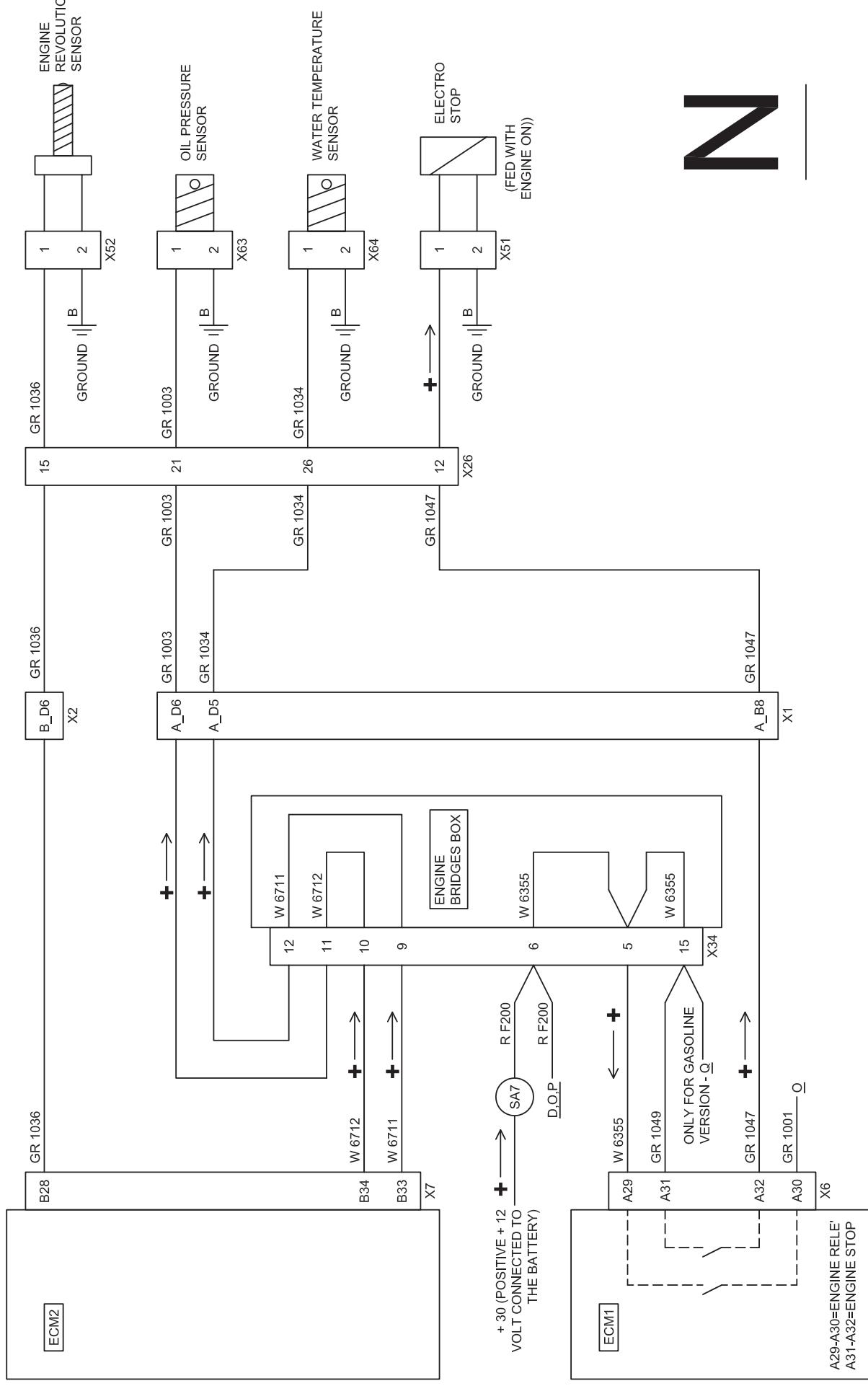
ENGINE DIESEL VERSIONS: RPM REGULATION SYSTEM



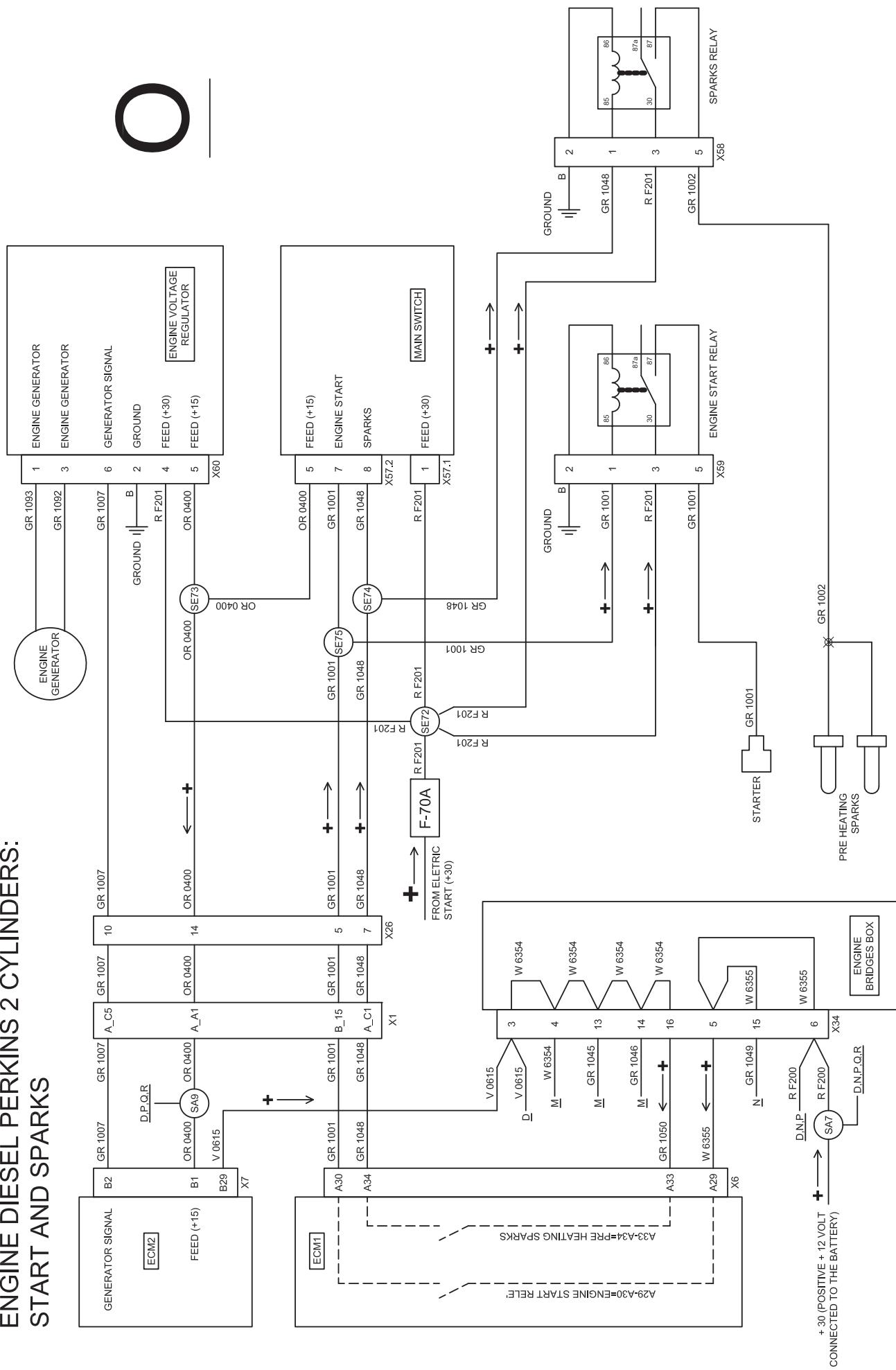
NOTE:
- B27 IS THE INTERMITTENTLY POSITIVE FEED FOR REVOLUTION REGULATOR
- B66 IS THE NEGATIVE FEED FR REVOLUTION REGULATOR
- REVOLUTION SCHEDULE RELAY MOVES REGULATOR FORWARD OR BACKWARD , IN ORDER TO INCREASE OR REDUCE RPM
- PINS A35 & A37 FEED REALY COILS



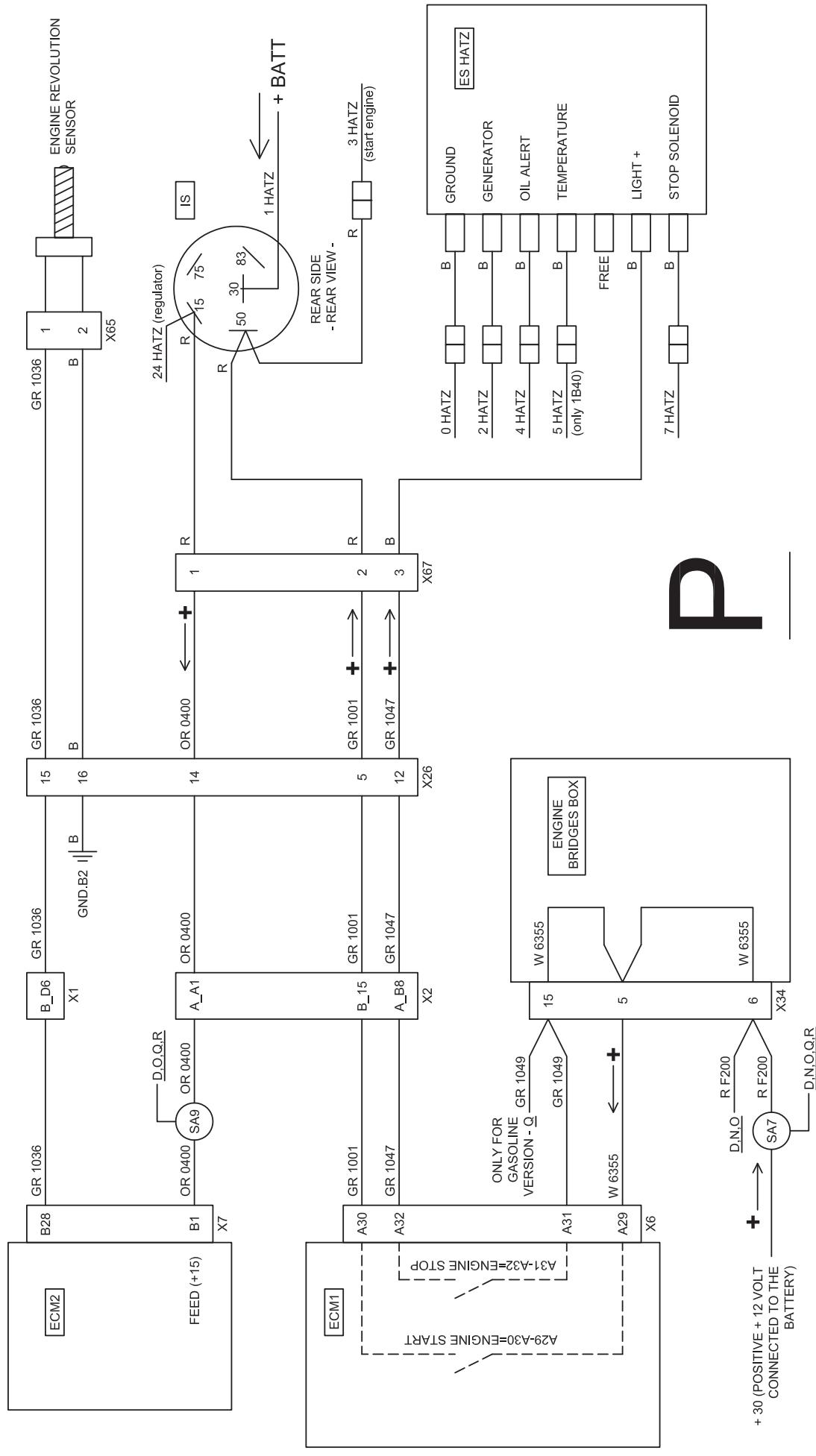
ENGINE DIESEL PERKINS 2 CYLINDERS: SENSORS AND ELECTRO STOP



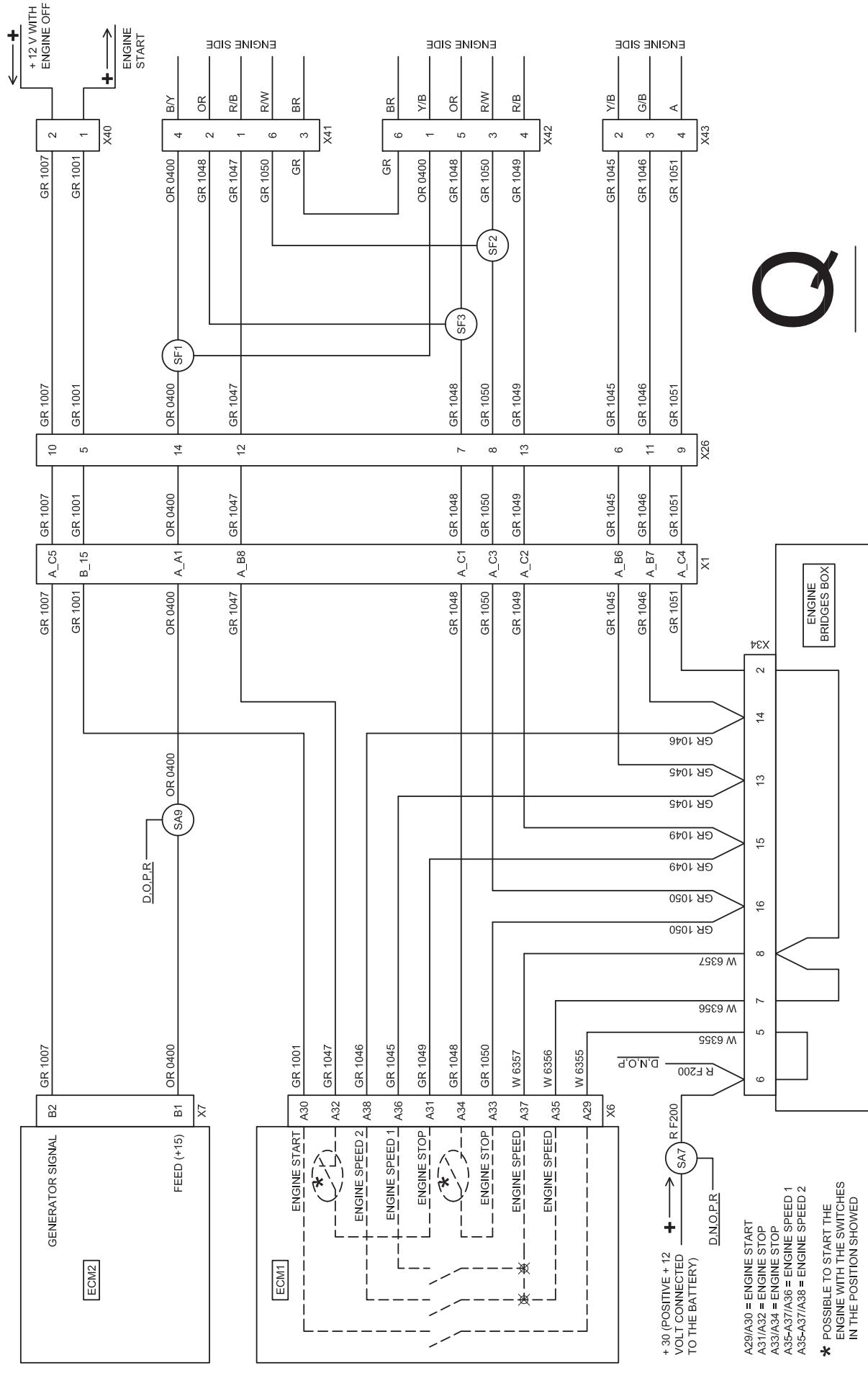
ENGINE DIESEL PERKINS 2 CYLINDERS: START AND SPARKS



ENGINE DIESEL HATZ 1 CYLINDER



ENGINE GASOLINE HONDA 1 CYLINDER

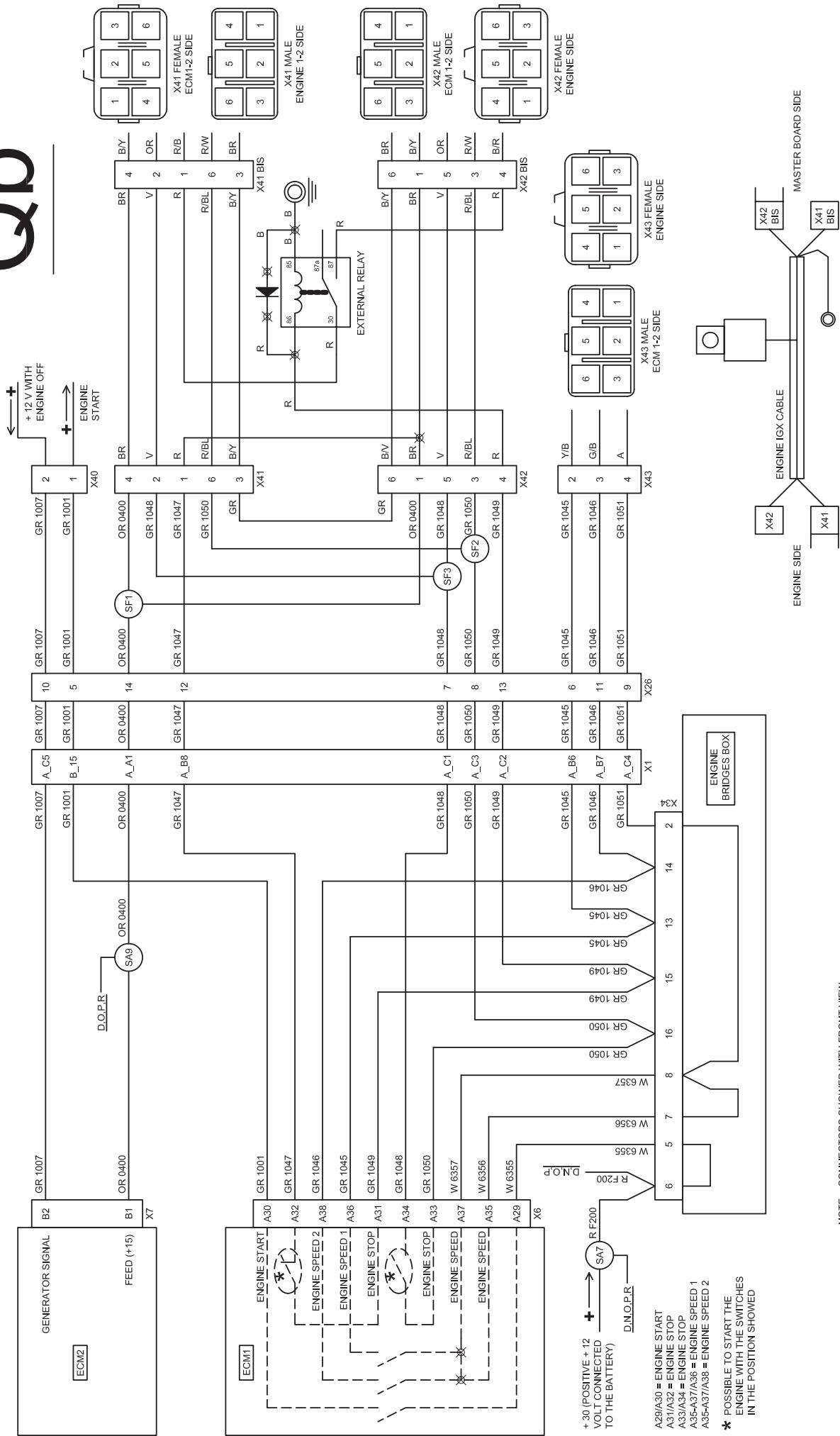


A29/A30 = ENGINE START
 A31/A32 = ENGINE STOP
 A33/A34 = ENGINE STOP
 A35-A37/A36 = ENGINE SPEED 1
 A35-A37/A38 = ENGINE SPEED 2
 * POSSIBLE TO START THE
 ENGINE WITH THE SWITCHES
 IN THE POSITION SHOWN

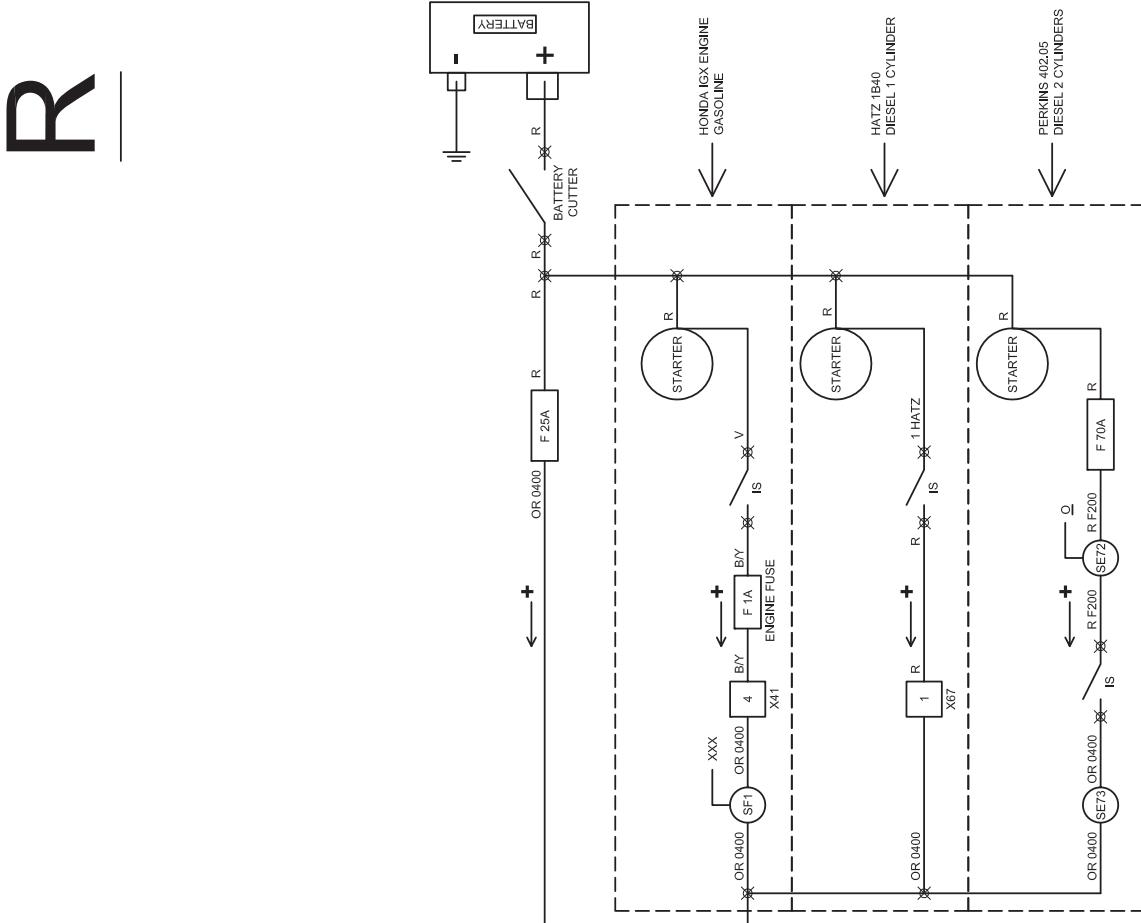
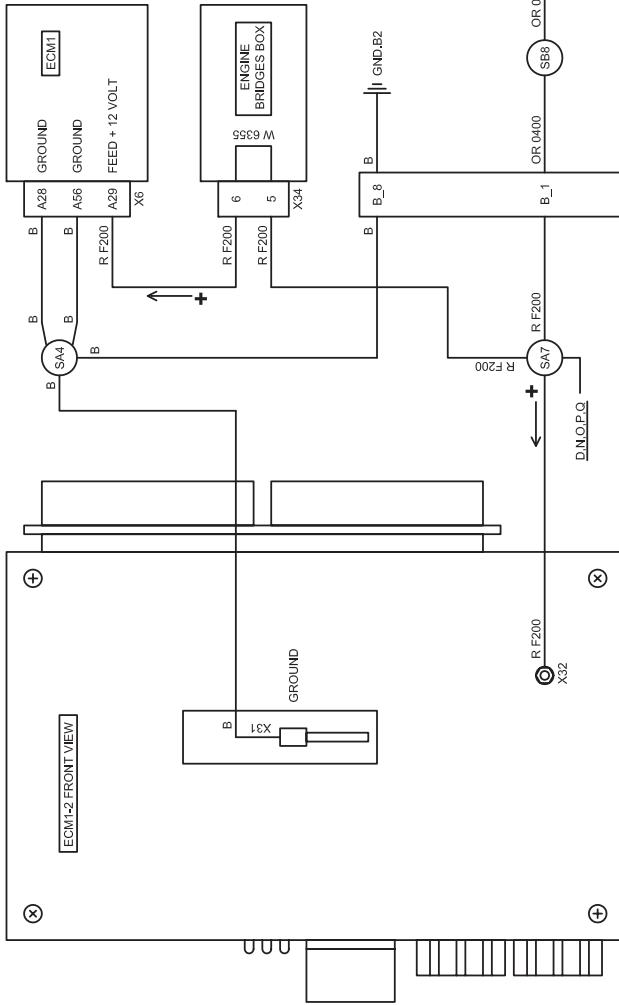
Q

ENGINE GASOLINE HONDA 1 CYLINDER

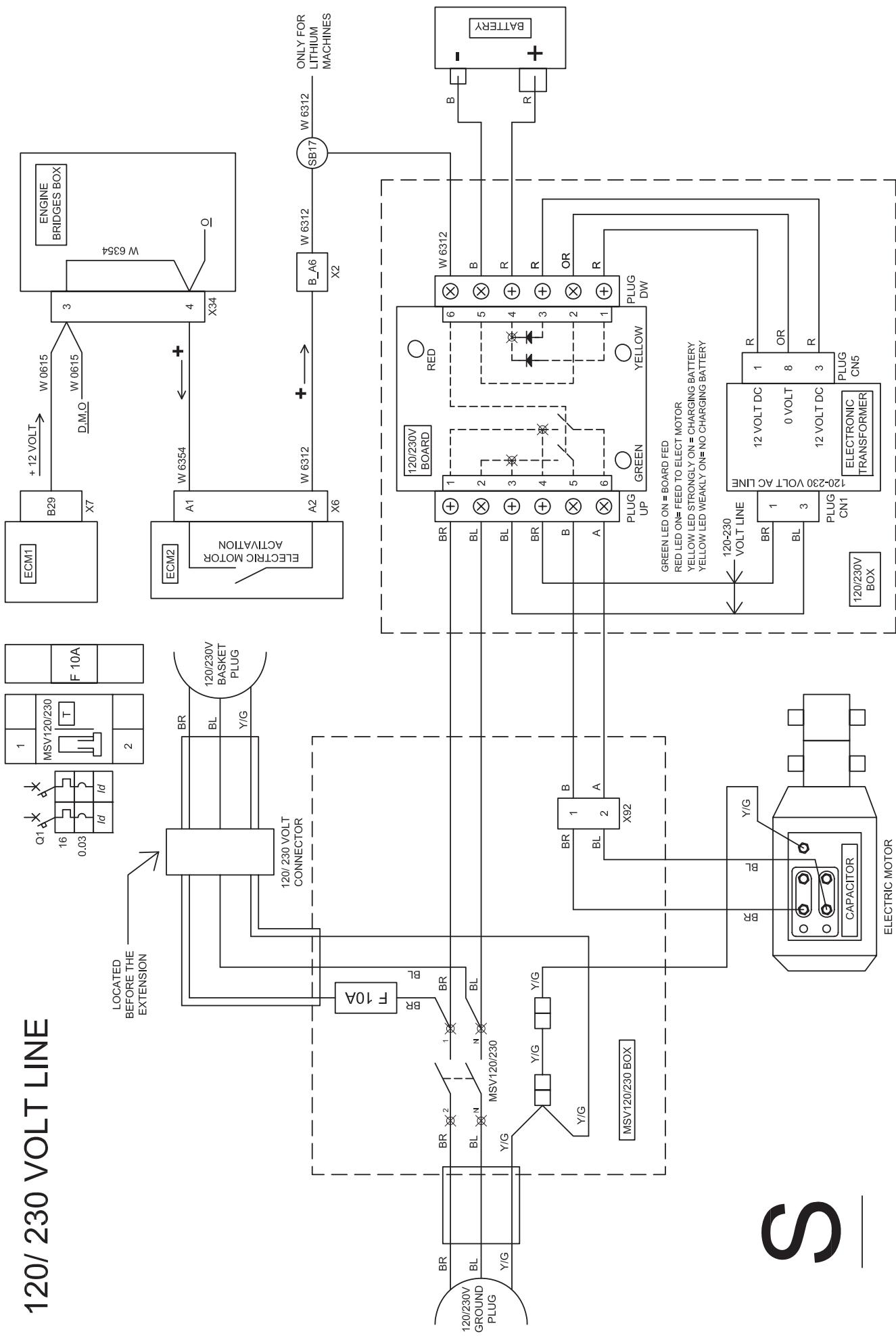
10



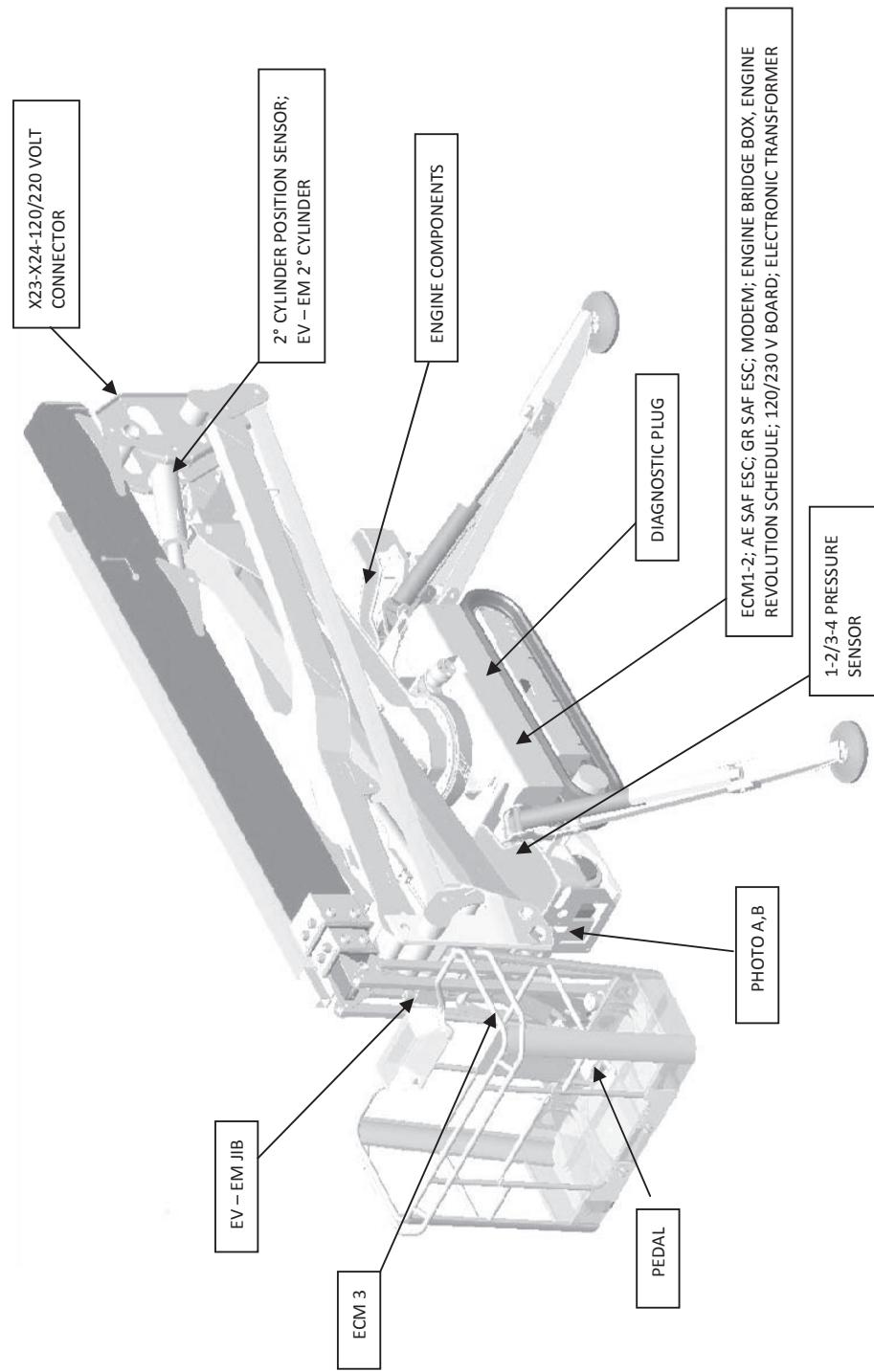
12 VOLT POWER SUPPLY

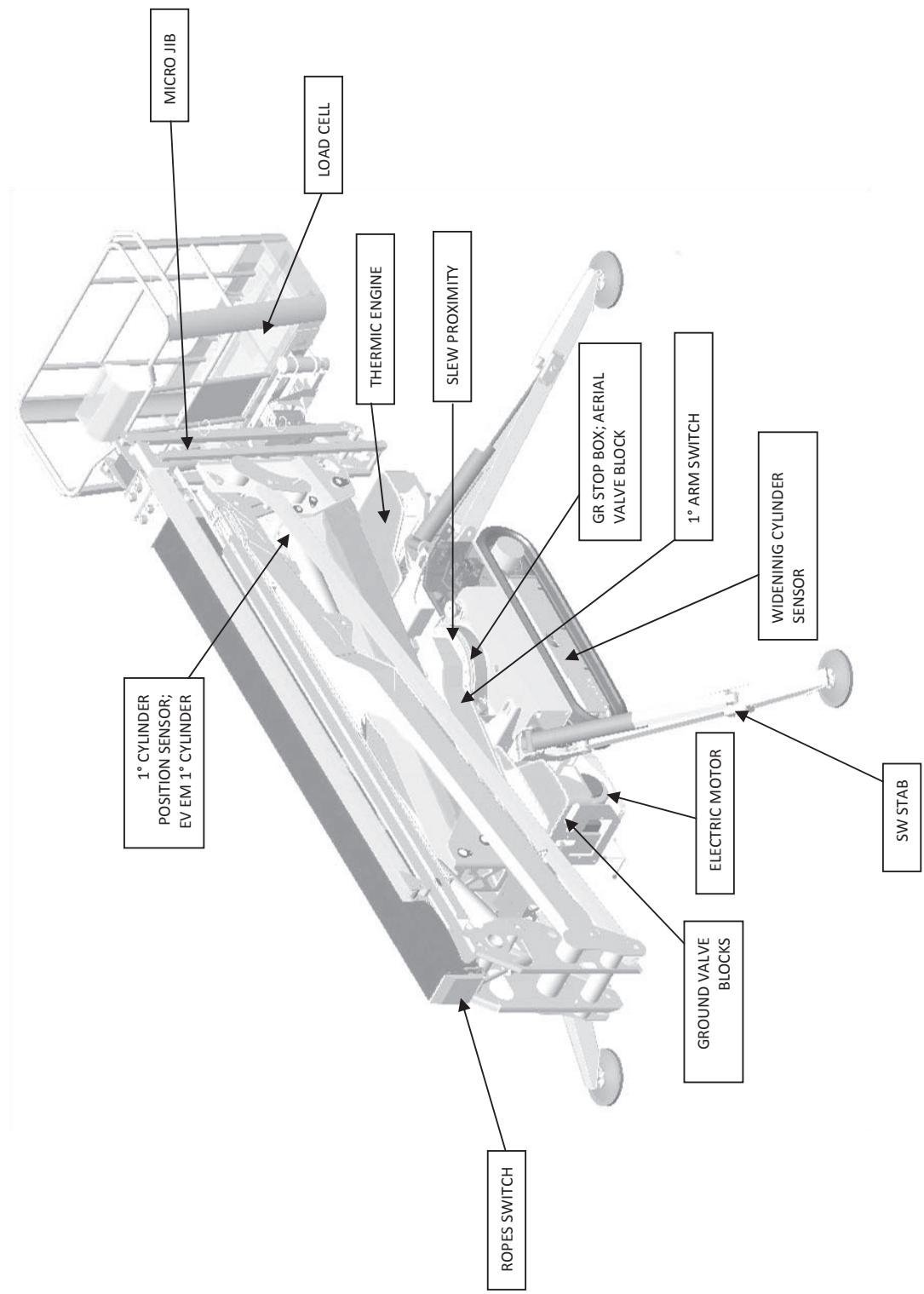


120/ 230 VOLT LINE



T - COMPONENTS LOCATION
T - LOCAZIONE COMPONENTI
T - COLOCACION COMPONENTES
T - DISPOSITION COMPOSANTS





U - COMPONENTS ABBREVIATION MEANING
U - SIGNIFICATO ABBREVIAZIONI COMPONENTI
U - SIGNIFICADO ABREVIATURA COMPONENTES
U - SIGNIFICATION ABBREVIATION COMPOSANT

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN	DESCRIPTION
1° ARM SWITCH	1° ARM POSITION SWITCH	INTERRUTTORE POSIZIONE 1° BRACCIO	INTERRUPTOR POSICION 1° BRAZO	INTERRUPTEUR POSITION 1° BRAS
1° CYLINDER POSITION SENSOR	1° AND 2° ARMS POSITION SENSOR	SENSORE DI POSIZIONE 1° E 2° BRACCIO	SENSOR POSICION 1° E 2° BRAZO	CAPTEUR DE POSITION 1ER ET 2EME BRAS
1-2 PRESSURE SENSOR	PRESSURE SENSOR STABILIZERS 1 AND 2	PRESSOSTATO STABILIZZATORI 1 E 2	SENSOR DE PRESIÓN STABILIZADORES 1 Y 2	CAPTEUR PRESSION STABILISATEURS 1 ET 2
120/230V BOARD	120/230 VOLT BOARD (BATTERY CHARGE, ELECTRIC ENGINE CONTROLLER)	SCHEDA 120/230 VOLT (CARICA BATTERIE, CONTROLLO MOTORE ELETTRICO)	TARJETA 120/230 VOLT (REGULADOR DE TENSION, CONTROL MOTOR ELECTRICO)	FICHE 120/230 VOLT (CHARGE BATTERIES, CONTRÔLE MOTEUR ÉLECTRIQUE)
120/230V BOX	120/230 VOLT BOX	SCATOLA 120/230 VOLT	CAJA 120/230 VOLT	BOÎTE 120/230 VOLT
120/230V PLUG	GROUND	PRESA 120/230 VOLT A TERRA	ENCHUFÉ 120/230 VOLT EN TIERRA	PRISE 120/230 VOLT AU SOL
2 CYLINDER POSITION SENSOR	3°° ARMS POSITION SENSOR	SENSORE DI POSIZIONE 3° BRACCIO	SENSOR POSICION 3° BRAZO	CAPTEUR DE POSITION 3EME BRAS
3-4 PRESSURE SENSOR	PRESSURE SENSOR STABILIZERS 3 AND 4	PRESSOSTATO STABILIZZATORI 3 E 4	SENSOR DE PRESIÓN STABILIZADORES 3 Y 4	CAPTEUR PRESSION STABILISATEURS 3 ET 4
AE - PROP EV	AERIAL PART PROPORTIONAL ELECTRO VALVE	ELETROVALVOLA PROPORTZIONALE AEREA	PARTE ELECTROVALVULA PROPORCIONAL AEREA	PARTIE ÉLECTROVANNE PROPORTIONNELLE PARTIE AÉRIENNE
AE SAF ESC	AERIAL SAFETY BYPASS KEY SWITCH	INTERRUTTORE A CHIAVE SICUREZZE PARTE AEREA	INTERRUTTORE A LLAVE SEGURIDADES PARTE AEREA	EXCLUSION INTERRUPTEUR DE BATTERIA
BATTERY		BATTERIA	BATERIA	PARTIE AÉRIENNE
CAN BUS CONNECTOR	GREEN CAN BUS CONNECTOR	CONNETTORE VERDE LINEA CAN BUS	CONNECTOR VERDE CAN BUS	CAN BUS CONNECTEUR
CAPACITOR	CAPACITOR	CONDENSATORE	CONDENSADOR	CONDENSATEUR
CLACSON (OPTIONAL)	CONNECTOR	CLACSON	CLACSON	CLACSON
DIAGNOSTIC PLUG	DIAGNOSTIC CONNECTOR (RAHMINO)	CONNETTORE DI DIAGNOSI (RAHMINO)	CONNECTOR PARA DIAGNOSTICO (RAHMINO)	CONNECTEUR DE DIAGNOSTIC (RAHMINO)
ECM1	MASTER BOARD FRONT MODULE	SCHEDA MASTER FRONTALE	TARJETA MASTER FRONTAL	FICHE ÉLECTRONIQUE DE CONTRÔLE
ECM1-2 BOX	ELECTRONIC CONTROL MODULE 1-2 BOX	SCATOLA SCHEDA CONTROLLO 1 E 2	D1 CAJA TARJETA DE CONTROL 1 Y 2	ECM1-2 BOX
ECM2	MASTER BOARD BACK MODULE	SCHEDA MASTER POSTERIORE	TARJETA MASTER POSTERIOR	FICHE ÉLECTRONIQUE DE CONTRÔLE POSTERIOR
ECM3	LOAD CELL BOARD	SCHEDA CELLA DI CARICO	TARJETA CELA DE CARGA	FICHE CÉLULE DE CHARGEMENT

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN	DESCRIPTION
ELECTRIC MOTOR	ELECTRIC MOTOR	MOTORE ELETTRICO	MOTOR ELECTRICO	MOEUR ÉLECTRIQUE
ELECTRIC START	ELECTRIC MOTOR START PUSH BUTTON	PULSANTE AVVIAMENTO MOTORE ELETTRICO	BOTON DE ARRANQUE MOTOR ELECTRICO	INTERRUPTEUR DE DÉMARRAGE MOTEUR
ELECTRO STOP	ELECTRO STOP	ELETRO STOP	ELECTRO STOP	INTERRUPTEUR THERMIQUE
ELECTRONIC TRANSFORMER	ELECTRONIC TRANSFORMER	TRASFORMATORE ELETTRONICO	TRANSFORMADOR ELECTRONICO	TRANSFORMATEUR ÉLECTRONIQUE
ENGINE BRIDGE BOX	ENGINE ELECTRIC BRIDGE BOX	SCATOLA PONTI ELETTRICI MOTORE	CAJA PUENTES ELECTRICOS MOTOR	BOITE PONTES ELECTRIQUE MOTEUR
ENGINE GENERATOR	ENGINE GENERATOR	GENERATORE	GENERATOR	GÉNÉRATEUR
ENGINE GROUND	ENGINE GROUND	MASSA MOTORE	MASA MOTOR	MASSE MOTEUR
ENGINE REVOLUTION REGULATOR	ENGINE REVOLUTION REGULATOR	REGOLATORE GIRI MOTORE	REGOLADOR REVOLUCIONAS MOTOR	RÉGULATEUR TOURS DU MOTEUR
ENGINE REVOLUTION SCHEDULE	ENGINE REVOLUTION CONTROL SCHEDULE	SCHEDA DI CONTROLLO GIRI MOTORE	PLACA DE CONTROL REVOLUCIONES MOTOR	RÉGULATEUR DU TENSION MOTEUR
ENGINE REVOLUTION SENSOR	ENGINE REVOLUTION SENSOR	SENSORE DI GIRI MOTORE	SENSOR REVOLUCIONES MOTOR	FICHE DU TOURS DE MOTEUR
ENGINE START RELAY	ENGINE START RELAY	RELE' AVVIAMENTO MOTOR	RELE' ARRANQUE MOTOR	RELAI DEMARREUR MOTEUR
ENGINE VOLTAGE REGULATOR	ENGINE VOLTAGE REGULATOR	REGOLATORE DI TENSIONE MOTORE	REGULADOR DE TENSION DEL MOTOR	CAPTEUR DES TOURS DU MOTEUR
ES HATZ	HATZ ELECTRONIC SCHEDULE	SCHEDA ELETTRONICA HATZ	PLACA ELÉCTRÓNICA HATZ	FICHE ELECTRONIQUE HATZ
EV - 1° CYLINDER (R) (CLOSING)	1° CYLINDER ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF 1° (CHIUSURA)	ELETROVALVULA ON-OFF 1° (CLINDRO (CHIUSURA))	ÉLECTROVANNE ON-OFF 1° (CYLINDRE (FERMETURE))
EV - 1° CYLINDER (F) (OPENING)	1° CYLINDER ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF 1° (APERTURA)	ELETROVALVULA ON-OFF 1° (CLINDRO (APERTURA))	ÉLECTROVANNE ON-OFF 1° CYLINDRE (OUVERTURE)
EV - 2° CYLINDER (R) (CLOSING)	2° CYLINDER ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF 2° (CHIUSURA)	ELETROVALVULA ON-OFF 2° (CLINDRO (CHIUSURA))	ÉLECTROVANNE ON-OFF 2° CYLINDRE (FERMETURE)
EV - 2° CYLINDER (F) (OPENING)	2° CYLINDER ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF 2° (APERTURA)	ELETROVALVULA ON-OFF 2° (CLINDRO (APERTURA))	ÉLECTROVANNE ON-OFF 2° CYLINDRE (OUVERTURE)
EV - 2° SPEED	TRACKS 2° SPEED ELECTRO VALVE	ELETROVALVOLA 2° VELOCITA'	ELETROVALVULA 2° VELOCIDAD	ÉLECTROVANNE 2ÈME VITESSE
EV - B LEV (R) NO BASKET LEVELLING (CLOSING)	BASKET LEVELLING ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF CESTO (CHIUSURA)	ELETROVALVULA ON-OFF NIVELACION DE LA CESTA (CLAUSURA)	ÉLECTROVANNE ON-OFF NIVELAGE PANIER (FERMETURE)
EV - B LEV (F) (OPENING)	BASKET LEVELLING ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF CESTO (APERTURA)	ELETROVALVULA ON-OFF NIVELACION DE LA CESTA (APERTURA)	ÉLECTROVANNE ON-OFF NIVELAGE PANIER (OUVERTURE)
EV - B ROT (R) (CLOCKWISE)	BASKET ROTATION ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF ROTAZIONE CESTO (ORARIO)	ELETROVALVULA ON-OFF ROTACION DE LA CESTA (HORARIO)	ÉLECTROVANNE ON-OFF ROTATION PANIER (HORAIRE)
EV - B ROT (F) NO BASKET ROTATION (ANTI CLOCKWISE)	BASKET ROTATION ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF ROTAZIONE CESTO (ANTI ORARIO)	ELETROVALVULA ON-OFF ROTACION DE LA CESTA (ANTI HORARIO)	ÉLECTROVANNE ON-OFF ROTATION PANIER (ANTI-HORAIRE)
EV - DEV	ELECTRIC DIVERTER	ELETROVALVOLA DEVIATRICE	ELETROVALVULA PROPORCIONAL AERA	ÉLECTROVANNE DEVIATRICE PARTIE
EV - EM 1° CYLINDER VALVE	1° CYLINDER EMERGENCY DESCEND ELECTRO VALVE	ELETROVALVOLA DISCESA DI EMERGENZA 1° CILINDRO	ELETROVALVULA BAJADA DE EMERGENCIA 1ER CYLINDRE	ÉLECTROVANNE DESCENTE D'URGENCE 1ER CYLINDRE

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN	DESCRIPTION
EV - EM 2° CYLINDER VALVE	2° CYLINDER EMERGENCY DESCEND ELECTRO VALVE	ELETROVALVOLA DISCESA DI EMERGENZA 2° CILINDRO	ELECTROVALVULA BAJADA DE EMERGENCIA 2° CLÍNDIRO	ELECTROVANNE DESCENTE D'URGENCE 2EME CYLINDRE
EV - EM JIB	JIB EMERGENCY DESCEND ELECTRO VALVE	ELETROVALVOLA DISCESA DI EMERGENZA JIB	ELECTROVALVULA BAJADA DE EMERGENCIA JIB	ELECTROVANNE DESCENTE D'URGENCE JIB
EV - EXT (R) (CLOSING)	EXTENSION ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF SFILLO (CHIUSURA)	ELECTROVALVULA ON-OFF TELESCOPICO (CLASURA)	ELECTROVANNE ON-OFF BRAS D'EXTRACTION (FERMETURE)
EV - EXT (F) (OPENING)	EXTENSION ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF SFILLO (APERTURA)	ELECTROVALVULA ON-OFF TELESCOPICO (APERTURA)	ELECTROVANNE ON-OFF BRAS D'EXTRACTION (OUVERTURE)
EV - JIB (R)	JIB ON-OFF ELECTRO VALVE (CLOSING)	ELETROVALVOLA ON-OFF JIB (CHIUSURA)	ELETROVALVULA ON-OFF JIB (CLASURA)	ELECTROVANNE ON-OFF JIB (FERMETURE)
EV - JIB (F)	JIB ON-OFF ELECTRO VALVE (OPENING)	ELETROVALVOLA ON-OFF JIB (APERTURA)	ELETROVALVULA ON-OFF JIB (APERTURA)	ELECTROVANNE ON-OFF JIB (OUVERTURE)
EV - ROT (R) (CLOCKWISE)	ROTATION ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF ROTAZIONE (ORARIO)	ELECTROVALVULA ON-OFF ROTACION (HORARIO)	ELECTROVANNE ON-OFF ROTATION (ANTI-HORAIRE)
EV - ROT (F) (CLOCKWISE)	ROTATION ON-OFF ELECTRO VALVE	ELETROVALVOLA ON-OFF ROTAZIONE (ANTI-ORARIO)	ELECTROVALVULA ON-OFF ROTACION (ANTI-HORARIO)	ELECTROVANNE ON-OFF ROTATION (ANTI-HORAIRE)
EV - STAB 1 (R)	LEFT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETROVALVOLA ON-OFF STABILIZZATORE ANTERIORE SINISTRO (CHIUSURA)	ELETROVALVULA ON-OFF STABILIZZATORE DELANTERO IZQUIERDO (CLASURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR GAUCHE (FERMETURE)
EV - STAB 1 (F)	LEFT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETROVALVOLA ON-OFF STABILIZZATORE ANTERIORE SINISTRO (APERTURA)	ELETROVALVULA ON-OFF STABILIZZATORE DELANTERO IZQUIERDO (APERTURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR GAUCHE (OUVERTURE)
EV - STAB 2 (R)	LEFT REAR OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETROVALVOLA ON-OFF STABILIZZATORE POSTERIORE SINISTRO (CHIUSURA)	ELETROVALVOLA ON-OFF STABILIZZATORE TRASERO IZQUIERDO (CLASURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (OUVERTURE)
EV - STAB 2 (F)	LEFT REAR OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETROVALVOLA ON-OFF STABILIZZATORE POSTERIORE SINISTRO (APERTURA)	ELETROVALVOLA ON-OFF STABILIZZATORE TRASERO IZQUIERDO (APERTURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (OUVERTURE)
EV - STAB 3 (R)	RIGHT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETROVALVOLA ON-OFF STABILIZZATORE ANTERIORE DESTRO (CHIUSURA)	ELETROVALVOLA ON-OFF STABILIZZATORE DELANTERO DERECHO (CLASURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (FERMETURE)
EV - STAB 3 (F)	RIGHT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETROVALVOLA ON-OFF STABILIZZATORE ANTERIORE DESTRO (APERTURA)	ELETROVALVOLA ON-OFF STABILIZZATORE DELANTERO DERECHO (APERTURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (OUVERTURE)
EV - STAB 4 (R)	RIGHT REAR OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETROVALVOLA ON-OFF STABILIZZATORE POSTERIORE DESTRO (CHIUSURA)	ELETROVALVOLA ON-OFF STABILIZZATORE TRASERO DERECHO (CLASURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (FERMETURE)
EV - STAB 4 (F)	RIGHT REAR OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETROVALVOLA ON-OFF STABILIZZATORE POSTERIORE DESTRO (APERTURA)	ELETROVALVOLA ON-OFF STABILIZZATORE TRASERO DERECHO (APERTURA)	ELECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (OUVERTURE)
EV - TR CLOSING	UNDERCARRIAGE WIDENING ON-OFF ELECTRO VALVE (CLOSING)	ELETROVALVOLA ON-OFF ALLARGAMENTO CARRO (CHIUSURA)	ELETROVALVULA ON-OFF ESTENSION DEL CARRITO (CLASURA)	ELECTROVANNE ON-OFF ÉLARGISSEMENT CHENILLARD (FERMETURE)
EV - TR L (R)	LEFT TRACK ON-OFF ELECTRO VALVE (REAR)	ELETROVALVOLA ON-OFF CINGOLATO (INDIETRO)	ELETROVALVOLA ON-OFF CINGOLATO (ATRAS)	ELECTROVANNE ON-OFF CHENILLE GAUCHE (EN ARRIÈRE)
EV - TR L (F)	LEFT TRACK ON-OFF ELECTRO VALVE (FRONT)	ELETROVALVOLA ON-OFF CINGOLATO (AVANT)	ELETROVALVULA ON-OFF CINGOLATO (ADELANTE)	ELECTROVANNE ON-OFF CHENILLE GAUCHE (EN AVANT)
EV - TR OPENING	UNDERCARRIAGE WIDENING ON-OFF ELECTRO VALVE (OPENING)	ELETROVALVOLA ON-OFF ALLARGAMENTO CARRO (APERTURA)	ELETROVALVULA ON-OFF EXTENSION DEL CARRITO (APERTURA)	ELECTROVANNE ON-OFF ÉLARGISSEMENT CHENILLARD (OUVERTURE)
EV - TR R (R) (REAR)	RIGHT TRACK ON-OFF ELECTRO VALVE (INDIETRO)	ELETROVALVOLA ON-OFF CINGOLATO DESTRO (INDIETRO)	ELETROVALVULA ON-OFF CINGOLATO DESTRO (ATRAS)	ELECTROVANNE ON-OFF CHENILLE DROITE (EN ARRIÈRE)
EV - TR R (F) (FRONT)	RIGHT TRACK ON-OFF ELECTRO VALVE (VOLANTE)	ELETROVALVOLA ON-OFF CINGOLATO DESTRO (AVANT)	ELETROVALVULA ON-OFF CINGOLATO DESTRO (ADELANTE)	ELECTROVANNE ON-OFF CHENILLE DROITE (EN AVANT)
F 25 A	25 A FUSE (FLY)	FUSIBLE 25 A (VOLANTE)	FUSIBLE 25 A (VOLANT)	FICHE' MICRO RELAY
F Nº	FUSE NUMBER	NUMERO DEL FUSIBLE	NUMERO DEL FUSIBLE	FICHE' MICRO RELAY

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN	DESCRIPTION
GR SAF ESC	GROUND/SAFETY BYPASS KEY SWITCH	INTERRUTTORE A CHIAVE SICUREZZA PARTE CARRO	ESCLUSIONE INTERRUPTOR DE LLAVE SEGURIDADES PARTE DE TIERRA	EXCLUSION INTERRUPTEUR DE LLAVE PARTIE TERRE
GR STAB LAMP	MACHINE STABILIZED GROUND LAMP	LAMPADA MACCHINA STABILIZZATA A TERRA	LUZ MAQUINA ESTABILIZADA EN TIERRA	LUMIÈRE MACHINE STABILISÉE À TERRE
GR STOP	GROUND STOP BUTTON	INTERRUTTORE DI STOP (GROUND)	INTERRUPTOR DE STOP (EN TIERRA)	INTERRUPTEUR D'ARRÊT (À TERRE)
GR STOP BOX	GROUND STOP BUTTON BOX	SCATOLA INTERRUTTORE DI STOP (A TERRA)	CAJA INTERRUPTOR DE STOP (EN TIERRA)	BOÎTE INTERRUPTEUR D'ARRÊT (À TERRE)
IS	IGNITION SWITCH	INTERRUTTORE A CHIAVE MOTORE	INTERRUPTOR DE LLAVE MOTOR	INTERRUPTEUR A CLEF MOTEUR
KEY AE /MOV	CONTROL POSITION SELECTOR KEY	SELETTORE CONTROLLO POSIZIONE	SELECTOR CONTROL POSITION	SELECTEUR CONTRÔLE POSITION
LAMP STAB 1	FRONT LEFT OUTIGGER LAMP	LAMPADA STABILIZZATORE SINISTRO	ANTERIORE LUZ ESTABILIZADOR DELANTERO IZQUIERDO	LUMIÈRE STABILISATEUR N° 1
LAMP STAB 2	REAR LEFT OUTIGGER LAMP	LAMPADA STABILIZZATORE SINISTRO	POSTERIORE LUZ ESTABILIZADOR TRASERO IZQUIERDO	LUMIÈRE STABILISATEUR N° 2
LAMP STAB 3	FRONT RIGHT OUTIGGER LAMP	LAMPADA STABILIZZATORE DESTRO	ANTERIORE LUZ ESTABILIZADOR DERECHO	LUMIÈRE STABILISATEUR N° 3
LAMP STAB 4	REAR RIGHT OUTIGGER LAMP	LAMPADA STABILIZZATORE DESTRO	POSTERIORE LUZ ESTABILIZADOR TRASERO DERECHO	LUMIÈRE STABILISATEUR N° 4
LEFT - PROP EV	LEFT SIDE PROPORTIONAL ELECTRO VALVE	ELETROVALVOLA PROPORZIONALE	PARTE A ELETROVALVULA PROPORCIONAL	PARTIE A ÉLECTROVANNE PROPORTIONNELLE
LOAD CELL	LOAD CELL SENSOR	SENSORE CELLULA DI CARICO	TIERRA IZQUIERDA	PARTIE GAUCHE
MAIN SWITCH	BATTERY CUTTER	STACCA BATTERIE	SACA BATERIA	COUPE BATTERIE
MICRO JIB	MICRO SWITCH JIB	SENSORE DI POSIZIONE JIB	SENSOR POSICIÓN JIB	CAPTEUR DE POSITION JIB
MICRO RELAY SCHEDULE	MICRO RELAY SCHEDULE	SCHEDA MICRO RELE'	TARJETA MICRO RELE'	FICHE' MICRO RELAY
MODEM	MODEM	MODEM	MODEM	MODEM
MS230V BOX	THERMIC SWITCH BOX	SCATOLA INTERRUTTORE TERMICO	CAJA INTERRUPTOR TERMICO	BOÎTE INTERRUPTEUR THERMIQUE
OIL PRESSURE SENSOR	OIL PRESSURE SENSOR	SENSORE PRESSIONE OLIO MOTORE	SENSOR PRESIÓN ACEITE MOTOR	CAPTEUR PRESSION HUILE MOTEUR
OPTIONAL RC	OPTIONAL REMOTE CONTROL (EMERGENCY GROUND POSITION)	TELECOMANDO OPTIONAL (POSIZIONE DI EMERGENZA A TERRA)	OPTIONAL (POSITION D'URGENCE EN TERRA)	DE TÉLÉCOMMANDÉ COMME ACCESOIRE EN OPTION (POSITION D'URGENCE À TERRE)
PEDAL (optional)	PEDAL	PEDALE	PEDAL	PÉDALE
PHOTO A	PHOTOCELL A	FOTOCELLULA A	FOTOCÉLULA A	CELLULE PHOTOÉLECTRIQUE A
PHOTO B	PHOTOCELL B	FOTOCELLULA B	FOTOCÉLULA B	CELLULE PHOTOÉLECTRIQUE B
PLUG DW	120/230 V SOCKET (DOWN)	CONNETTORE 120/220 VOLT (SOTTO)	ENCHUFE 120/220 VOLT (BAJO)	CONNECTEUR 120/220 VOLT (BAS)
PLUG UP	120/230 VOLT BOARD CONNECTOR (UP)	PLUG CONNETTORE SCHEMA 120/230 VOLT (SOPRA)	ENCHUFE PLACA 120/230 VOLT (ARRIBA)	CONNECTEUR FICHE 120/230 VOLT (HAUT)

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN	DESCRIPTION
PRE HEATING RELE'	PRE HEATING RELE'	RELE' PRE RISCALDO	RELE' PRECALEFACION	RELÉ PRECHAUFFAGE
PRE HEATING SPARKS	PRE HEATING SPARKS	CANDELETTE PRERISCALDAMENTO	BUJIAS PRE CALEFACION	PETITES BOUGIES DE PRECHAUFFAGE
RC	REMOTE CONTROL	TELECOMANDO	TELEMANDO	TÉLÉCOMMANDE
RC STOP	ENGINE STOP SWITCH IN THE REMOTE CONTROL	INTERRUTTORE DI STOP NEL TELECOMANDO	INTERRUPTOR DE STOP EN EL TELEMANDO	INTERRUPTEUR D'ARRÊT DANS LA TÉLÉCOMMANDE
REMOTE CONTROL	REMOTE CONTROL	TELECOMANDO	TELEMANDO	TÉLÉCOMMANDE
REM SELECTOR	REMOTE CONTROL SELECTOR - UP OR DOWN (OPTIONAL)	SELETTORE TELECOMANDO - SOPRA O SOTTO (OPTIONAL)	SELECTOR DEL MANDO - ARRIBA O ABAJO (OPTIONAL)	SÉLECTEUR TÉLÉCOMMANDÉ - DESSU OU DÉSSOUS (COMME OPTION)
RIGHT - PROP EV	RIGHT SIDE PROPORTIONAL ELECTRO VALVE	ELETROVALVOLA PROPORZIONALE TERRA DESTRA	ELECTROVALVULA PROPORCIAL TERRA DERECHA	ÉLECTROVANNE PROPORTIONNELLE PARTIE À TERRE DROITE
ROPES SWITCH	ROPES SWITCH	INTERRUTTORE DI SICUREZZA FUNI	INTERRUPTOR SEGURIDAD CUERDAS	INTERRUPTEUR DE SÉCURITÉ DES CÂBLES
SLEW PROX	ROTATION PROXIMITY SENSOR	SENSORE PROXIMITÀ RALLA	SENSOR PROXIMITY RATCHET	CAPTEUR PROXIMITY CRAPAUDINE
START RELE'	ENGINE START RELE'	RELE' AVVIAMENTO MOTOR	RELE' ARRANQUE MOTOR	RELÉ DÉMARRAGE MOTEUR
STARTER	ELECTRIC ENGINE START	MOTORINO ELETTRICO DI AVVIAMENTO	MOTOR ELECTRICO DE ARRANQUE	MOTEUR ÉLECTRIQUE DE DÉMARRAGE
SW STAB 1	FRONT LEFT OUTIGGER SWITCH	INTERRUTTORE STABILIZZATORE ANTERIORE SINISTRO	INTERRUPTOR ESTABILIZADOR DELANTERO IZQUIERDO	INTERRUPTEUR STABILISATEUR ANTÉRIEUR GAUCHE
SW STAB 2	REAR LEFT OUTIGGER SWITCH	INTERRUTTORE STABILIZZATORE POSTERIORE SINISTRO	INTERRUPTOR ESTABILIZADOR IZQUIERDO	INTERRUPTEUR STABILISATEUR POSTÉRIEUR GAUCHE
SW STAB 3	FRONT RIGHT OUTIGGER SWITCH	INTERRUTTORE STABILIZZATORE ANTERIORE DESTRO	INTERRUPTOR ESTABILIZADOR DERECHO	INTERRUPTEUR STABILISATEUR ANTÉRIEUR DROIT
SW STAB 4	REAR RIGHT OUTIGGER SWITCH	INTERRUTTORE STABILIZZATORE POSTERIORE DESTRO	INTERRUPTOR ESTABILIZADOR DERECHO	INTERRUPTEUR STABILISATEUR POSTÉRIEUR DROIT
TEMPERATURE SENSOR (OPTIONAL)	ENGINE TEMPERATURE SENSOR	SENSORE DI TEMPERATURA MOTORE	SENSOR DE TEMPERATURA MOTOR	CAPTEUR TEMPERATURE MOTEUR
THERMIC ENGINE	THERMIC ENGINE	MOTORE TERMICO	MOTOR TERMICO	MOTEUR
THERMIC START	THERMIC ENGINE START PUSH BUTTON	PULSANTE AVVIAMENTO MOTORE TERMICO	BOTON DE ARRANQUE MOTOR TERMICO	INTERRUPTEUR DE DÉMARRAGE MOTEUR ELECTRIQUE
WARNING BUZZER (OPTIONAL)	WARNING BUZZER	AVVISATORE ACUSTICO	ZUMBADOR	ALARME ACOUTIQUE
WATER TEMPERATURE SENSOR	WATER COOLING TEMPERATURE SENSOR	SENSORE TEMPERATURA ACQUA MOTORE	SENSOR TEMPERATURA AGUA MOTOR	CAPTEUR TEMPERATURE EAU MOTEUR
WIDENING CYLINDER	WIDENING CYLINDER POSITION SENSOR	SENSORE POSIZIONE CILINDRO CARRO	SENSOR POSICION CILINDRO ORUGAS	CAPTEUR POSITION CHENILLES

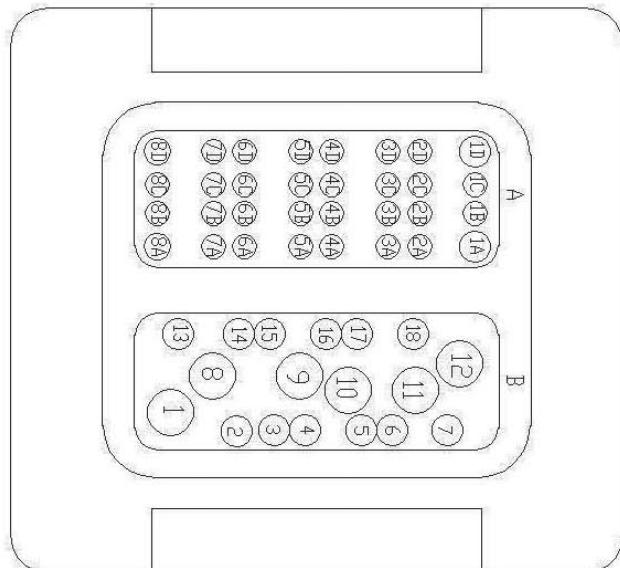
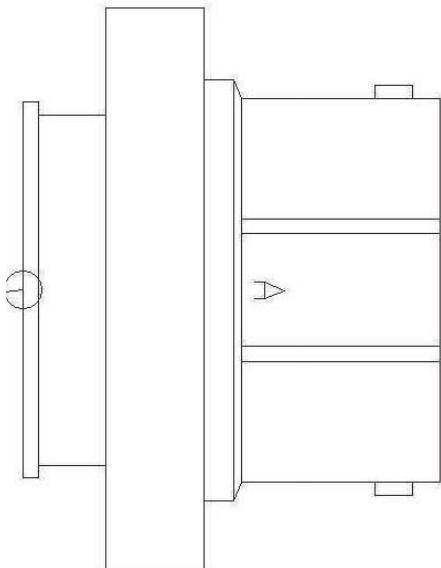
V—CONNECTORS LAYOUT

V—LAYOUT CONNETTORI

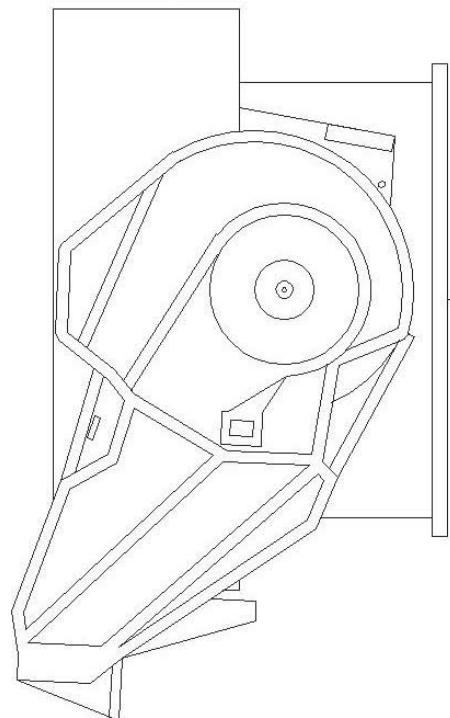
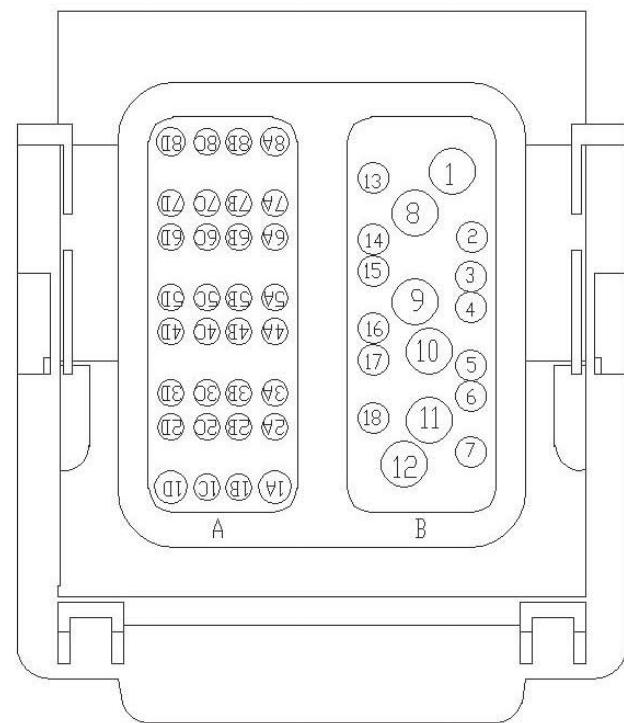
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V—LAYOUT CONNECTEURS

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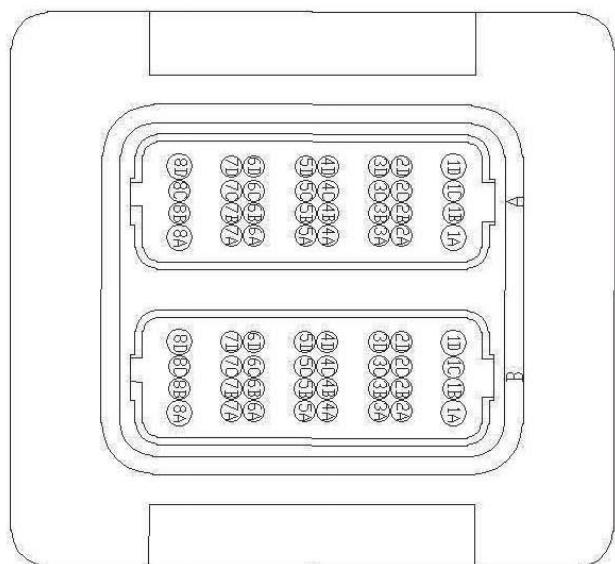
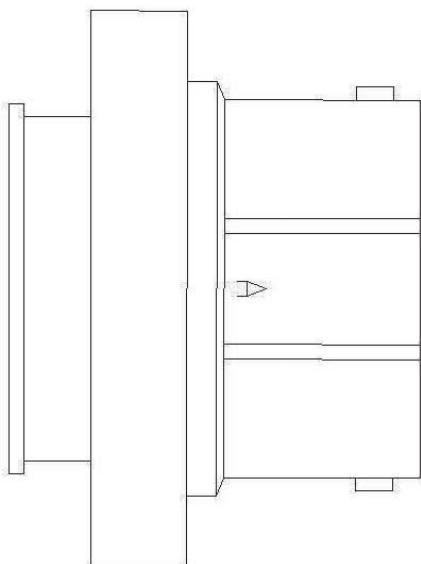


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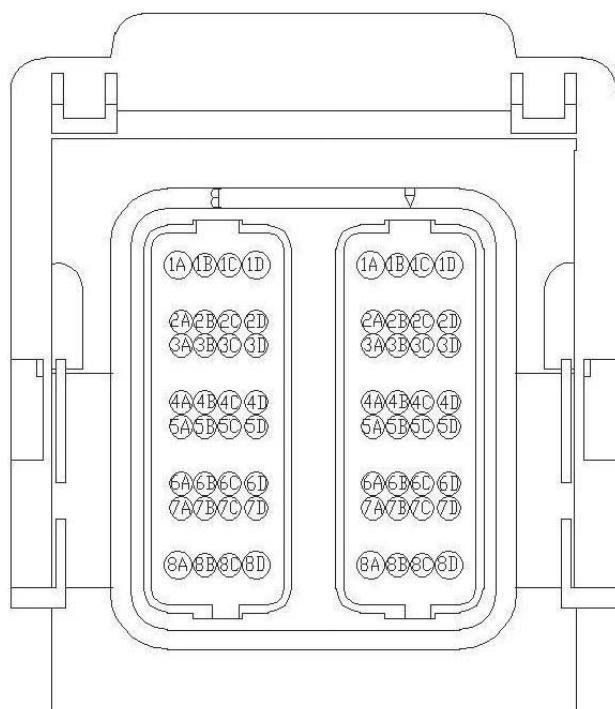
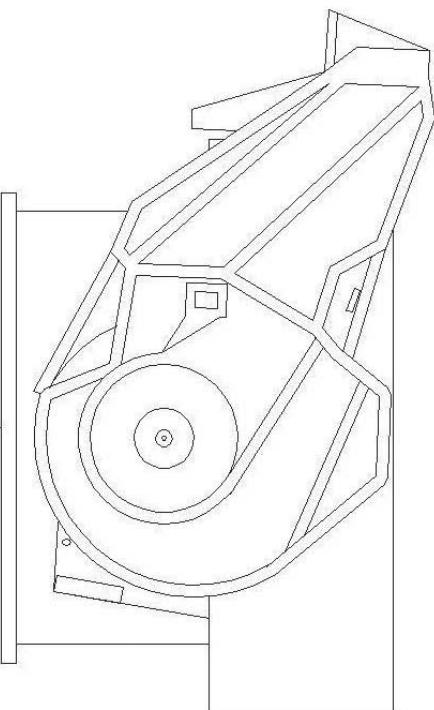


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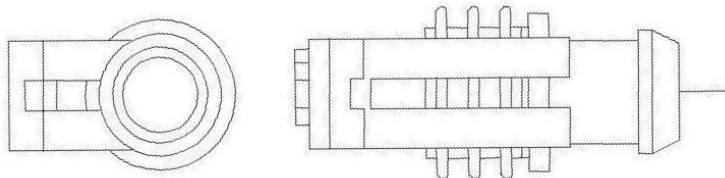


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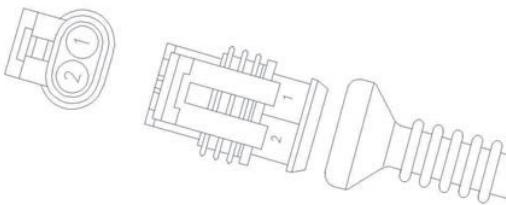


CHASSIS SIDE

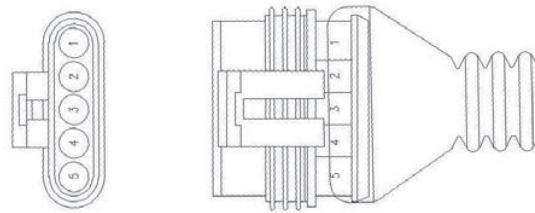
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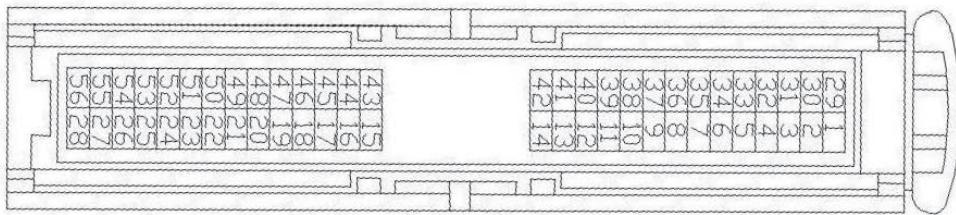
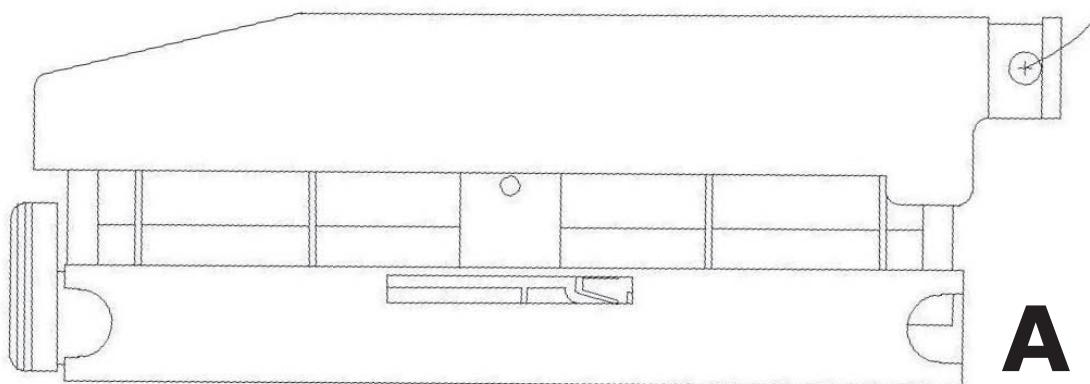
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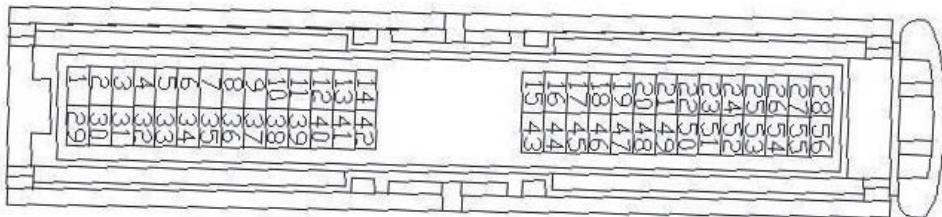
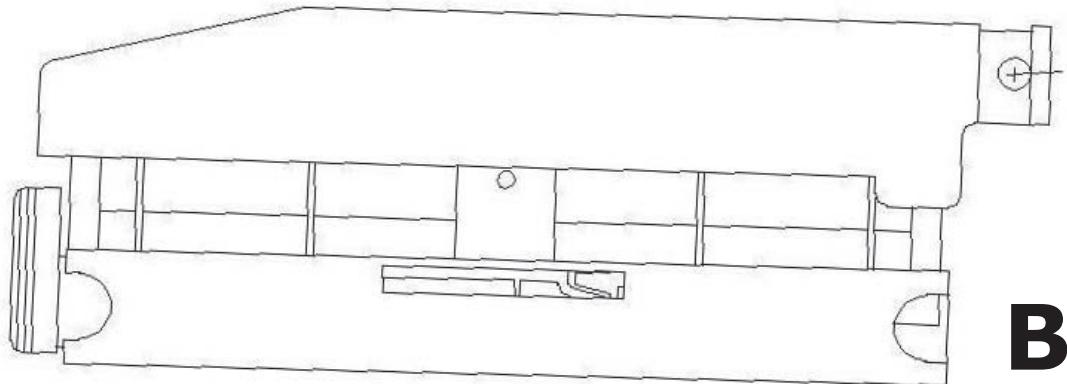
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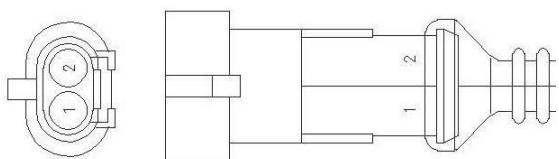
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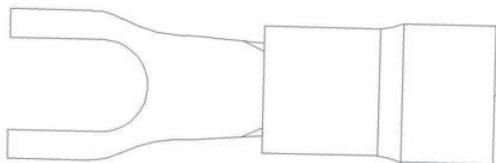
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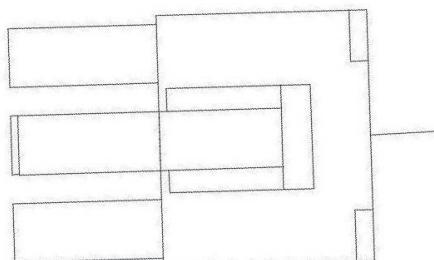
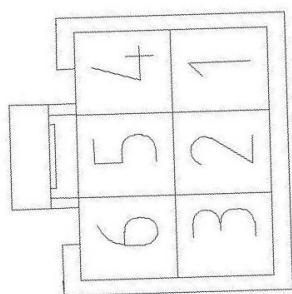
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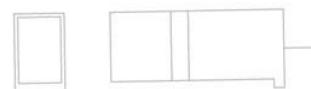
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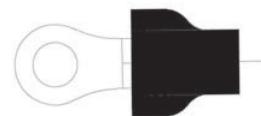
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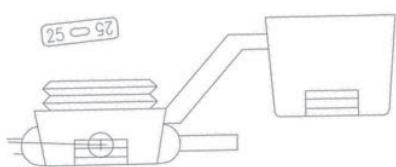
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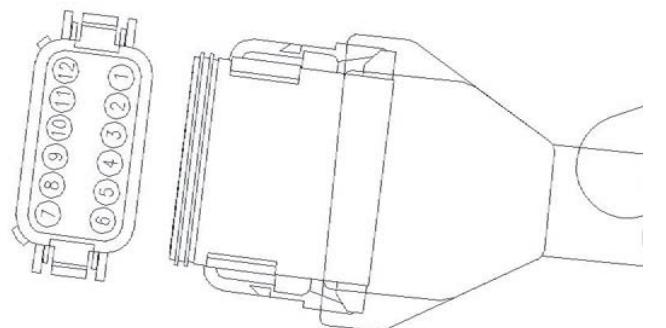
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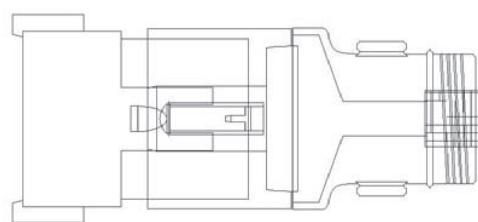
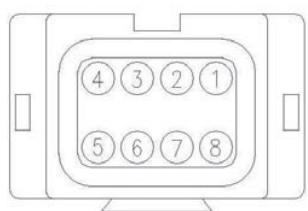
X18



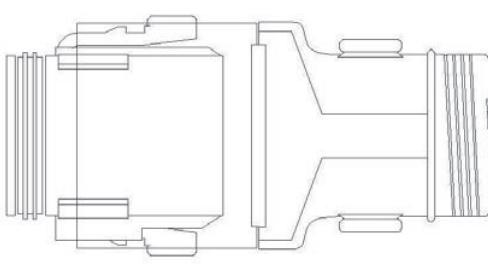
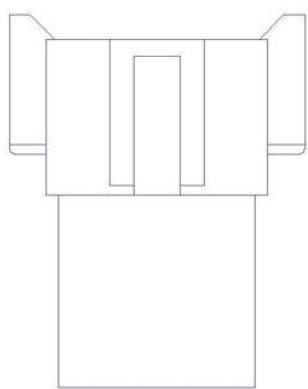
X22



X23

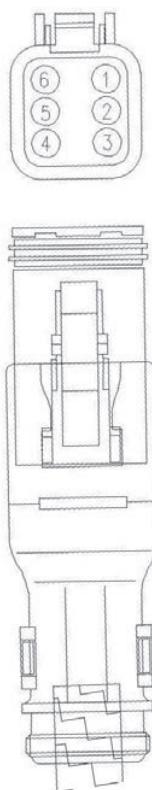
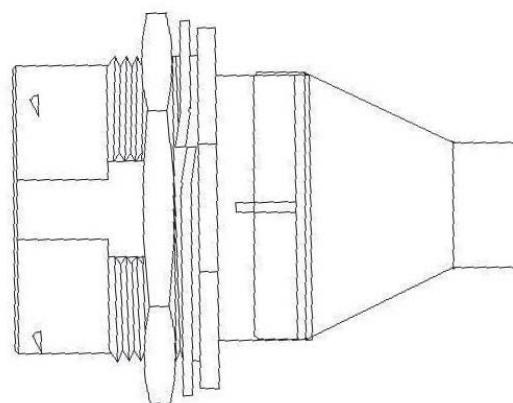
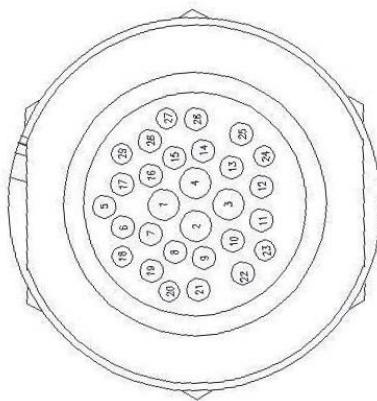


FEMALE

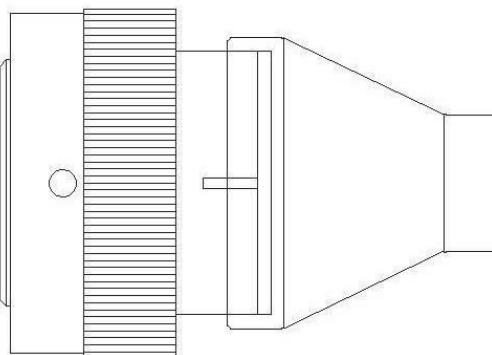
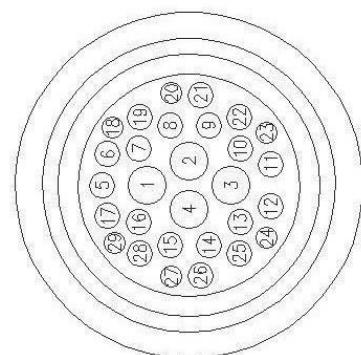


MALE

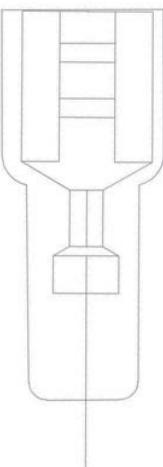
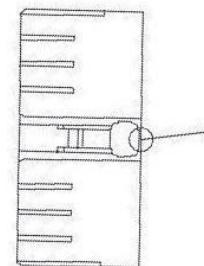
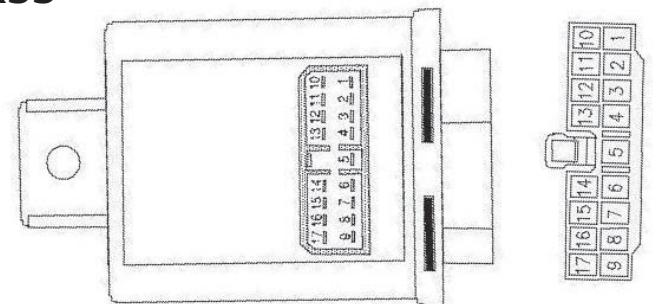
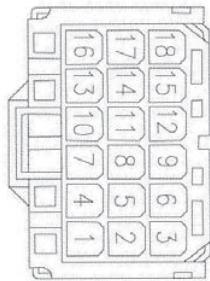
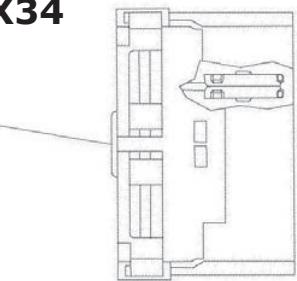
FEMALE

X24**X26**

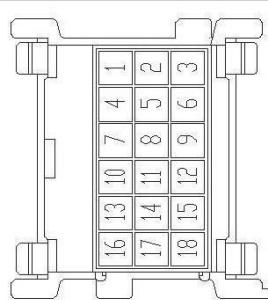
MALE



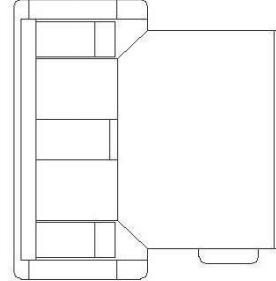
FEMALE

X31**X33****X34**

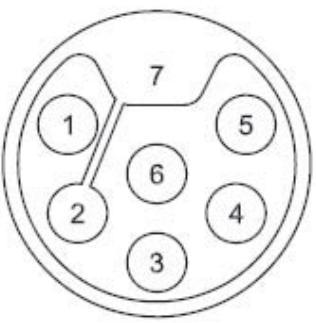
MALE



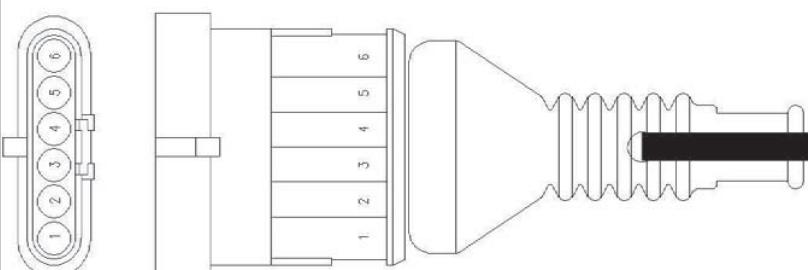
FEMALE



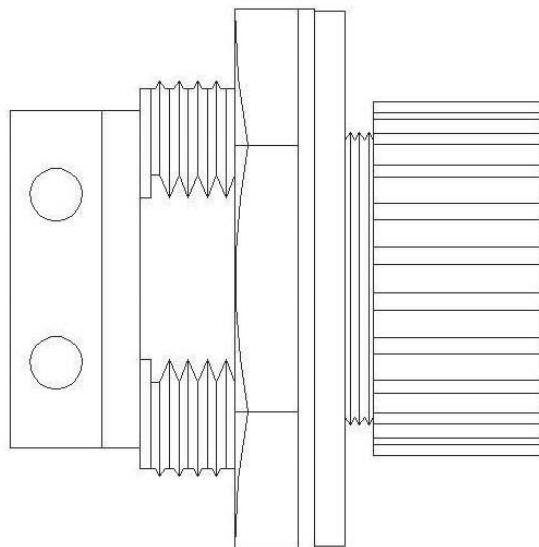
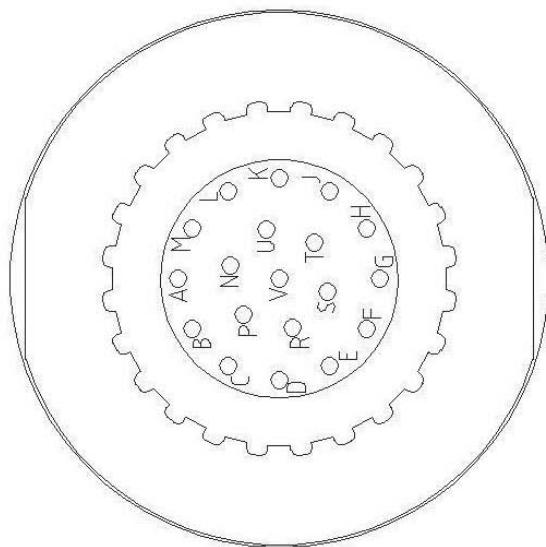
X27;43



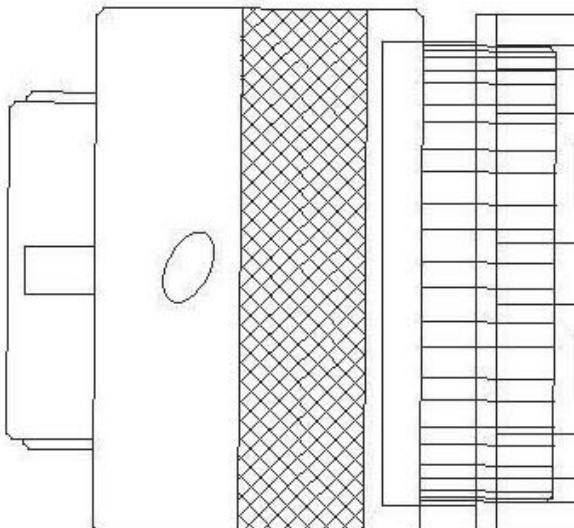
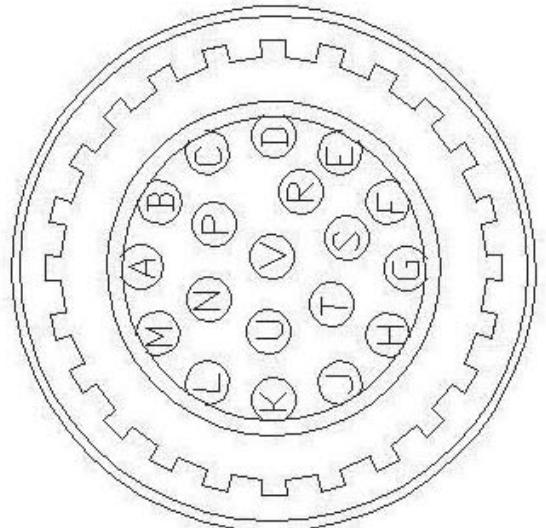
X36;100;150



X37

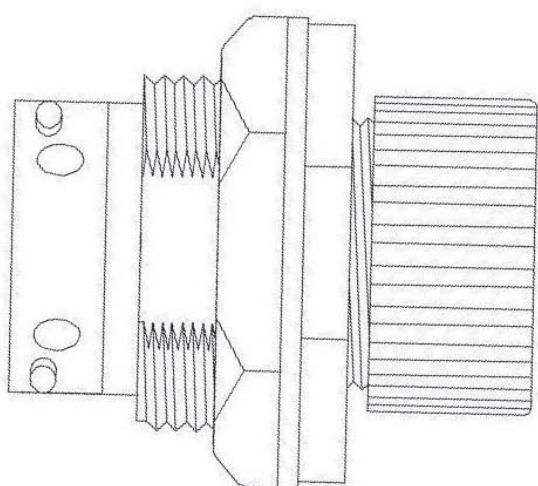
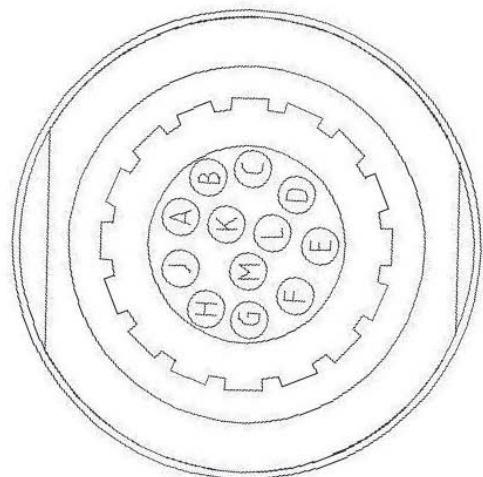


MALE

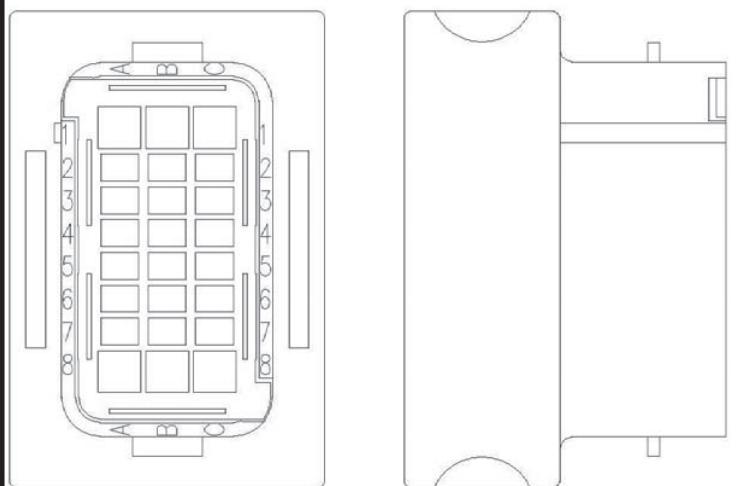


FEMALE

X39



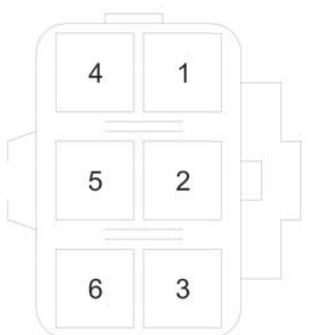
X40



X41



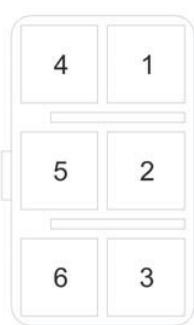
MALE



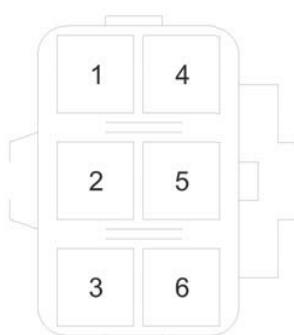
FEMALE

FRONT VIEW

X42;43



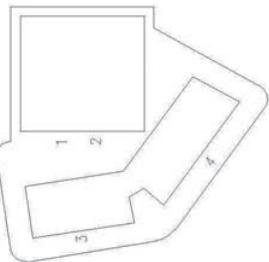
MALE



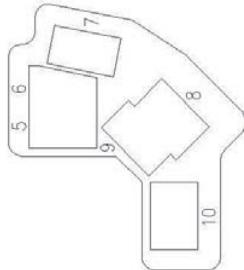
FEMALE

FRONT VIEW

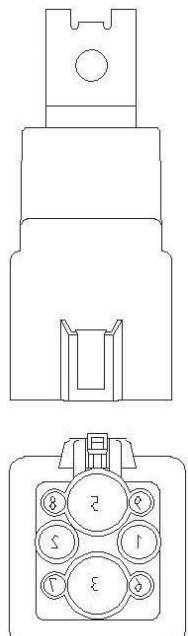
X57.1



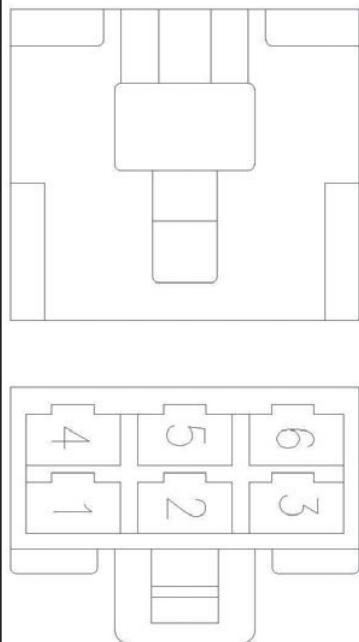
X57.2



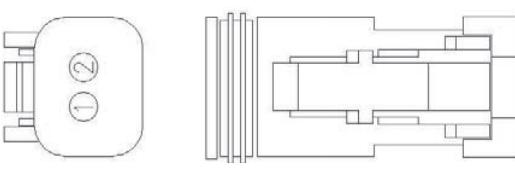
X58;59



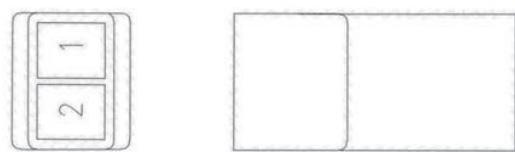
X60



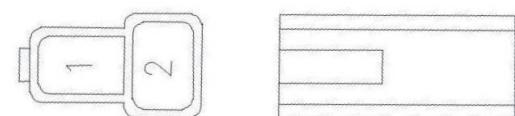
X63;64



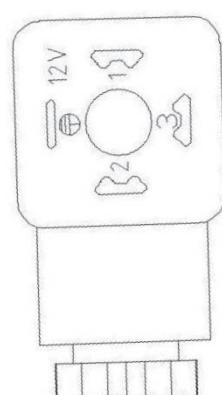
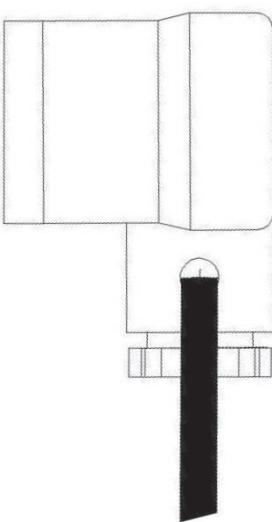
X92



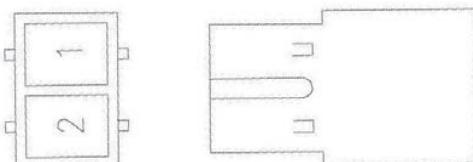
X101



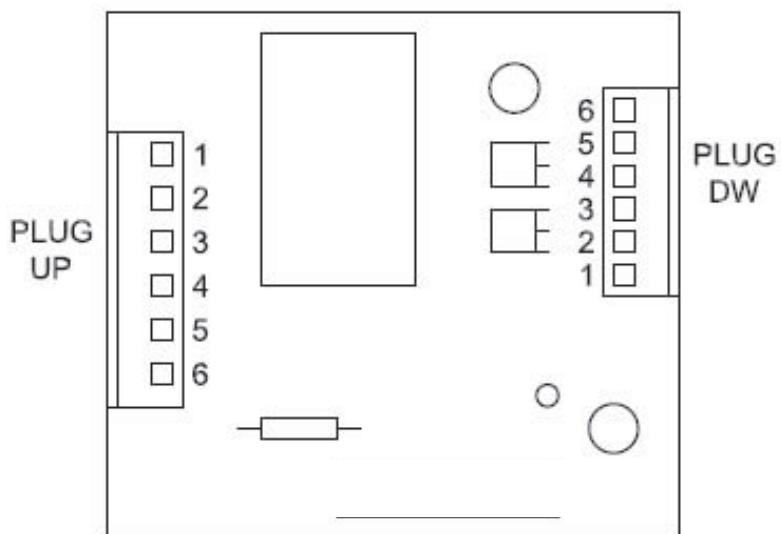
EV COILS



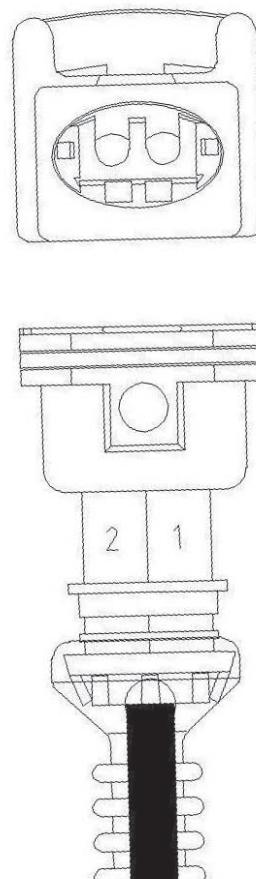
X104;105



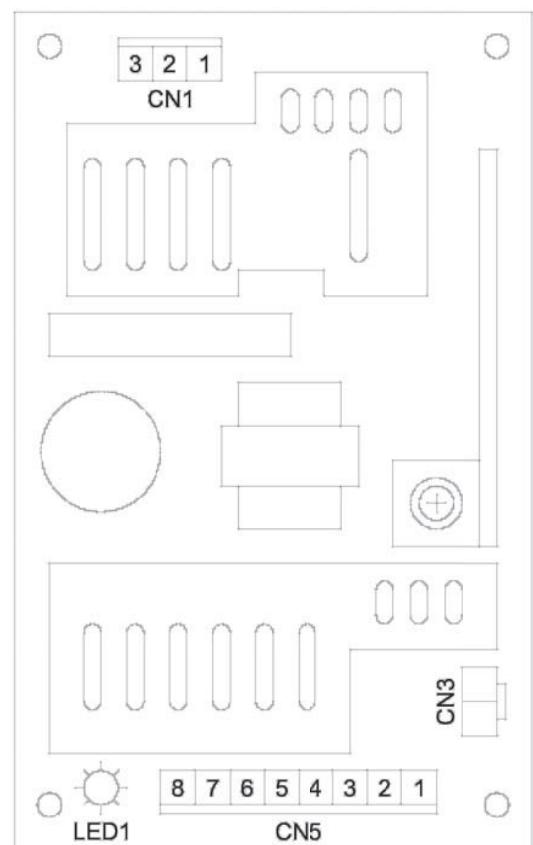
120/230 V BOARD



EV EMERGENCY



ELECTRONIC TRANSFORMER



LITHIUM BATTERY SYSTEM 48 VOLT
2ND GENERATION - (PERFORMANCE)

HINOWA LIGHTLIFT 17.75

DESCRIPTION - DESCRIZIONE - DESCRIPCIONE - DESCRIPTION - DESCRIPTION

PAGE	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN
Y	COMPONENTS LEGEND	LEGENDA COMPONENTI	LEYENDA COMPONENTES
Y1	STARTING	ACCENSIONE	IGNICION
Y2	DC-DC (48V/12V FEEDER)	DC-DC (ALIMENTATORE 48V/12V)	DC-DC (ALIMENTADOR 48V/12V)
Y3	BATTERY CHARGER	CARICABATTERIE	CARGADOR DE BATERIAS
Y4	INVERTER	INVERTER	INVERTER
Y5	BMS AND FANS	BMS E VENTOLE	BMS Y PANTALLAS
Y6	CAN BUS NETWORK	LINEA CAN BUS	LINEA CAN BUS
Y7	LAYOUT COMPONENTS	LAYOUT COMPONENTI	LAYOUT COMPONENTES
Y8	COMPONENTS LOCATION	LOCAZIONE COMPONENTI	COLOCACION COMPONENTES
Y9	LAYOUT BMS	LAYOUT BMS	LAYOUT BMS
Y10	BMS CONNECTORS	CONNETTORI BMS	CONECTORES BMS

PAGE	DESCRIPTION
Y	LEGENDE COMPOSANT
Y1	ALLUMAGE
Y2	DC-DC (CHARGEUR 48V/12V)
Y3	CHARGEUR DE BATTERIE
Y4	INVERTER
Y5	BMS ET HELICES
Y6	LINE CAN BUS
Y7	LAYOUT COMPOSANT
Y8	DISPOSITION COMPOSANT
Y9	LAYOUT BMS
Y10	CONNEXTEURES BMS

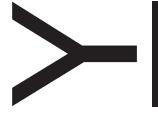
Y - CAN BUS SYSTEM
 Y - SISTEMA CAN BUS
 Y - SISTEMA CAN BUS
 Y - SYSTEME CAN BUS

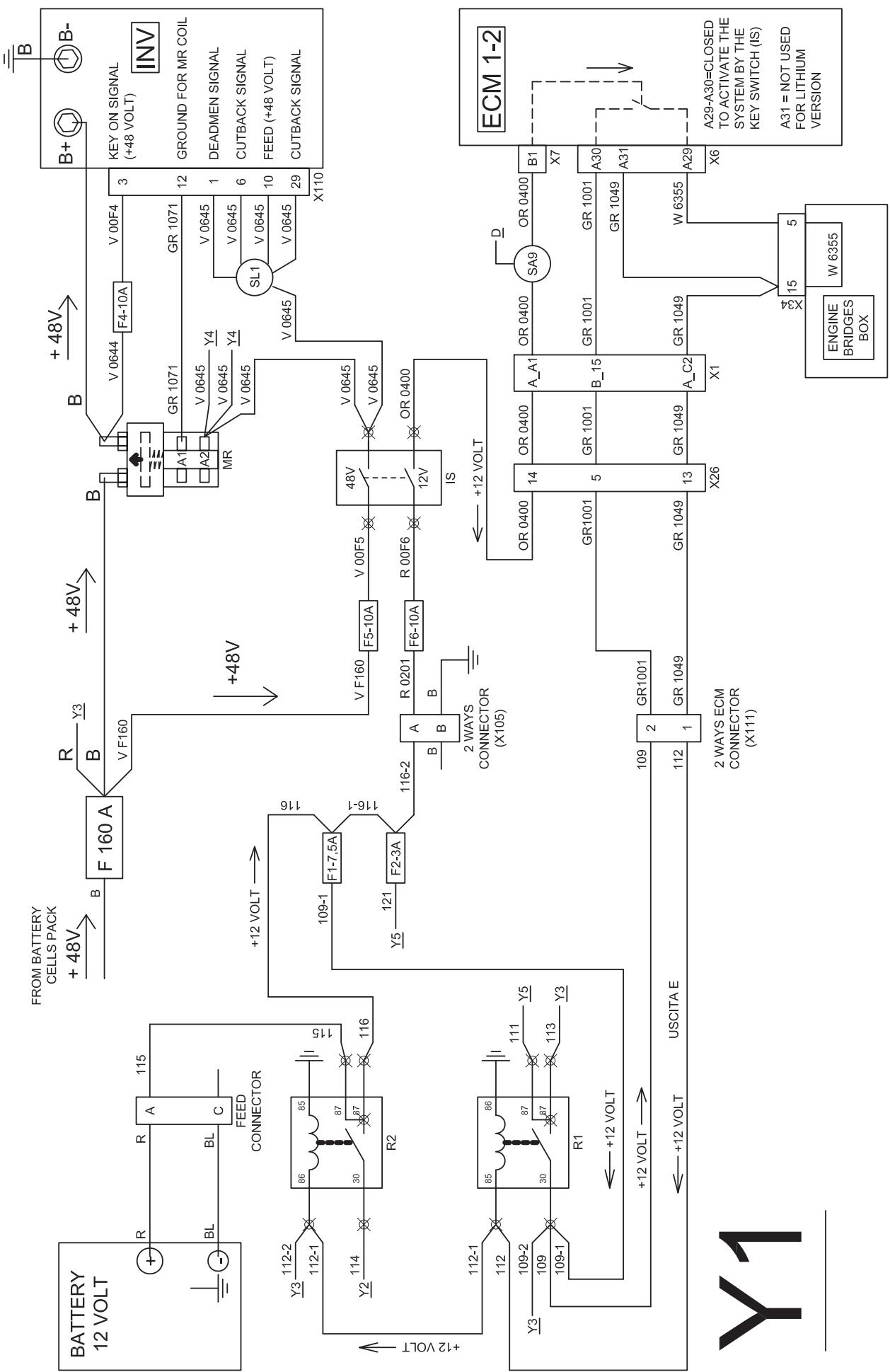
NAME	DESCRIPTION	DESCRIZIONE
AUXILIARY CAN CONNECTOR	CAN CONNECTOR FOR DIAGNOSTIC	CONNETTORE CAN PER DIAGNOSTICO
AUXILIARY CAN PLUG	PLUG CAN FOR DIAGNOSTIC	PRESA CAN PER DIAGNOSI
BATTERY 12 VOLT	BATTERY 12 VOLT	BATERIA 12 VOLT
BC	BATTERY CHARGER	CARICA BATTERIE
BMS	BATTERY MANAGEMENT SYSTEM	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	CAN BUS LINE BRIDGE BOX	SCATOLA PONTE LINEA CAN BUS
CONNECTOR	CONNECTOR	CONNETTORE
INTERNAL CONTACTOR	CONTACTOR IN THE CELLS BOX	CONTATTORE NEL PACCO BATTERIE
DC-DC	48-72V/12V FEEDER	ALIMENTATORE 48-72V/12V
ECM1-2	ELECTRONIC CONTROL MODULE 1-2	SCHEDA ELETTRONICA DI CONTROLLO 1-2
F N°	FUSE	FUSIBILE
FRONT FAN	BATTERY BOX FRONT FANS	VENTOLE FRONTALE VANO BATTERIE
INV	INVERTER	INVERTER
IS	IGNITION KEY SWITCH	INTERRUTTORE A CHIAVE MOTORE
LEM SENSOR	LEM SENSOR	SENSORE LEM
MOTOR	ELECTRIC MOTOR	MOTORE ELETTRICO
MR	MAIN RELÉ'	RELÉ PRINCIPALE
R N°	RELAY	RELÉ
REAR FAN	BATTERY BOX REAR FAN	VENTOLA POSTERIORE VANO BATTERIE

NAME	DESCRIPTION
AUXILIARY CAN CONNECTOR	CONNETTORE CAN AUXILIARIOS
AUXILIARY CAN PLUG	FICHE CAN AUXILLAIRES
BATTERY 12 VOLT	BATERIE 12 VOLT
BC	CHARGEUR DE BATTERIE
BMS	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	BOÎTE PONT LIGNE CAN BUS
CONNECTOR	CONNETTOUR
INTERNAL CONTACTOR	CONTACTEUR INTÉRIEUR PAQUET BATTERIE
DC-DC	CHARGEUR 48-72V/12V
ECM1-2	FICHE ÉLECTRONIQUE DE CONTRÔLE 1-2
F N°	FUSE
FRONT FAN	HELICES PAQUET BATTERIE ANTERIEUR
INV	INVERTER
IS	INTERRUPTEUR A CLÉ MOTEUR
LEM SENSOR	CAPTEUR LEM
MOTOR	MOTEUR ELECTRIQUE
MR	RELAYS PRINCIPAL
R N°	RELAYS DU CHARGEUR DE BATTERIE
REAR FAN	HELICES PAQUET BATTERIE POSTERIEUR

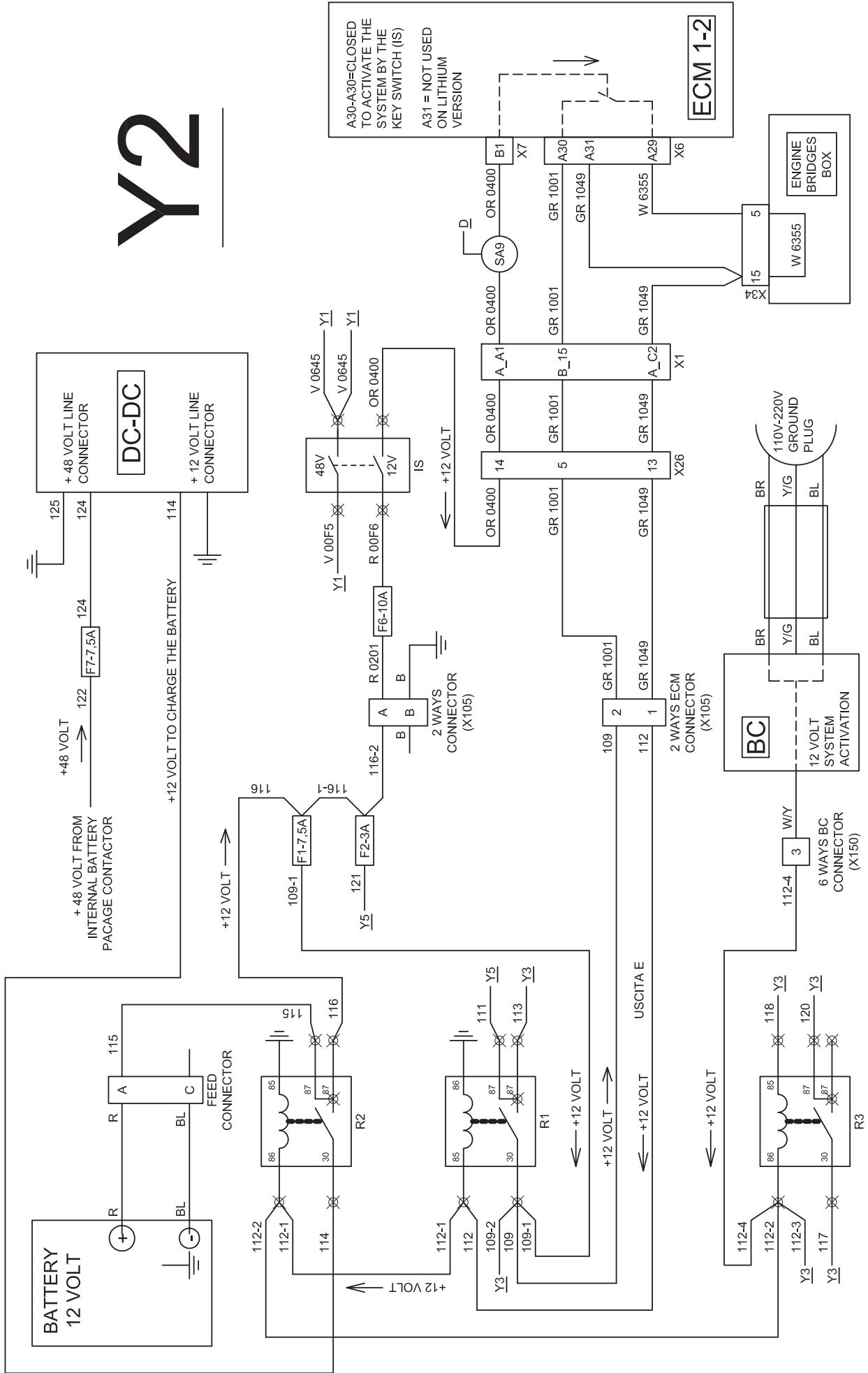
Note to read the wiring diagrams

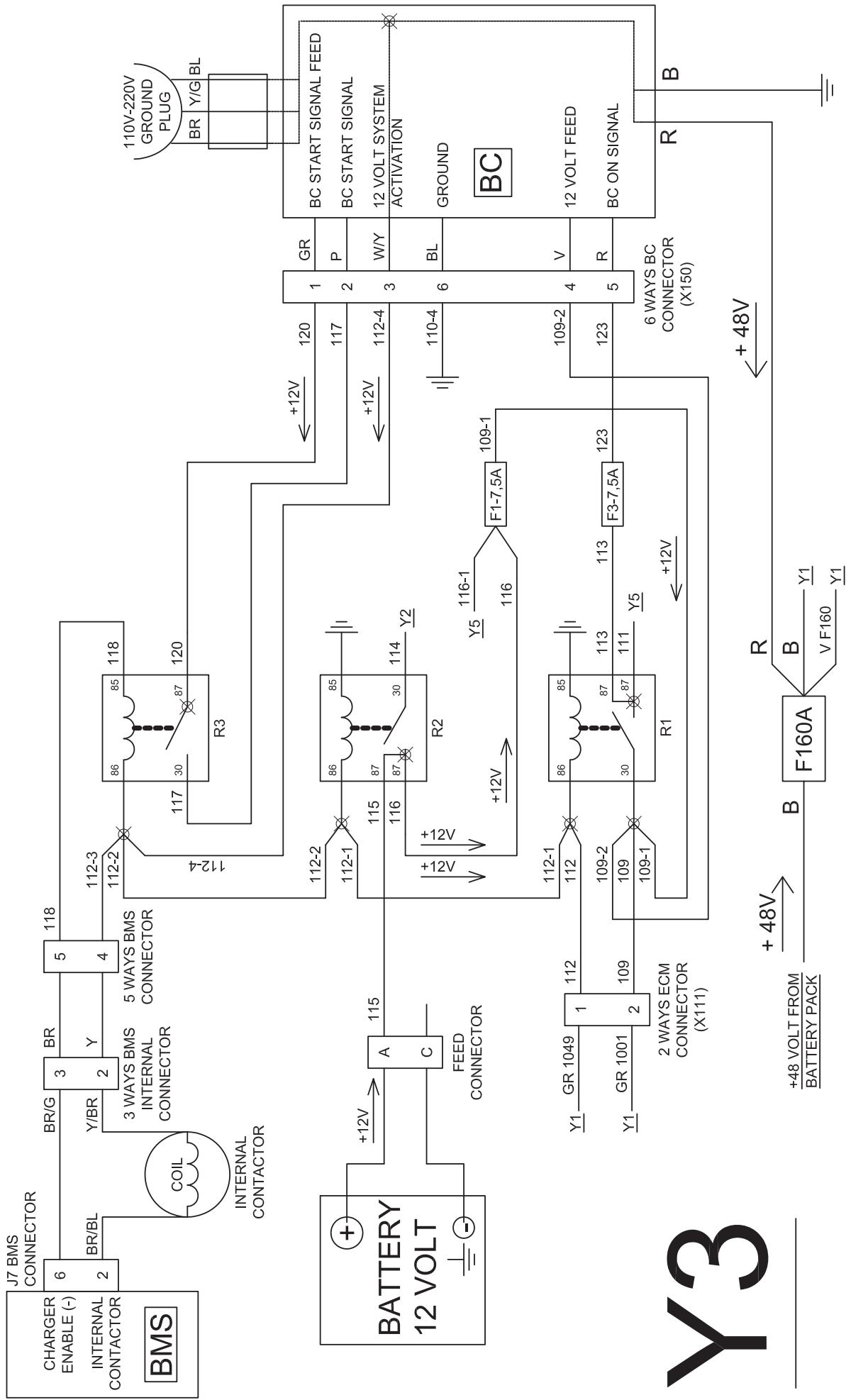
- All the wires are white, except where different indicated
- Most of the wires have an identifying number, indicated in the wiring diagrams
- Close to the identifying number, every wire shows the two terminal points of connexion

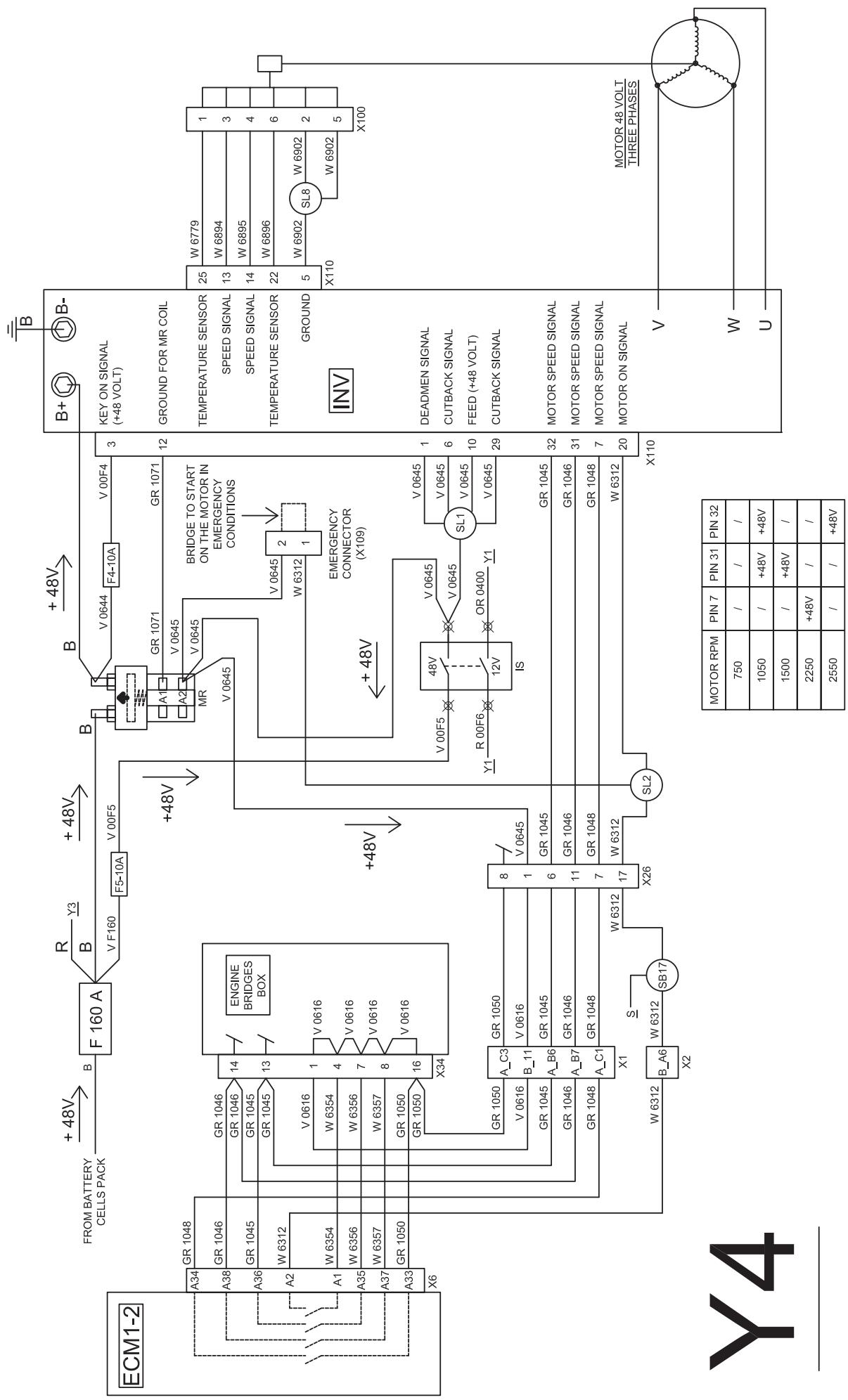


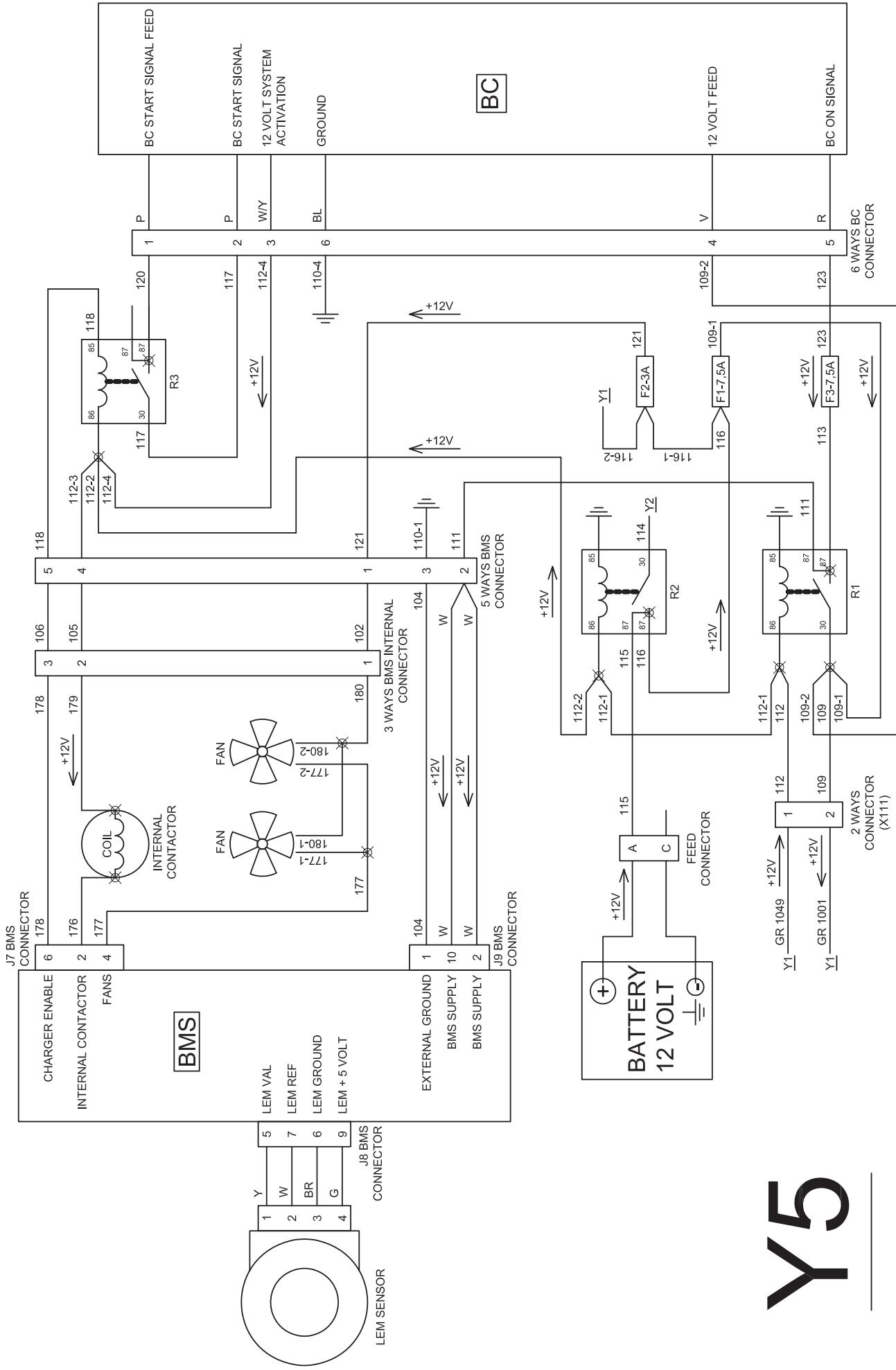


Y2



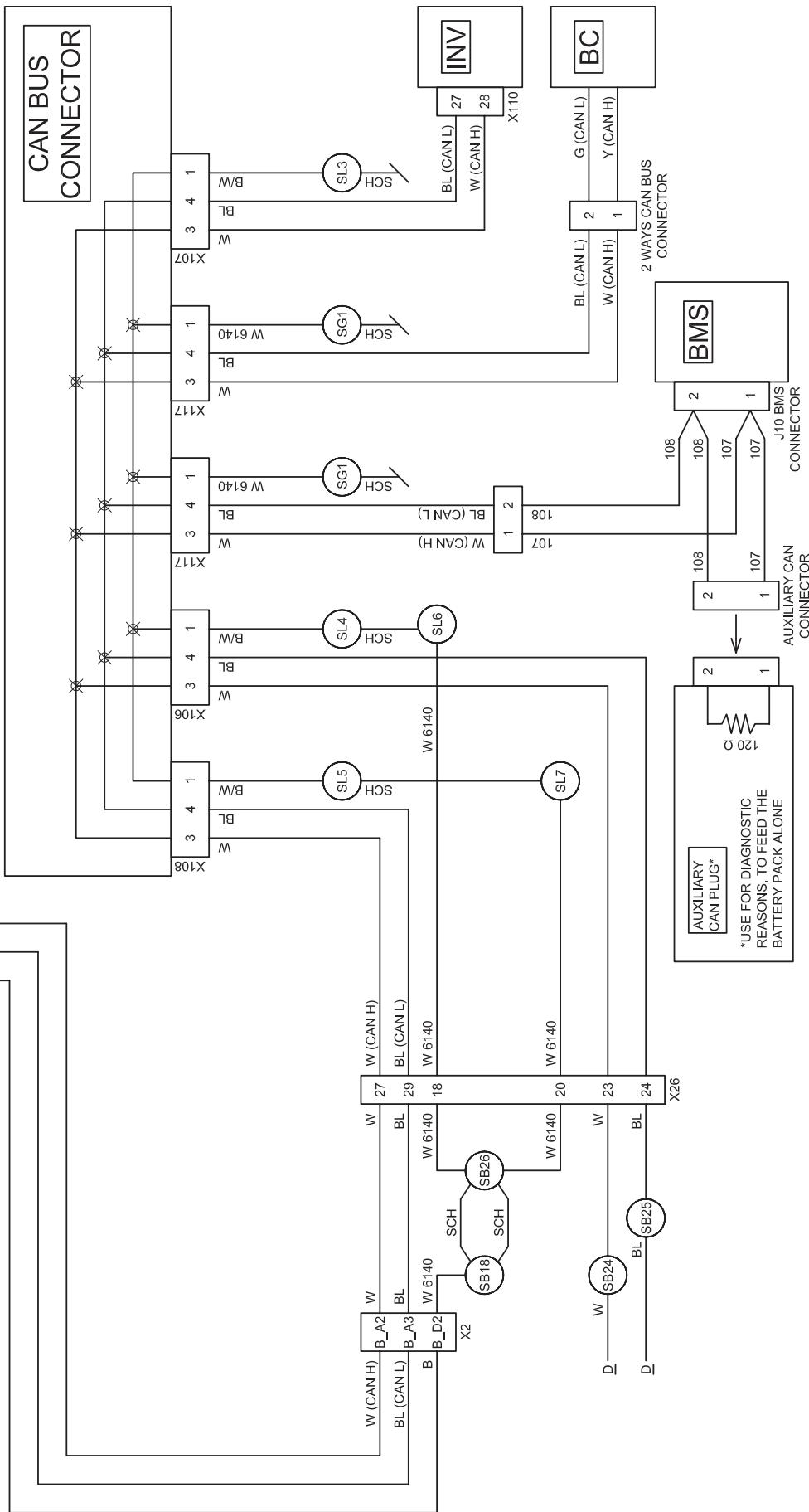
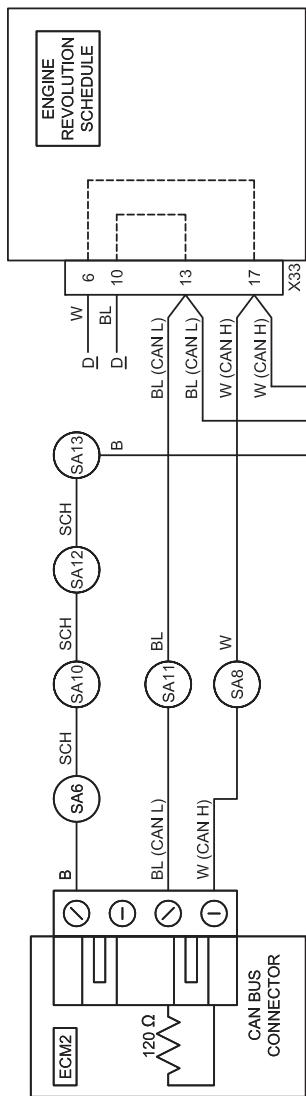




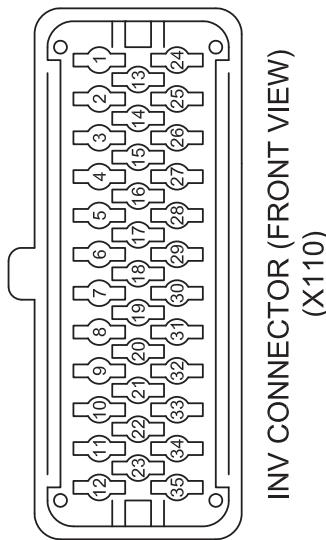


۱۵

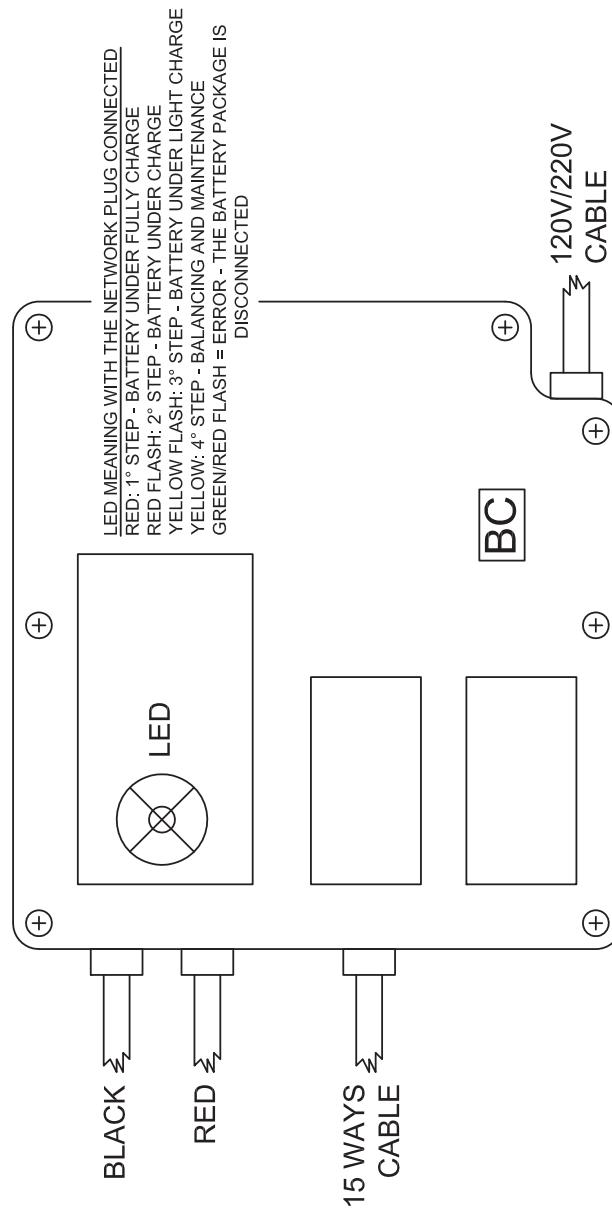
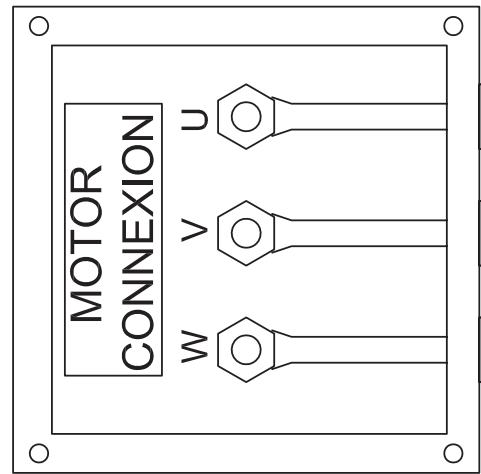
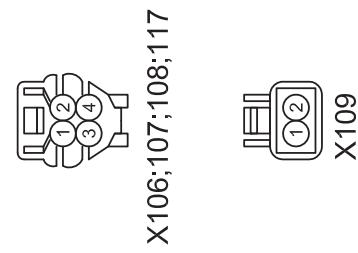
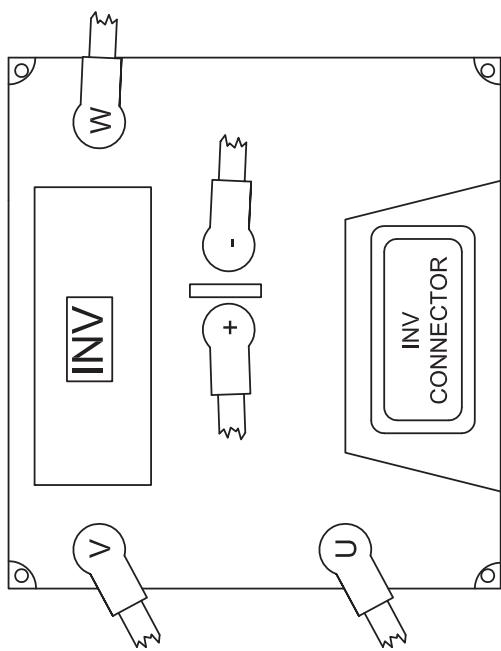
6



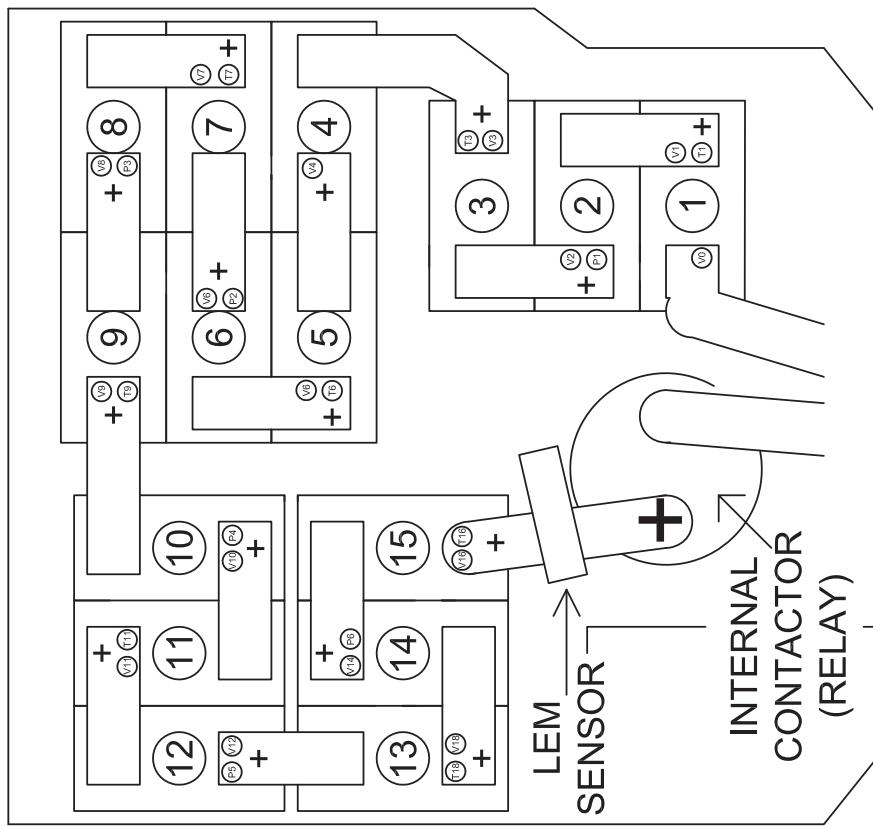
Y7



INV CONNECTOR (FRONT VIEW)
(X110)

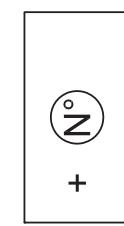
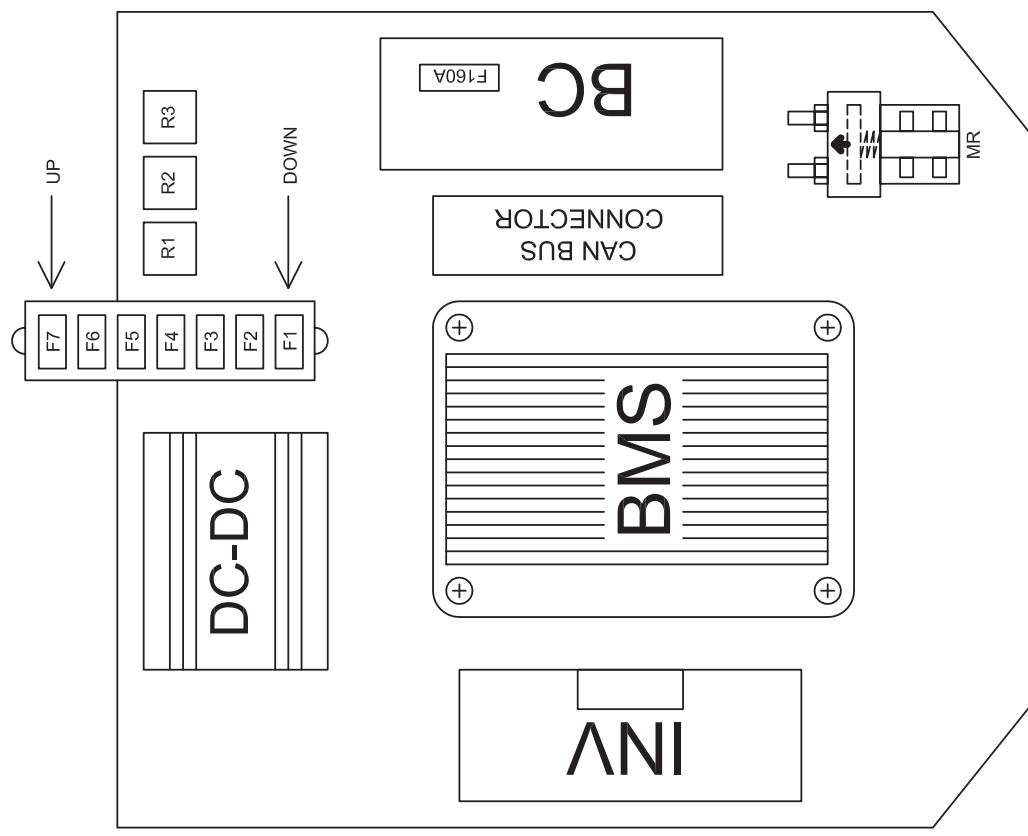


INTERNAL COMPONENTS



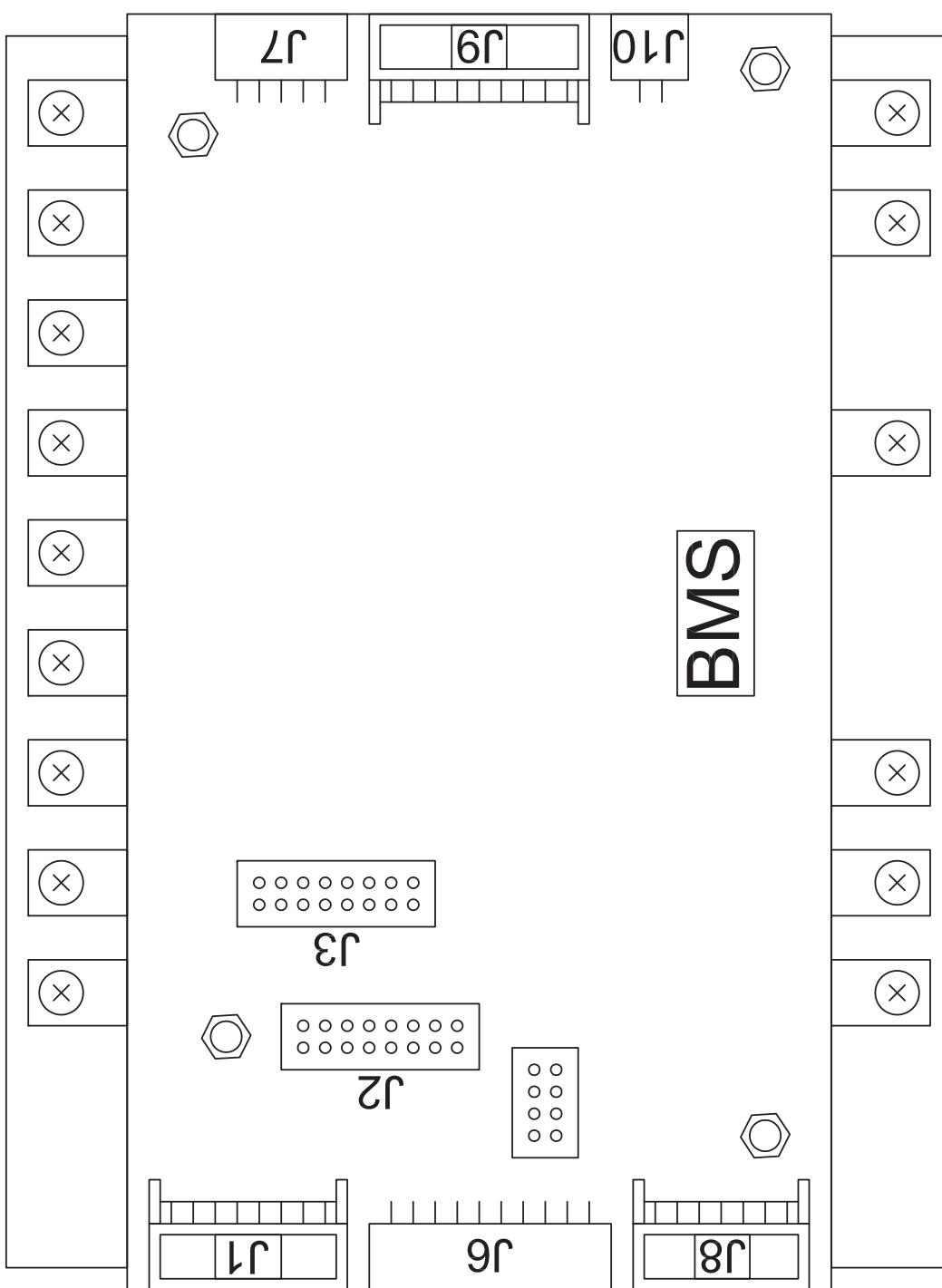
Y8

EXTERNAL COMPONENTS



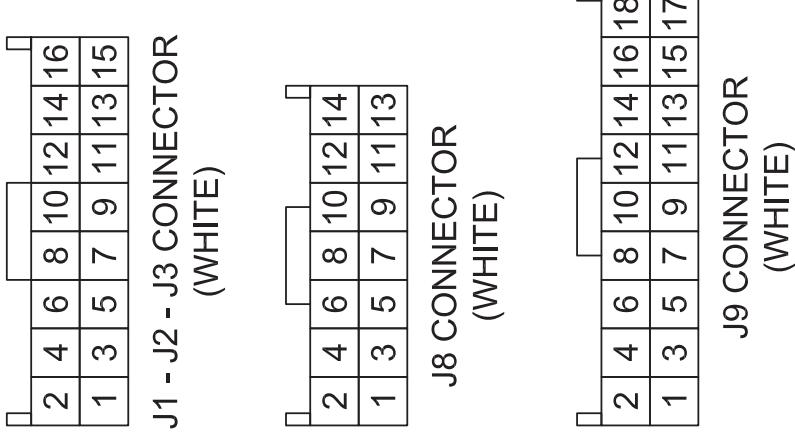
CELL ELEMENT

- +
- CELLS
- CONNEXION
- +
- CELL ELEMENT
- CONNEXION
- TEMPERATURE SENSOR
- PN° TEMPERATURE SWITCH
- VN° VOLT SENSOR



J6 CONNECTOR (BLACK) J7 CONNECTOR (BLACK) J10 CONNECTOR (BLACK)

**NOTE: FRONT VIEW
CONNECTORS SHOWED**



Connector J1 - Temperature Input	
PIN N°	DESCRIPTION
1 126	NTC Cell 1 - (T1)
2 127	NTC Cell 1 + (T1)
3 /	/
4 /	/
5 128	NTC Cell 3 - (T3)
6 129	NTC Cell 3 + (T3)
7 /	/
8 /	/
9 130	NTC Cell 5 - (T5)
10 131	NTC Cell 5 + (T5)
11 132	NTC HS 1 - (T6)
12 133	NTC HS 1 + (T6)
13 134	NTC Prot CH 1 - (P1)
14 135	NTC Prot CH 1 + (P1)
15 136	NTC Prot CH 2 - (P2)
16 137	NTC Prot CH 2 + (P2)

Note: NTC Cell N° are temperature sensors. They are located in the cell number indicated, and they measure the temperature continuously
 NTC Prot CH N° are temperature switches (ON/OFF) for protection reasons. They are located in the cell number indicated, and they close the line only when the temperature exceeds 70 °C
 NTC HS N° are temperature sensors in the cooler
 Brackets show the position on page Y8 (Internal Components)

Connector J2 - Temperature Input	
PIN N°	DESCRIPTION
1 138	NTC Cell 7 - (T7)
2 139	NTC Cell 7 + (T7)
3 /	/
4 /	/
5 140	NTC Cell 9 - (T9)
6 141	NTC Cell 9 + (T9)
7 142	NTC HS 2 - (T10)
8 143	NTC HS 2 + (T10)
9 /	/
10 /	/
11 144	NTC HS 11 - (T11)
12 145	NTC HS 11 + (T11)
13 146	NTC Prot CH 3 - (P3)
14 147	NTC Prot CH 3 + (P3)
15 148	NTC Prot CH 4 - (P4)
16 149	NTC Prot CH 4 + (P4)

Note: NTC Cell N° are temperature sensors. They are located in the cell number indicated, and they measure the temperature continuously
 NTC Prot CH N° are temperature switches (ON/OFF) for protection reasons. They are located in the cell number indicated, and they close the line only when the temperature exceeds 70 °C
 Brackets show the position on page Y8 (Internal Components)

Connector J3 - Temperature Input	
PIN N°	DESCRIPTION
1 /	/
2 /	/
3 150	NTC Cell 13 - (T13)
4 151	NTC Cell 13 + (T13)
5 /	/
6 /	/
7 /	/
8 /	/
9 /	/
10 /	/
11 152	NTC HS 15 - (T15)
12 153	NTC HS 15 + (T15)
13 154	NTC Prot CH 5 - (P5)
14 155	NTC Prot CH 5 + (P5)
15 156	NTC Prot CH 6 - (P6)
16 157	NTC Prot CH 6 + (P6)
17 /	/
18 175	Volt Cell 14 (14)
19 173	Volt Cell 15 (15)
20 /	/

Note: Cells 10 and 14 have double signal

Connector J8 - Current Sensor	
PIN N°	DESCRIPTION
1 /	/
2 176	Internal Contactor
3 /	/
4 177	Fans
5 /	/
6 178	Charger Enable
7 /	/
8 /	/
9 G	Lem + 5 Volt
10 /	/
11 /	/
12 /	/
13 /	/
14 /	/
15 /	/
16 /	/
17 /	/
18 /	/

Connector J6 - Voltage Input	
PIN N°	DESCRIPTION
1 158	GND (V0)
2 159	Volt Cell 1 (V1)
3 160	Volt Cell 2 (V2)
4 161	Volt Cell 3 (V3)
5 162	Volt Cell 4 (V4)
6 163	Volt Cell 5 (V5)
7 164	Volt Cell 6 (V6)
8 165	Volt Cell 7 (V7)
9 166	Volt Cell 8 (V8)
10 167	Volt Cell 9 (V9)
11 168	Volt Cell 10 (V10)
12 169	Volt Cell 11 (V10)
13 170	Volt Cell 11 (V11)
14 171	Volt Cell 12 (V12)
15 172	Volt Cell 13 (V13)
16 174	Volt Cell 14 (V14)
17 /	/
18 175	Volt Cell 14 (14)
19 173	Volt Cell 15 (15)
20 /	/

Connector J9 - Supply	
PIN N°	DESCRIPTION
1 104	External GND
2 W	BMS Supply
3 /	/
4 /	/
5 Y	Lem Val
6 BR	Lem GND
7 W	Lem Ref
8 /	/
9 G	Lem + 5 Volt
10 W	BMS Supply
11 /	/
12 /	/
13 /	/
14 /	/
15 /	/
16 /	/
17 /	/
18 /	/

Y10

LITHIUM BATTERY SYSTEM 72 VOLT HINOWA LIGHTLIFT 20.10
2ND GENERATION - (PERFORMANCE)

DESCRIPTION - DESCRIZIONE - DESCRIPCION - DESCRIPTION

PAGE	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN
Z	COMPONENTS LEGEND	LEGENDA COMPONENTI	LEYENDA COMPONENTES
Z1	STARTING	ACCENSIONE	IGNICION
Z2	DC-DC (72V/12V FEEDER)	DC-DC (ALIMENTATORE 72V/12V)	DC-DC (ALIMENTADOR 72V/12V)
Z3	BATTERY CHARGER	CARICABATTERIE	CARGADOR DE BATERIAS
Z4	INVERTER	INVERTER	INVERTER
Z5	BMS AND FANS	BMS E VENTOLE	BMS Y PANTALLAS
Z6	CAN BUS NETWORK	LINEA CAN BUS	LINEA CAN BUS
Z7	LAYOUT COMPONENTS	LAYOUT COMPONENTI	LAYOUT COMPONENTES
Z8	COMPONENTS LOCATION	LOCAZIONE COMPONENTI	COLOCACION COMPONENTES
Z9	LAYOUT BMS	LAYOUT BMS	LAYOUT BMS
Z10	BMS CONNECTORS	CONNETTORI BMS	CONECTORES BMS

PAGE	DESCRIPTION
Z	LEGENDE COMPOSANT
Z1	ALLUMAGE
Z2	DC-DC (CHARGEUR 72V/12V)
Z3	CHARGEUR DE BATTERIE
Z4	INVERTER
Z5	BMS ET HELICES
Z6	LINE CAN BUS
Z7	LAYOUT COMPOSANT
Z8	DISPOSITION COMPOSANT
Z9	LAYOUT BMS
Z10	CONNEXTEURES BMS

Z - CAN BUS SYSTEM
 Z - SISTEMA CAN BUS
 Z - SISTEMA CAN BUS
 Z - SYSTÈME CAN BUS

NAME	DESCRIPTION	DESCRIZIONE
AUXILIARY CAN CONNECTOR	CAN CONNECTOR FOR DIAGNOSTIC	CONNETTORE CAN PER DIAGNOSI
AUXILIARY CAN PLUG	PLUG CAN FOR DIAGNOSTIC	PRESA CAN PER DIAGNOSI
BATTERY 12 VOLT	BATTERY 12 VOLT	BATERIA 12 VOLT
BC	BATTERY CHARGER	CARICABATTERIE
BMS	BATTERY MANAGEMENT SYSTEM	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	CAN BUS LINE BRIDGE BOX	SCATOLA PONTE LINEA CAN BUS
CONNECTOR	CONNECTOR	CONNETTORE
INTERNAL CONTACTOR	CONTACTOR IN THE CELLS BOX	CONTACTORE NEL PACCO BATTERIE
DC-DC	48-72V/12V FEEDER	ALIMENTATORE 48-72V/12V
ECM1-2	ELECTRONIC CONTROL MODULE 1-2	SCHEDA ELETTRRONICA DI CONTROLLO 1-2
F N°	FUSE	FUSIBILE
FRONT FAN	BATTERY BOX FRONT FANS	VENTOLE FRONTALI VANO BATTERIE
INV	INVERTER	INVERTER
IS	IGNITION KEY SWITCH	INTERRUTTORE A CHIAVE MOTORE
LEM SENSOR	LEM SENSOR	SENSORE LEM
MOTOR	ELECTRIC MOTOR	MOTORE ELETTRICO
MR	MAIN RELÉ'	RELÉ PRINCIPALE
R N°	RELAY	RELÉ
REAR FAN	BATTERY BOX REAR FAN	VENTOLA POSTERIORE VANO BATTERIE

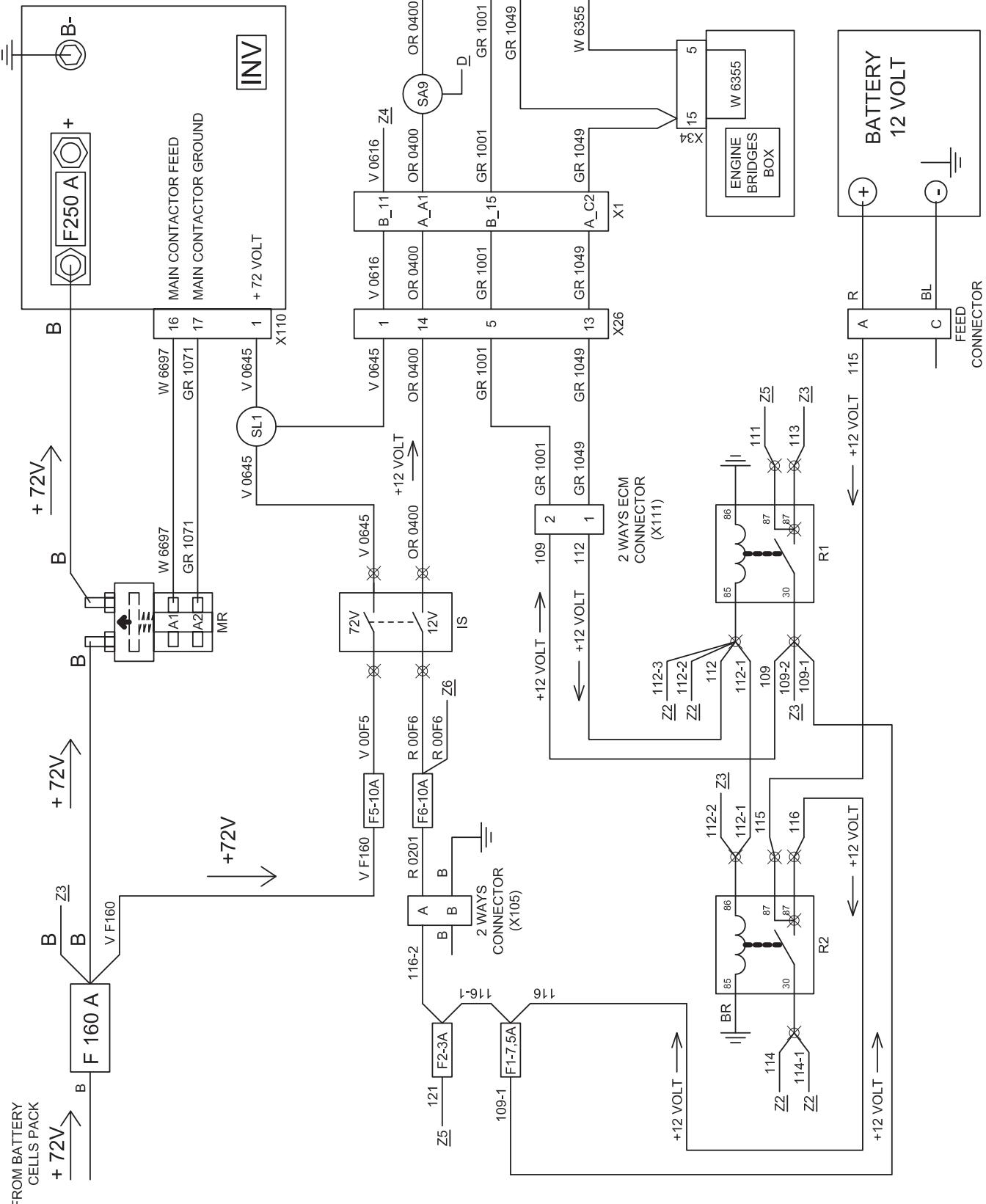
NAME	DESCRIPTION
AUXILIARY CAN CONNECTOR	CONNETTORE CAN AUXILIARIOS
AUXILIARY CAN PLUG	FICHE CAN AUXILIAIRES
BATTERY 12 VOLT	BATERIA 12 VOLT
BC	CHARGEUR DE BATTERIE
BMS	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	BOÎTE PONT LIGNE CAN BUS
CONNECTOR	CONNETTOUR
INTERNAL CONTACTOR	CONTACTEUR INTÉRIEUR PAQUET BATTERIE
DC-DC	CHARGEUR 48-72V/12V
ECM1-2	FICHE ÉLECTRONIQUE DE CONTRÔLE 1-2
F N°	FUSE
FRONT FAN	HELICES PAQUET BATTERIE ANTERIEUR
INV	INVERTER
IS	INTERRUPTEUR A CLÉ MOTEUR
LEM SENSOR	CAPTEUR LEM
MOTOR	MOTEUR ÉLECTRIQUE
MR	RELAYS PRINCIPAL
R N°	RELAYS DU CHARGEUR DE BATTERIE
REAR FAN	HELICES PAQUET BATTERIE POSTERIEUR

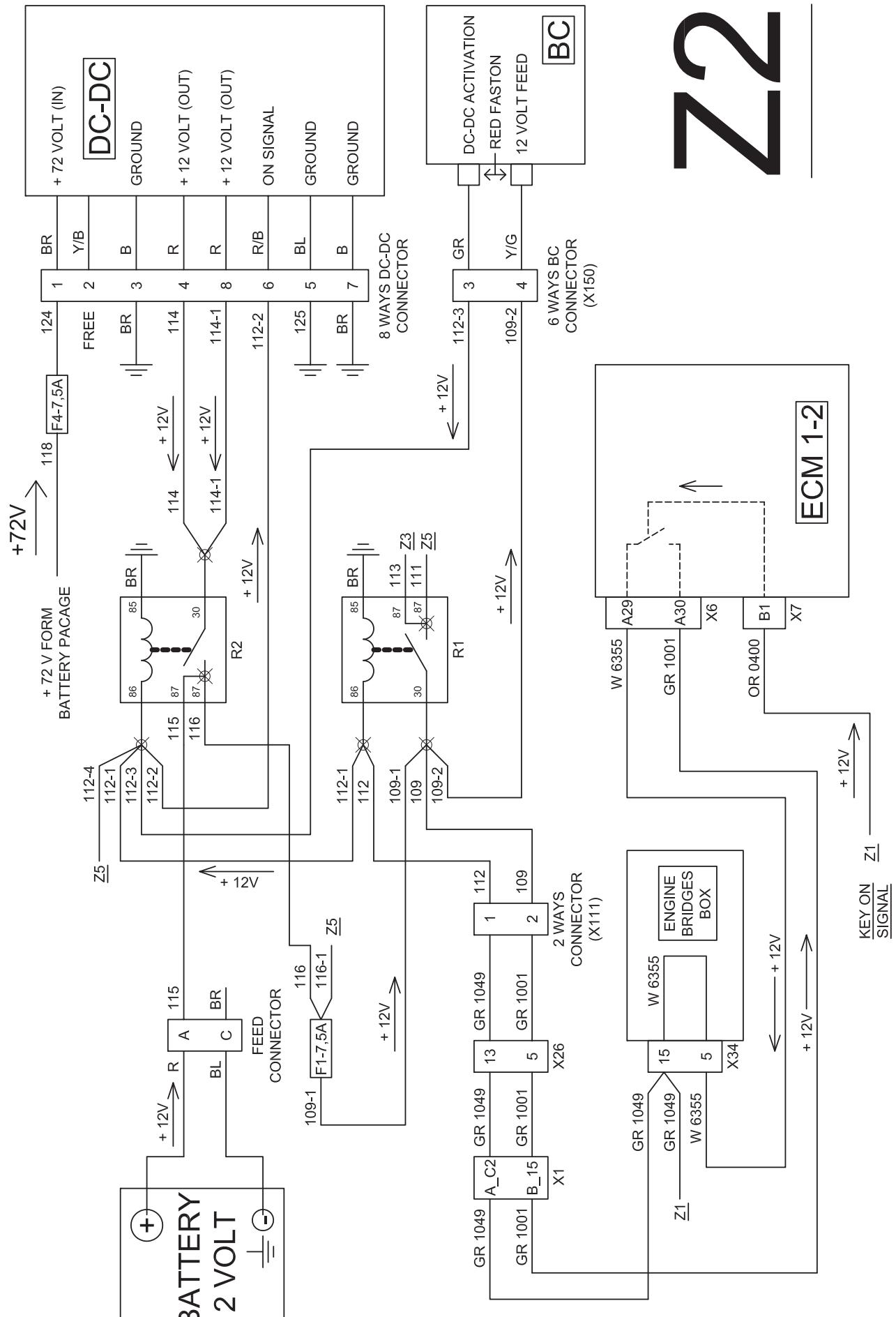
Note to read the wiring diagrams

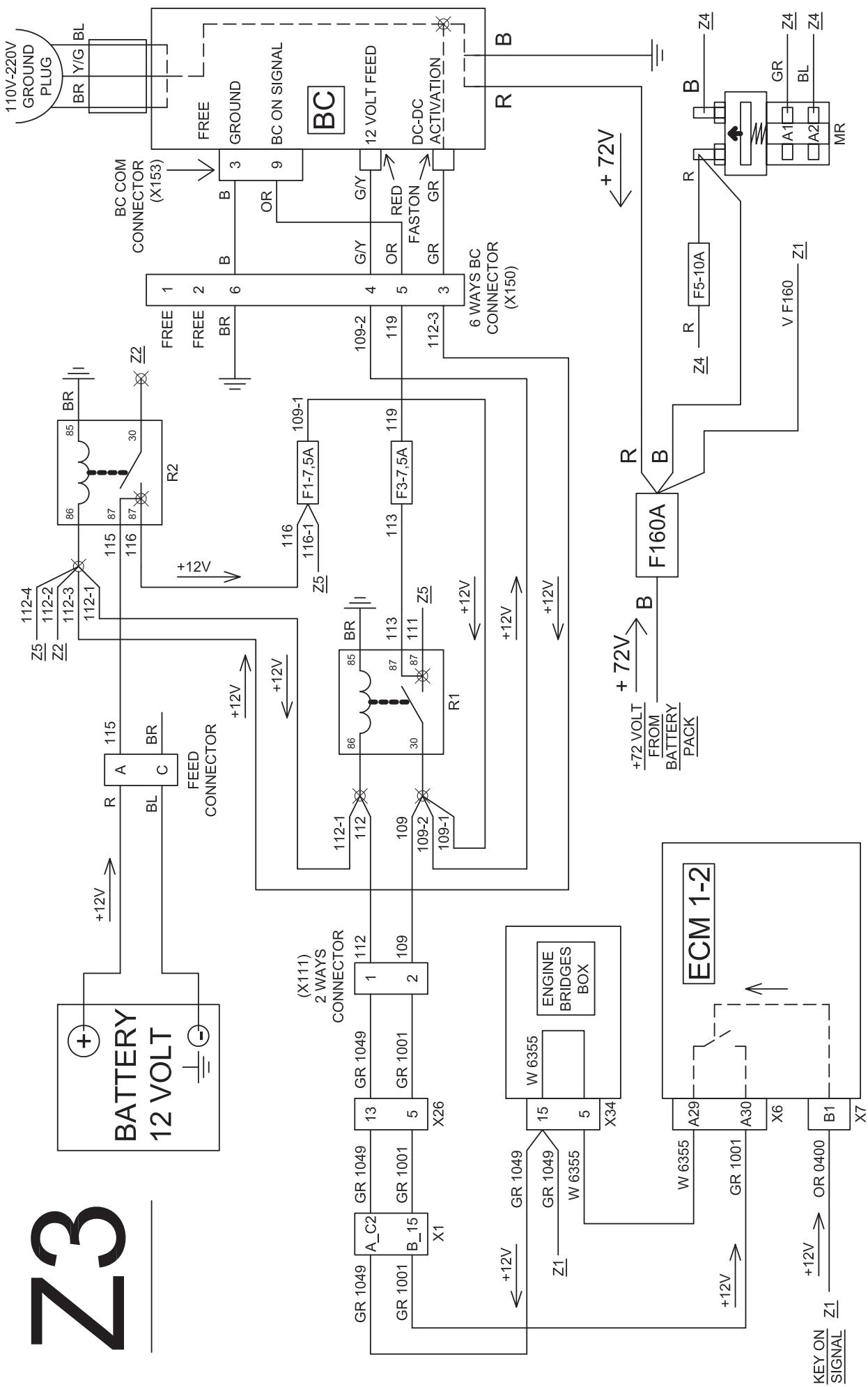
- All the wires are white, except where different indicated
- Most of the wires have an identifying number, indicated in the wiring diagrams
- Close to the identifying number, every wire shows the two terminal points of connexion



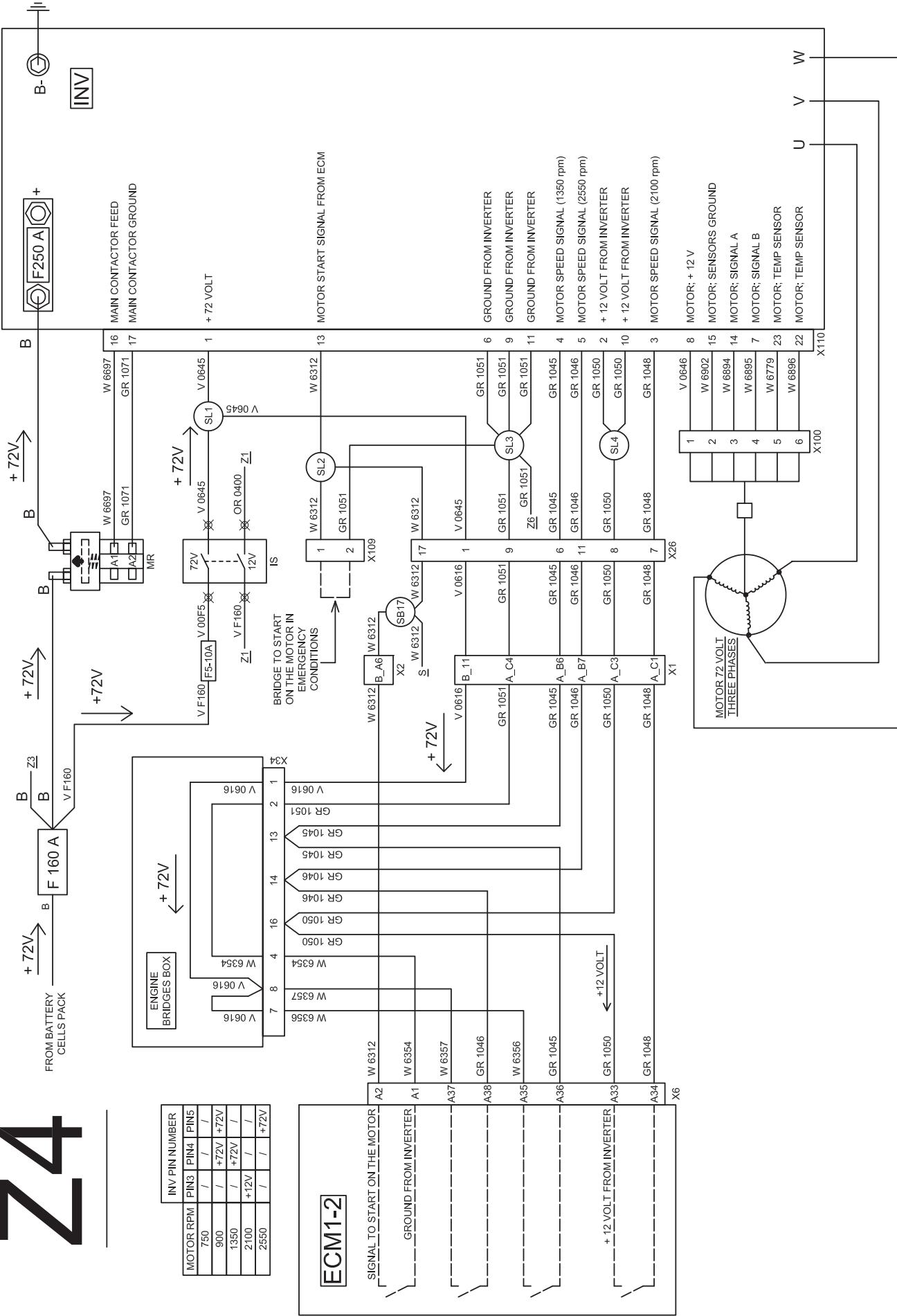
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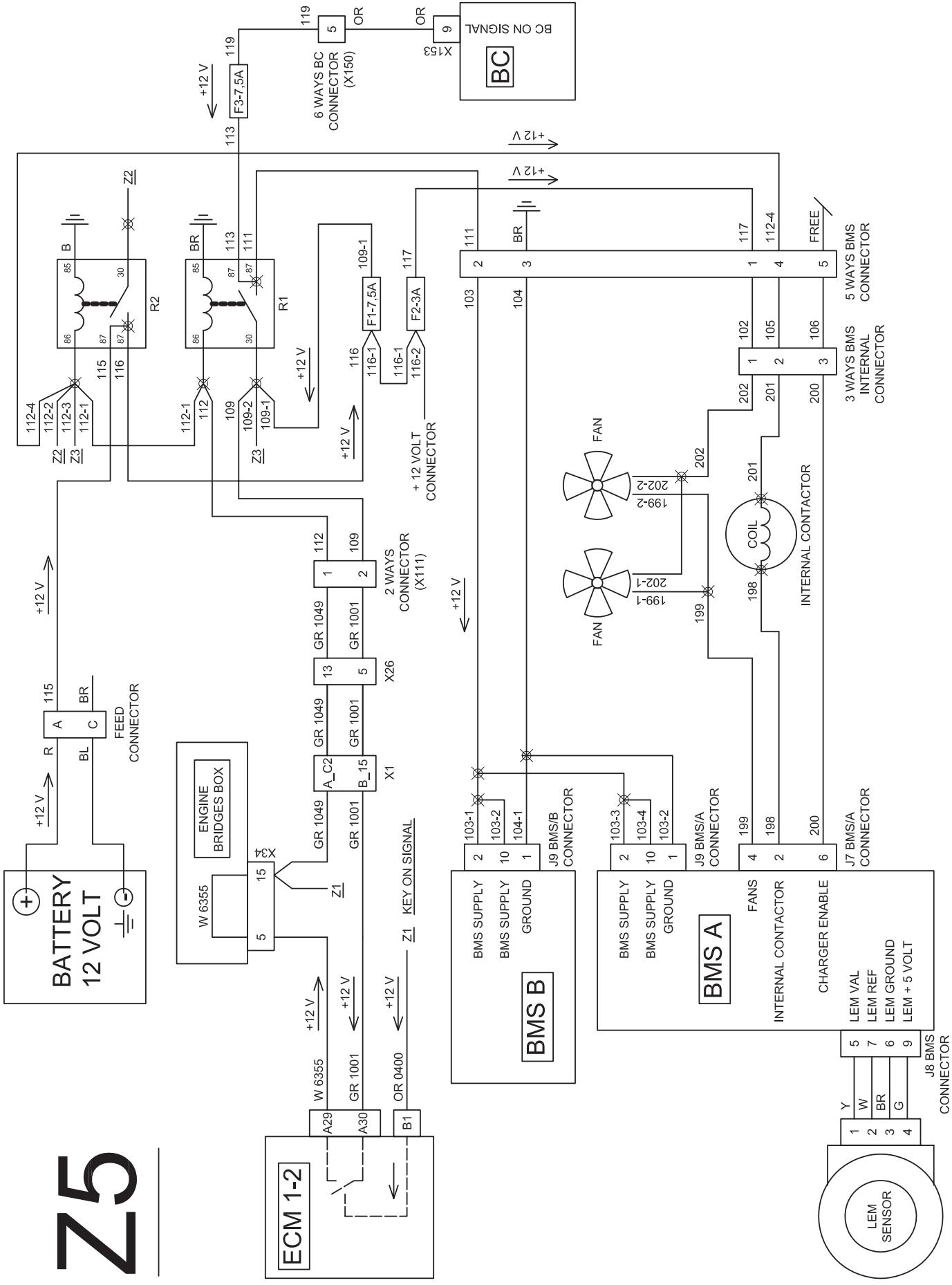




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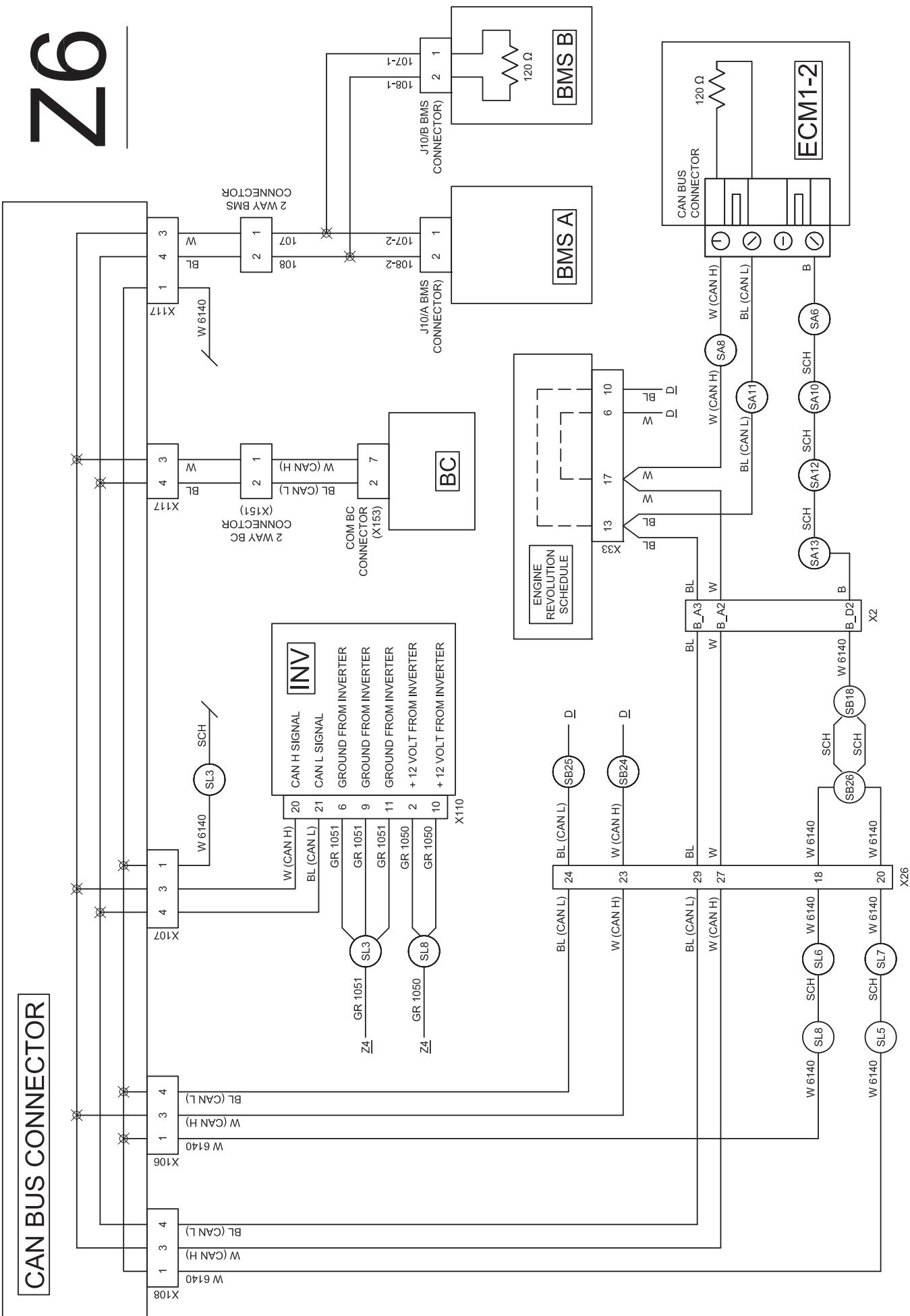


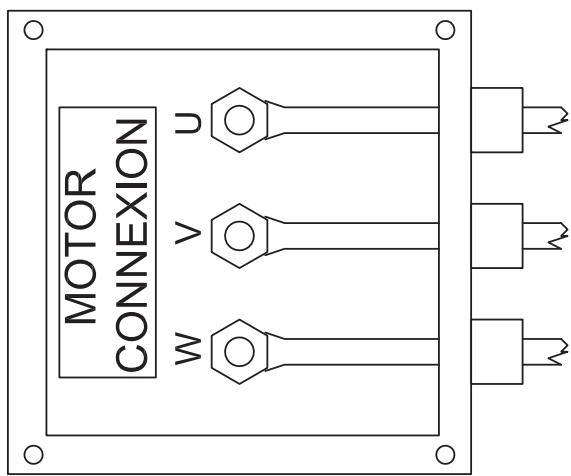
N
5



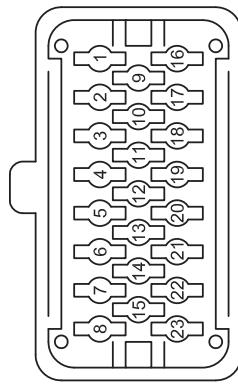
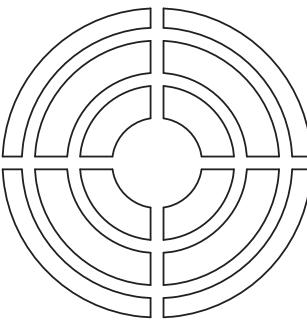
CAN BUS CONNECTOR

CON

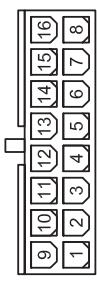




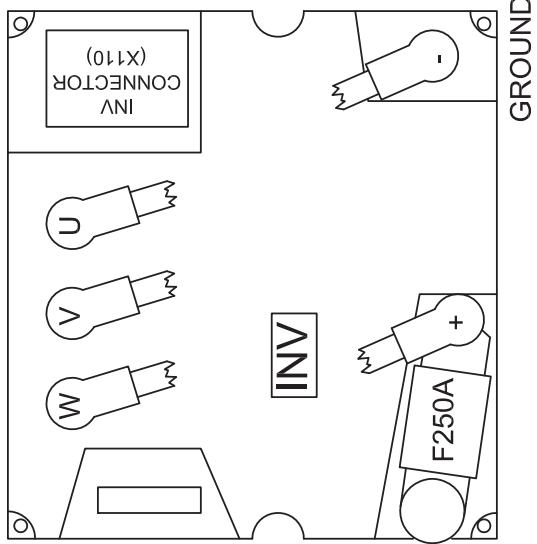
Z7



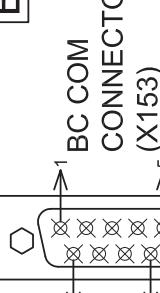
INV CONNECTOR
(FRONT VIEW) - (X110)



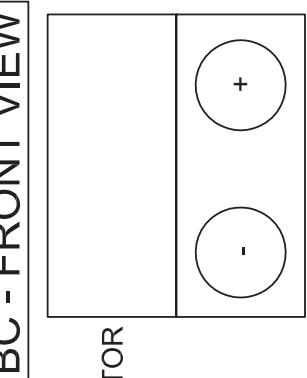
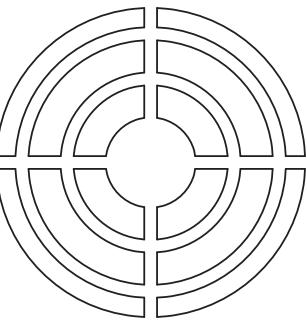
CAN BRIDGE CONNECTOR
(FRONT VIEW) - (X154)



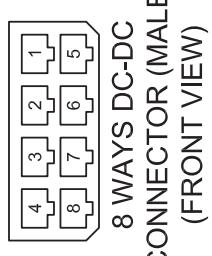
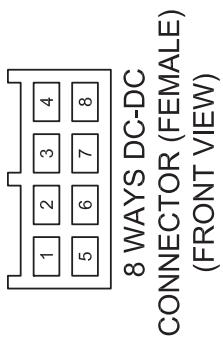
X106,107,108;117



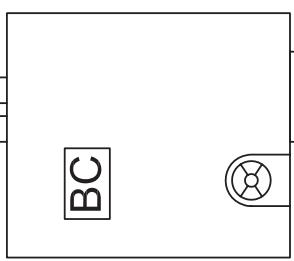
RED
FASTON



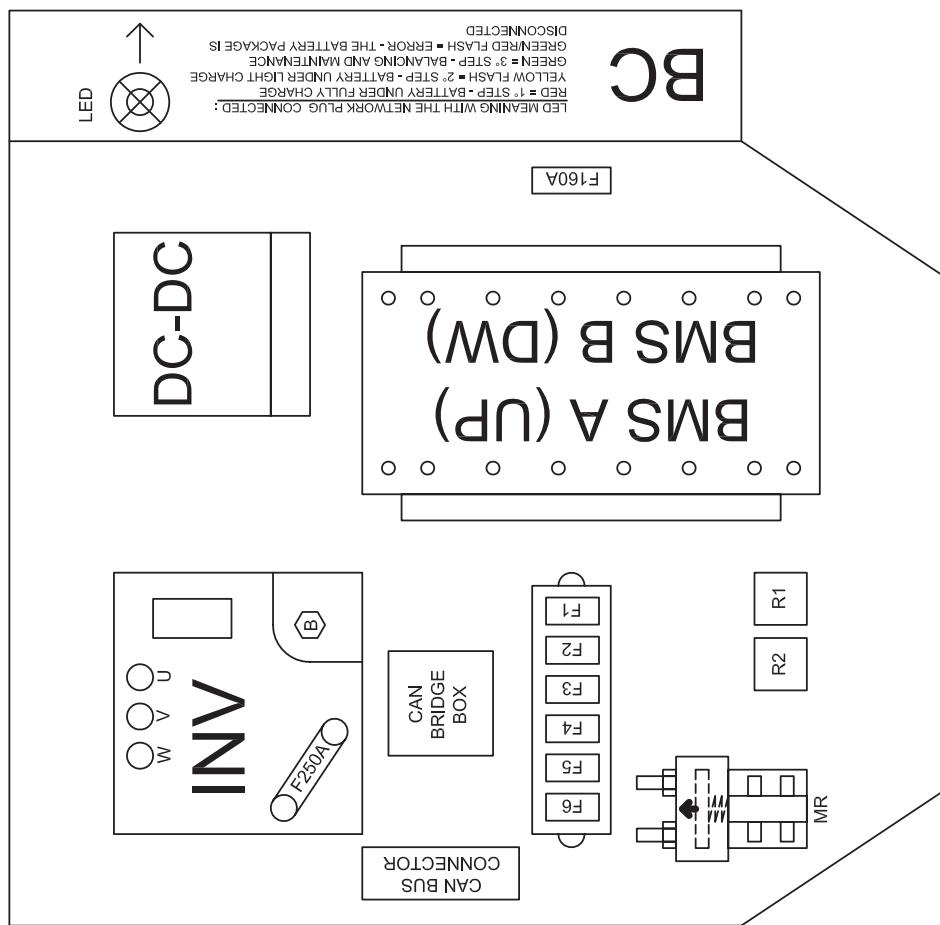
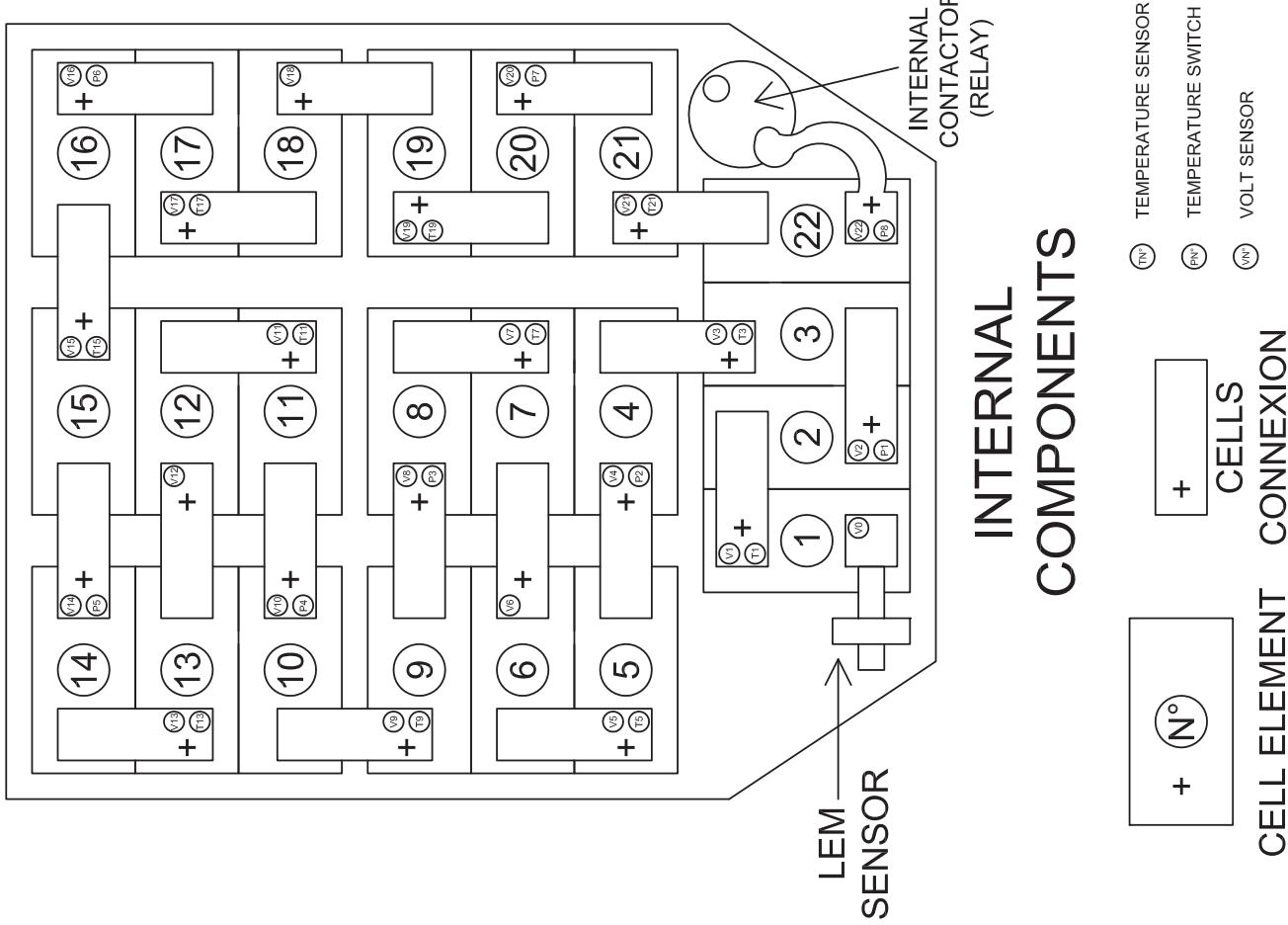
EXIT +72V



110 /220 VOLT AC IN



EXIT +72V



Z8

- (TN) TEMPERATURE SENSOR
- (PN) TEMPERATURE SWITCH
- (VN) VOLT SENSOR

2	4	6	8	10	12	14	16
1	3	5	7	9	11	13	15

J1 A/B - J2 A/B - J3 A/B
CONNECTOR (WHITE)

2	4	6	8	10	12	14	16
1	3	5	7	9	11	13	15

J8 A/B CONNECTOR
(WHITE)

2	4	6	8	10	12	14	16	18
1	3	5	7	9	11	13	15	17

J9 A/B CONNECTOR
(WHITE)

Z9

J10 A/B CONNECTOR
(BLACK)

3	4
1	2

J7 A/B CONNECTOR
(BLACK)

5	6	7	8
1	2	3	4

J6 A/B CONNECTOR
(BLACK)

11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

NOTE: FRONT VIEW
CONNECTORS SHOWED

Connector J1/A - Temperature Input		
PIN	COLOR	DESCRIPTION
1	186	NTC Cell 1- (T1)
2	187	NTC Cell 1 + (T1)
3	/	
4	/	
5	188	NTC Cell 3 - (T3)
6	189	NTC Cell 3 + (T3)
7	/	
8	/	
9	190	NTC Cell 5 - (T5)
10	191	NTC Cell 5 + (T5)
11	192	NTC HS 1 - (T6)
12	193	NTC HS 1 + (T6)
13	194	NTC Prot CH 1 - (P1)
14	195	NTC Prot CH 1 + (P1)
15	196	NTC Prot CH 2 - (P2)
16	197	NTC Prot CH 2 + (P2)

Note: NTC Cell N° are temperature sensors. They are located in the cell number indicated, and they measure the temperature continuously
 NTC Prot CH N° are temperature switches (ON/OFF) for protection reasons. They are located in the cell number indicated, and they close the line only when the temperature exceeds 70 °C
 NTC HS N° are temperature sensors in the cooler
 () Bracket show the position on page Z8 (internal Components)

Connector J2/A - Temperature Input		
PIN	COLOR	DESCRIPTION
1	174	NTC Cell 7 - (T7)
2	175	NTC Cell 7 + (T7)
3	/	
4	/	
5	176	NTC Cell 9 - (T9)
6	177	NTC Cell 9 + (T9)
7	178	NTC HS 2 - (T10)
8	179	NTC HS 2 + (T10)
9	/	
10	/	
11	180	NTC Cell 11 - (T11)
12	181	NTC Cell 11 + (T11)
13	182	NTC Prot CH 3 - (P3)
14	183	NTC Prot CH 3 + (P3)
15	184	NTC Prot CH 4 - (P4)
16	185	NTC Prot CH 4 + (P4)

Connector J3/A - Temperature Input		
PIN	COLOR	DESCRIPTION
1	161	GND (V0)
2	162	Volt Cell 1 (V1)
3	163	Volt Cell 2 (V2)
4	164	Volt Cell 3 (V3)
5	165	Volt Cell 4 (V4)
6	166	Volt Cell 5 (V5)
7	167	Volt Cell 6 (V6)
8	168	Volt Cell 7 (V7)
9	169	Volt Cell 8 (V8)
10	170	Volt Cell 9 (V9)
11	171	Volt Cell 10 (V10)
12	172	Volt Cell 10 (V10)
13	173	Volt Cell 11 (V11)
14	/	
15	/	
16	/	
17	/	
18	/	
19	/	
20	/	

Connector J9/A - Supply

PIN	COLOR	DESCRIPTION
1	/	
2	/	
3	/	
4	/	
5	Y	Lem Val
6	BR	Lem GND
7	W	Lem Ref
8	R/B	
9	G	Lem + 5 Volt
10	/	
11	/	
12	/	
13	/	
14	/	
15	/	
16	/	
17	/	
18	/	

Connector J8/A - Current Sensor

PIN	COLOR	DESCRIPTION
1	104-2	External GND
2	103-3	BMS Supply
3	/	
4	/	
5	/	
6	/	
7	/	
8	/	
9	/	
10	103-4	BMS Supply
11	/	
12	/	
13	/	
14	/	
15	/	
16	/	
17	/	
18	/	

Connector J6/A - Voltage Input

PIN	COLOR	DESCRIPTION
1	161	GND (V0)
2	162	Volt Cell 1 (V1)
3	163	Volt Cell 2 (V2)
4	164	Volt Cell 3 (V3)
5	165	Volt Cell 4 (V4)
6	166	Volt Cell 5 (V5)
7	167	Volt Cell 6 (V6)
8	168	Volt Cell 7 (V7)
9	169	Volt Cell 8 (V8)
10	170	Volt Cell 9 (V9)
11	171	Volt Cell 10 (V10)
12	172	Volt Cell 10 (V10)
13	173	Volt Cell 11 (V11)
14	/	
15	/	
16	/	
17	/	
18	/	
19	/	
20	/	

Connector J10/A - Can Bus

PIN	COLOR	DESCRIPTION
1	107-2	CAN H
2	108-2	CAN L
3	/	
4	/	

Z10A

Connector J1/B - Temperature Input		
PIN	COLOR	DESCRIPTION
1	/	
2	/	
3	136	NTC Cell 13 - (T13)
4	137	NTC Cell 13 + (T13)
5	/	
6	/	
7	138	NTC Cell 15 - (T15)
8	139	NTC Cell 15 + (T15)
9	140	NTC HS 3 - (T16)
10	141	NTC HS 3 + (T16)
11	142	NTC Cell 17 - (T17)
12	143	NTC Cell 17 + (T17)
13	144	NTC Prot CH 5 - (P5)
14	145	NTC Prot CH 5 + (P5)
15	146	NTC Prot CH 6 - (P6)
16	147	NTC Prot CH 6 + (P6)

Note: NTC Cell Nº are temperature sensors. They are located in the cell number indicated, and they measure the temperature continuously
 NTC Prot CH Nº are temperature switches (ON/OFF) for protection reasons. They are located in the cell number indicated, and they close the line only when the temperature exceeds 70 °C
 NTC HS Nº are temperature sensors in the cooler
 () Bracket show the position on page Z8 (internal Components)

Connector J2/B - Temperature Input		
PIN	COLOR	DESCRIPTION
1	/	
2	/	
3	126	NTC Cell 19 - (T19)
4	127	NTC Cell 19 + (T19)
5	128	NTC HS 4 - (T20)
6	129	NTC HS 4 + (T20)
7	130	NTC Cell 21 - (T21)
8	131	NTC Cell 21 + (T21)
9	/	
10	/	
11	/	
12	/	
13	132	NTC Prot CH 7 - (P7)
14	133	NTC Prot CH 7 + (P7)
15	134	NTC Prot CH 8 - (P8)
16	135	NTC Prot CH 8 + (P8)

Connector J3 / B - Temperature Input		
PIN	COLOR	DESCRIPTION
1	EMPTY	

Connector J6 / B - Voltage Input		
PIN	COLOR	DESCRIPTION
1	148	Volt Cell 11 (V11)
2	149	Volt Cell 12 (V12)
3	150	Volt Cell 13 (V13)
4	151	Volt Cell 14 (V14)
5	152	Volt Cell 15 (V15)
6	153	Volt Cell 16 (V16)
7	154	Volt Cell 17 (V17)
8	155	Volt Cell 18 (V18)
9	156	Volt Cell 19 (V19)
10	157	Volt Cell 20 (V20)
11	158	Volt Cell 21 (V21)
12	159	Volt Cell 21 (V21)
13	160	Volt Cell 22 (V22)
14	/	
15	/	
16	/	
17	/	
18	/	
19	/	
20	/	

Note: Cell 21 has double signal

Connector J10/B - Can Bus		
PIN	COLOR	DESCRIPTION
1	107-1	CAN H
2	108-1	CAN L
3	/	
4	/	

Connector J8B - Current Sensor		
PIN	COLOR	DESCRIPTION
1	EMPTY	

Connector J7/B		
Internal Contactor and fans		
PIN	COLOR	DESCRIPTION
1	EMPTY	

Z10B

**CALIFORNIAN PROPOSITION 65
BATTERY WARNING**

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.

Batteries also contain other harmful chemicals known to the State of California.

**WASH HANDS
AFTER HANDLING!**

WARNING:

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

1702961



3121762



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