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# ***Electrical Schematic Manual***

## ***Models***

***X17JP - X500AJ***

***X20JP - X600AJ***

***P/N - 3121762***

***November 1, 2016***

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

***ANSI***

***CE***



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## 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 elettro stop	N
• Motore Diesel Perkins 2 cilindri: Avviamento e candele	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 abbreviazioni 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 – Conmutador eléctrico	J
• Parte aérea: Nivelación de la cesta – Rotación de la cesta – Jib – Electroválvula 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
• Boité de commande a la terre	F
• Ligne de sécurité arienne	G
• Electrovanne descente d'urgence - Capteurs position chenille - Option	H
• Partie au sol: Chenilles - Elargissement chenilles - Deuxième vitesse - Electrovanne 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...

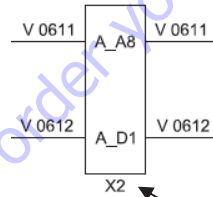
- **HOW TO READ THE WIRING DIAGRAMS**
- **COME LEGGERE GLI SCHEMI ELETTRICI**
- **CÓMO LEER LOS ESQUEMAS ELÉCTRICOS**
- **COMMENT LIRE LES PLANS ÉLECTRIQUES**

- 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

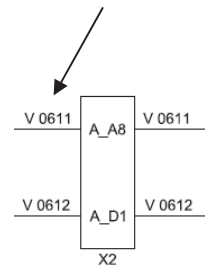


**A**

- 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



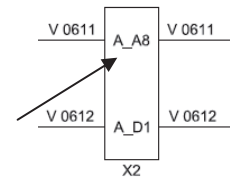
COLOUR CODES
A = AZURE
B = BLACK
BL = BLUE
BR = BROWN
G = GREEN
GR = GREY
OR = ORANGE
P = PINK
R = RED
V = PURPLE
W = WHITE
Y = YELLOW
SCH = SHIELDING

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

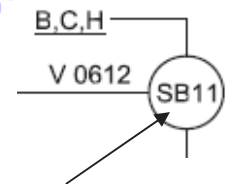
TABLA COLORES
A = AZUL
B = NEGRO
BL = AZUL
BR = MARRÓN
G = VERDE
GR = GRIS
OR = NARANJA
P = ROSA
R = ROJO
V = VIOLETA
W = BLANCO
Y = AMARILLO
SCH = CRIBADO

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

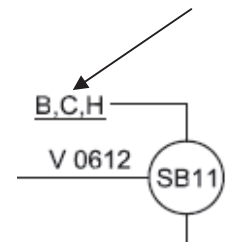
- Figures in the connectors, shows the pin numbers
- Le cifre all'interno dei connettori, indicano il numero del pin
- Las cifras dentro de los conectores, indican el numero del los contactos
- Les chiffres dans les connecteurs, indiquent le nombre des goupilles



- Circles show welds with two or more wires. Each weld has an identification number
- I cerchi mostrano saldature con due o più cavi. Ogni saldatura ha un numero identificativo
- Los circulo muestra 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

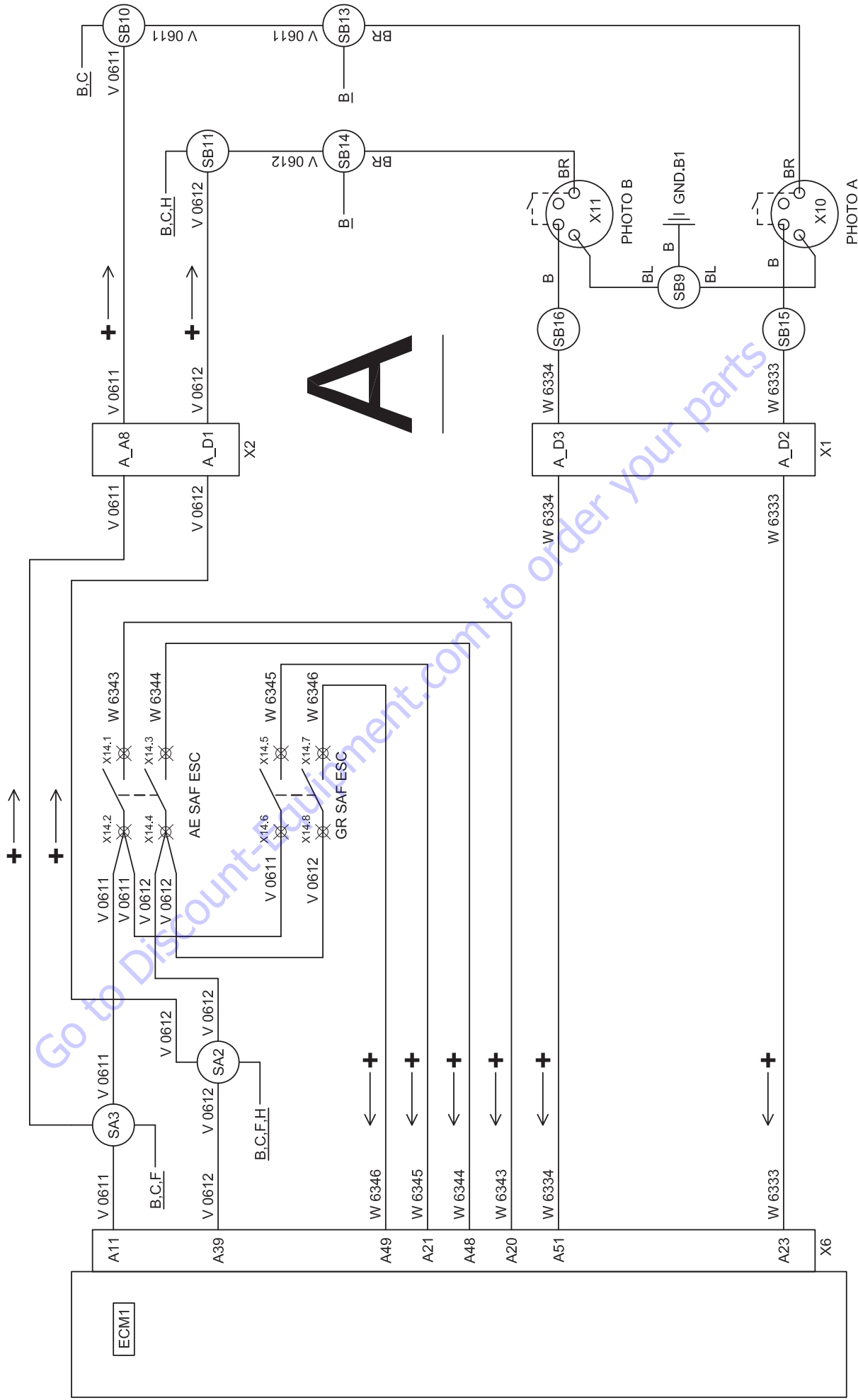


- Underlined letters show the page where the component is present too
- Le lettere sottolineate indicano le altre pagine dove il componente è presente
- Las letras subrayadas indican las otras páginas en donde el componente está presente
- Les lettres soulignées indiquent les autres pages où le composant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

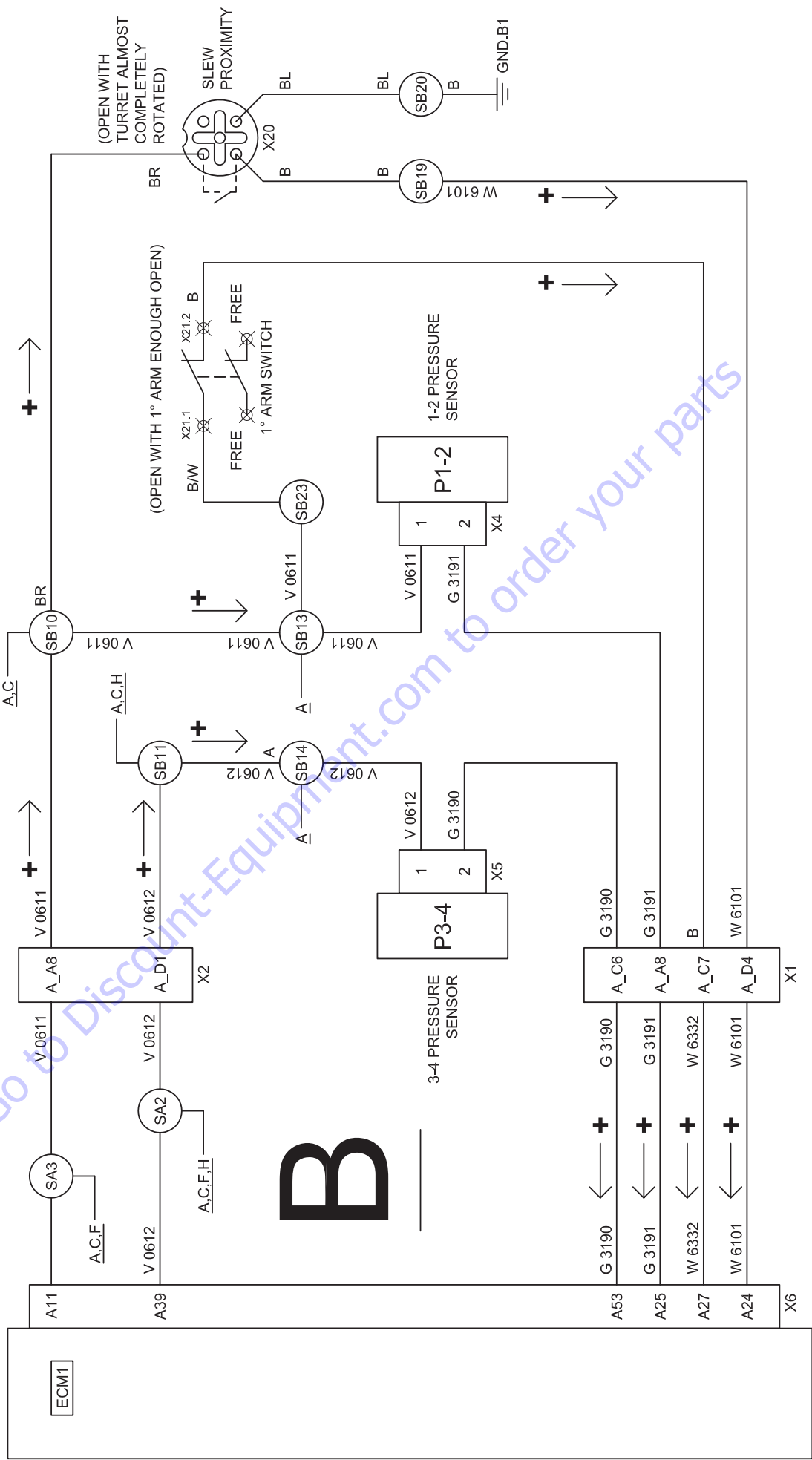


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# PHOTOCELLS - SAFETY EXCLUSION



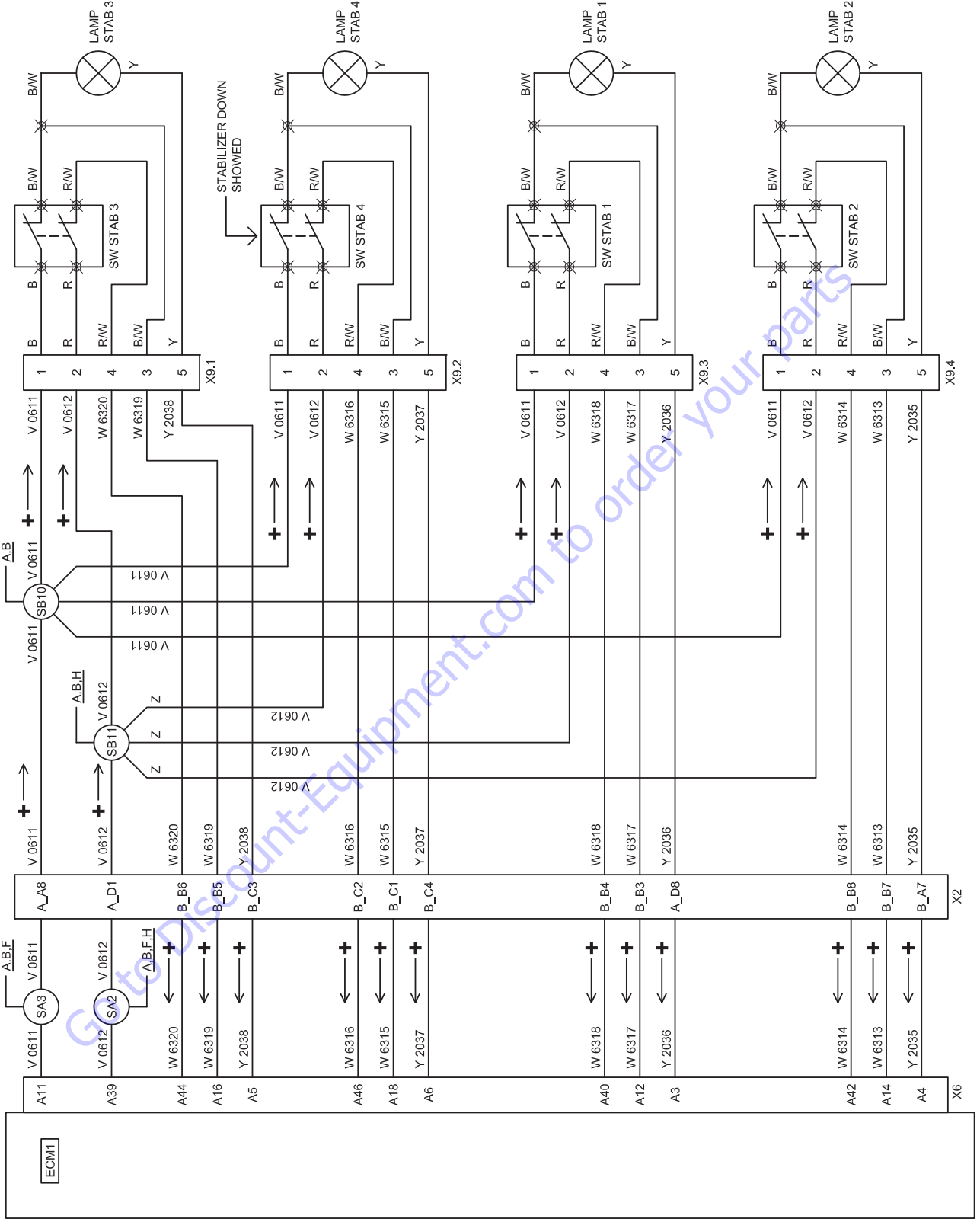
# SLEW PROXIMITY - 1° ARM SWITCH - STABILIZERS PRESSURE SENSORS



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B

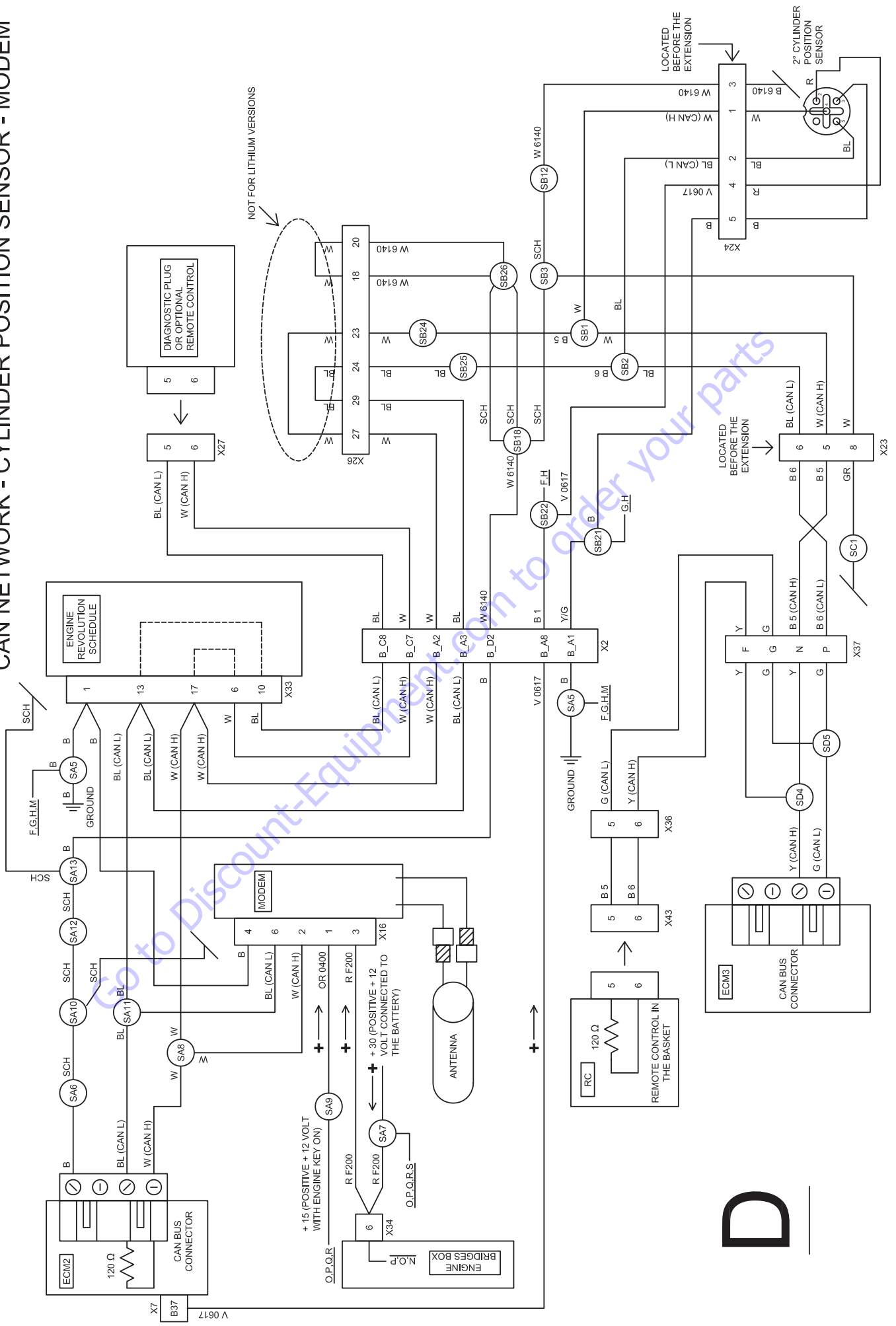
# OUTRIGGERS SWITCHES



Gate Discount Equipment

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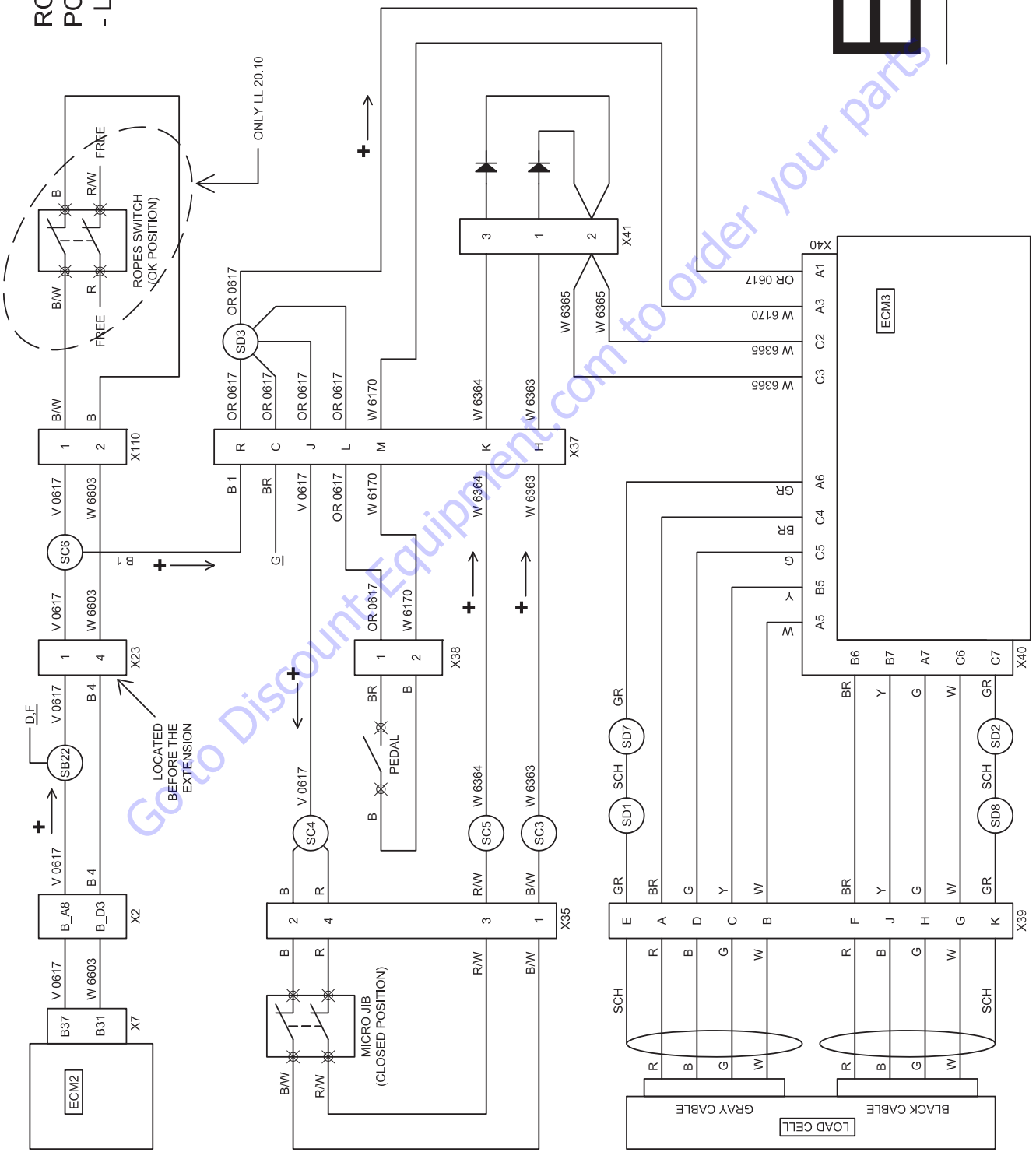
# CAN NETWORK - CYLINDER POSITION SENSOR - MODEM



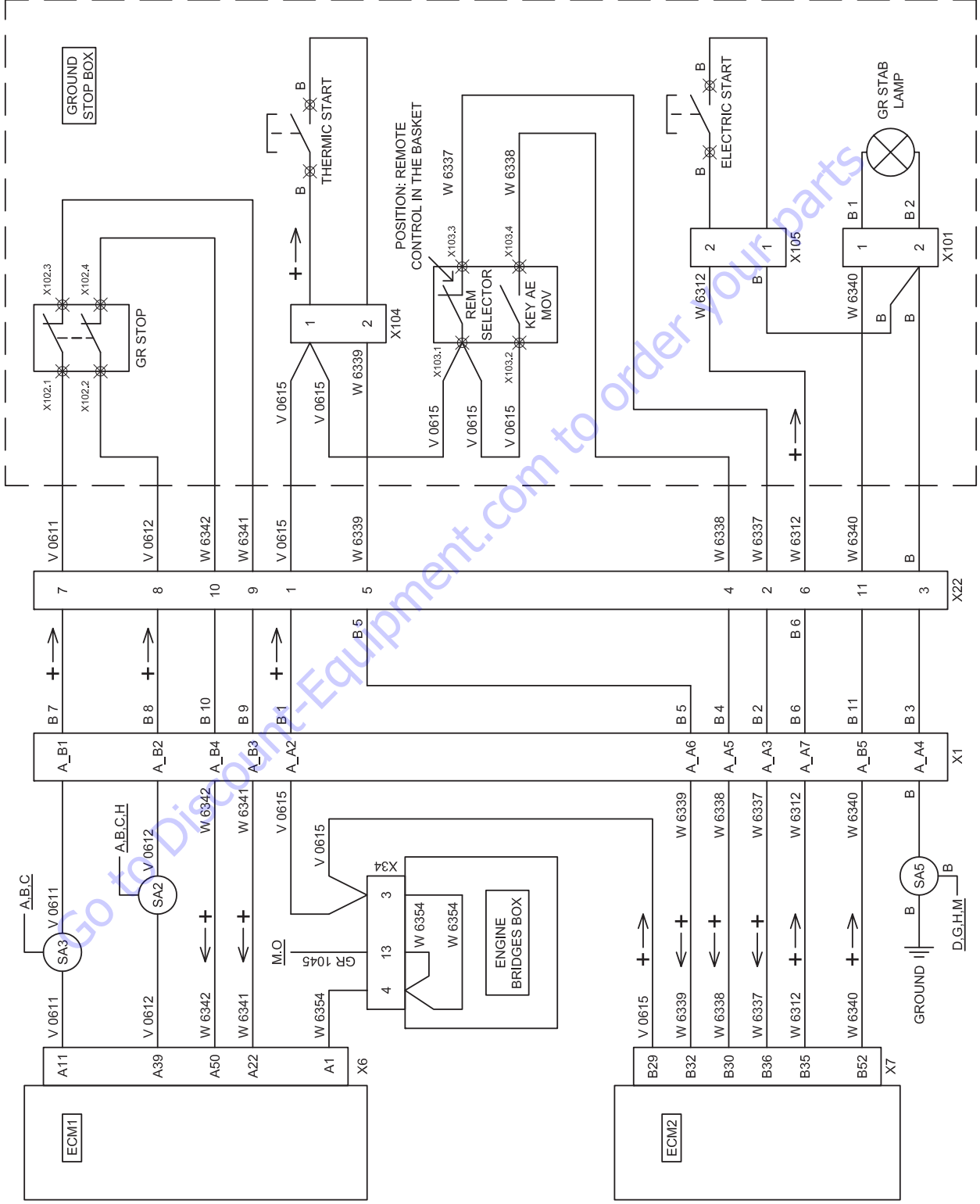
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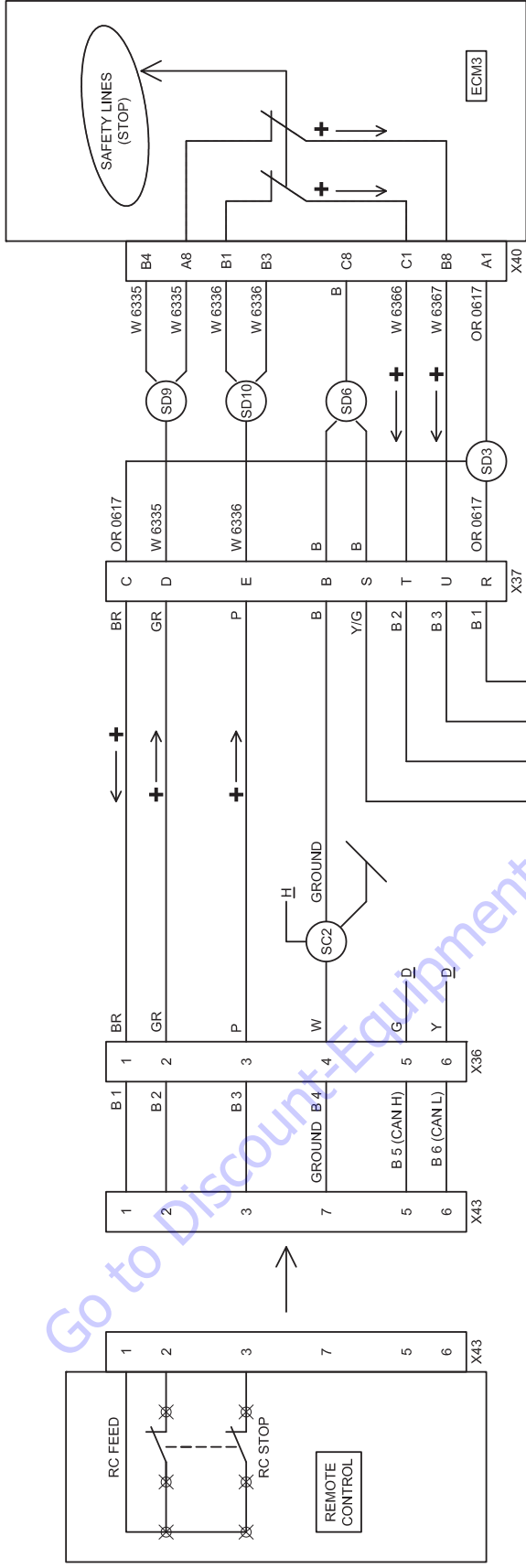
ROPES SWITCH - JIB  
 POSITION SWITCH - PEDAL  
 - LOAD CELL



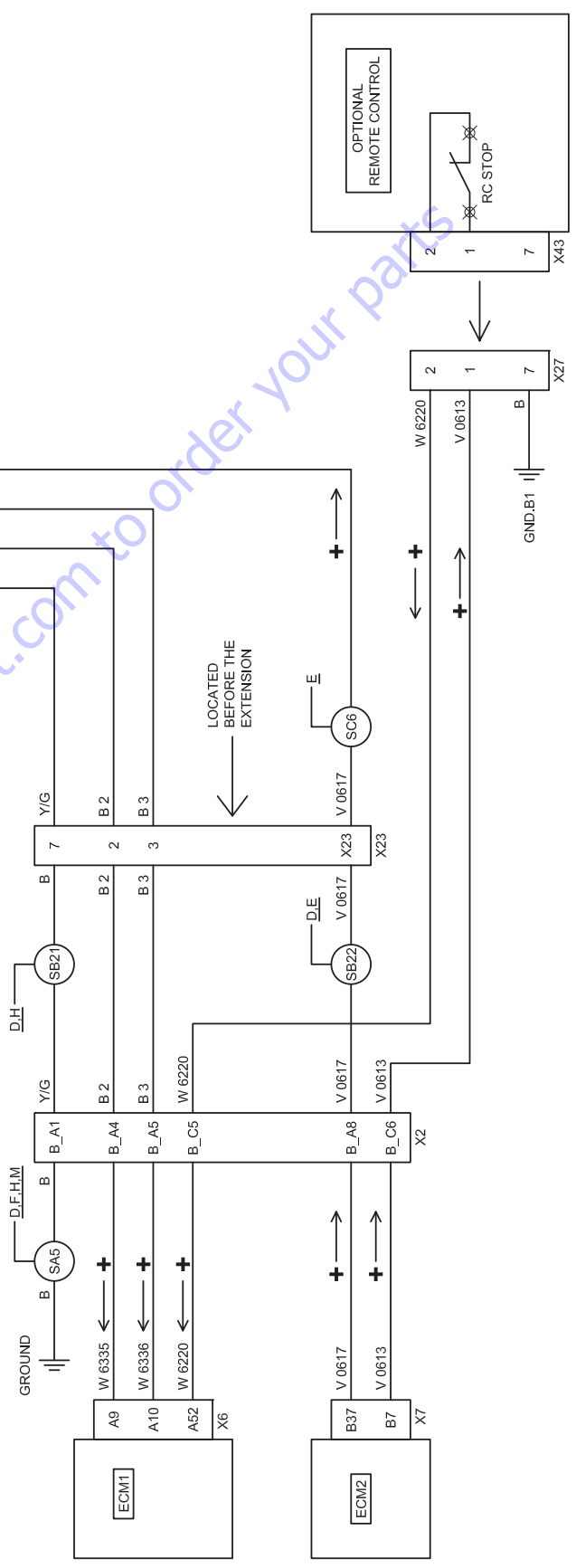
# GROUND POSITION CONTROL BOX



# AERIAL SAFETY LINE



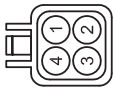
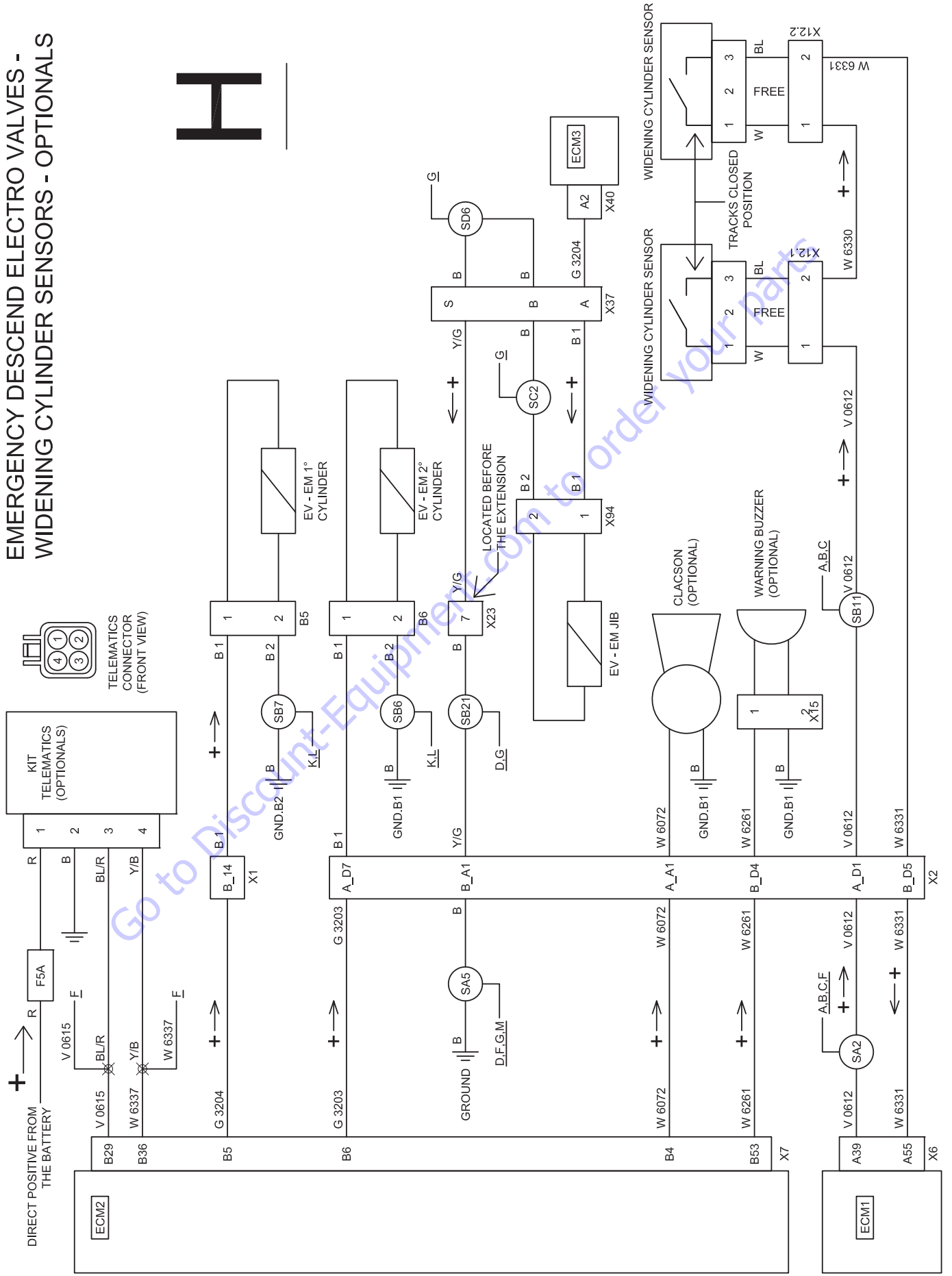
**G**



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# EMERGENCY DESCEND ELECTRO VALVES - WIDENING CYLINDER SENSORS - OPTIONALS

# H

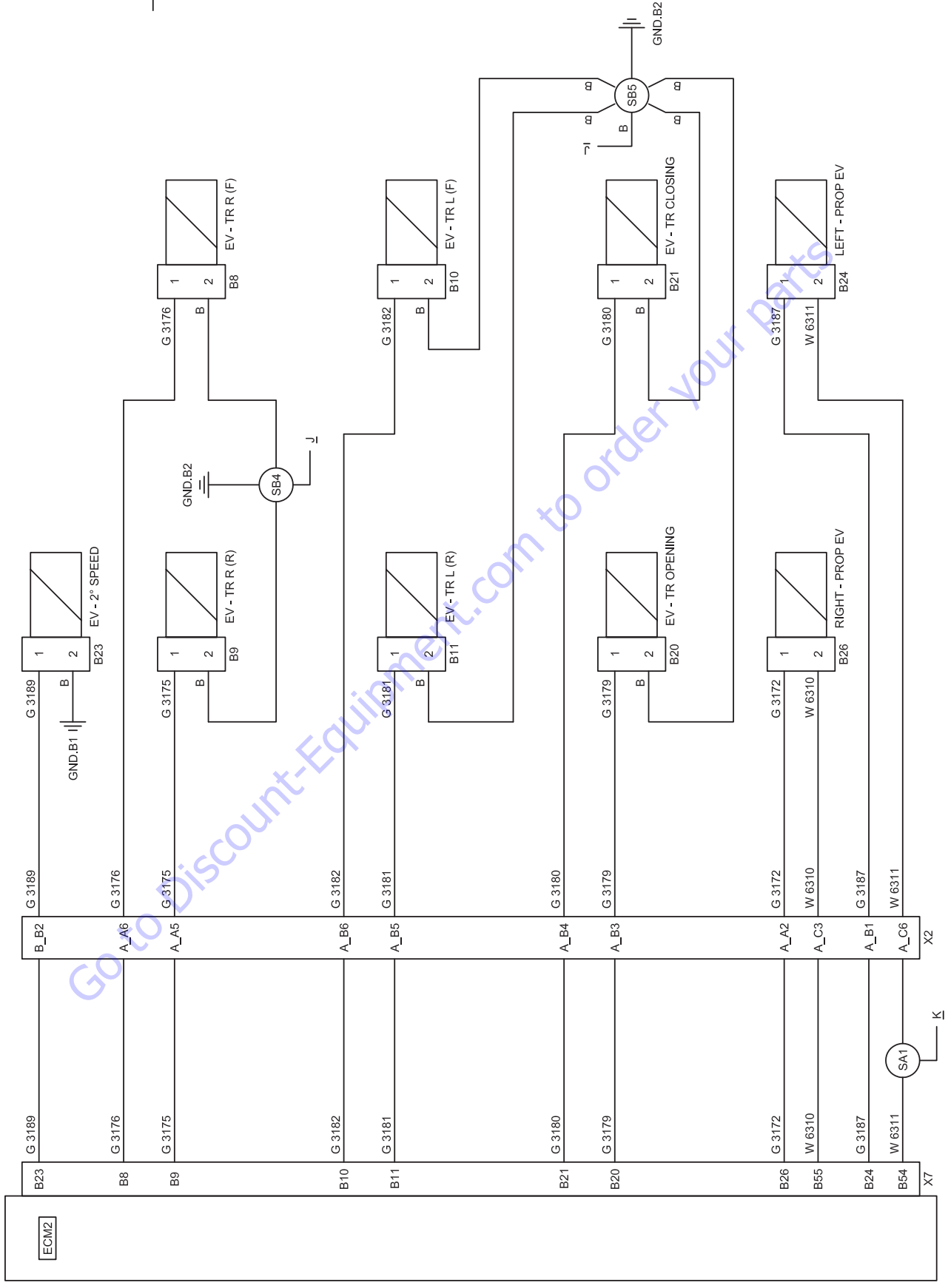


TELEMATICS CONNECTOR (FRONT VIEW)

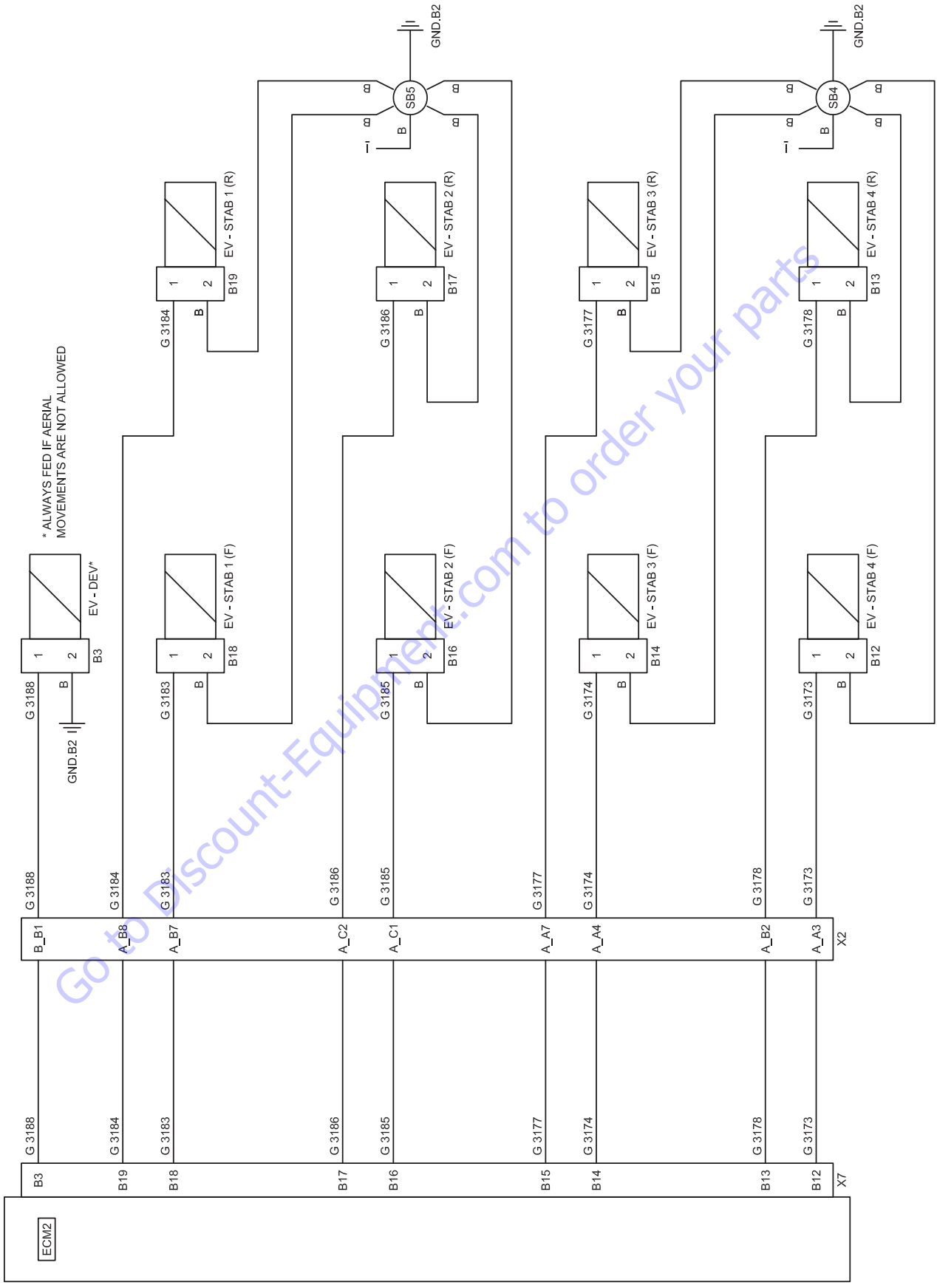
KIT TELEMATICS (OPTIONALS)

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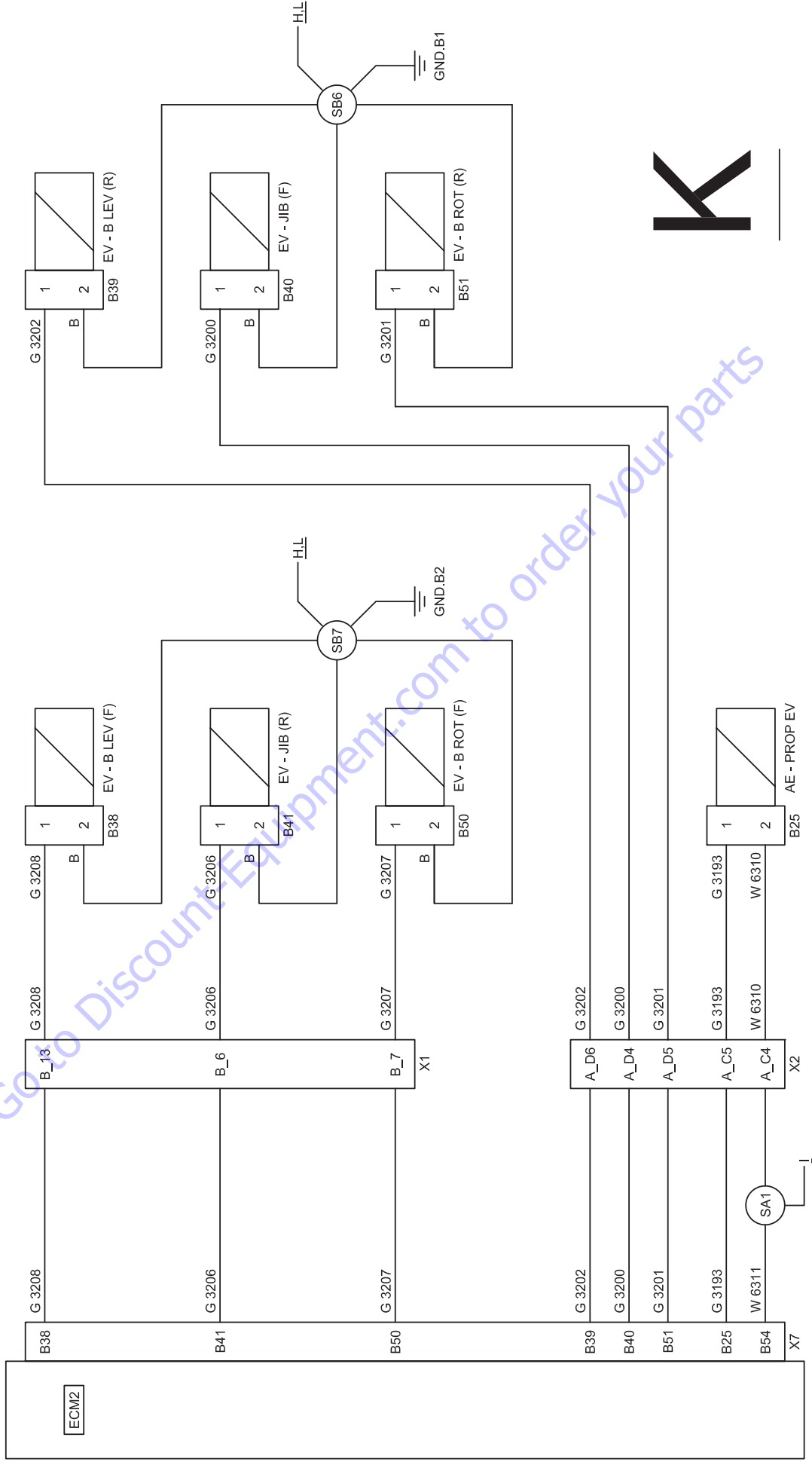
# GROUND PART: TRACKS - UNDERCARRIAGE WIDENING - 2° SPEED - PROPORTIONAL ELECTRO VALVES



# GROUND PART: OUTRIGGERS - ELECTRIC DIVERTER

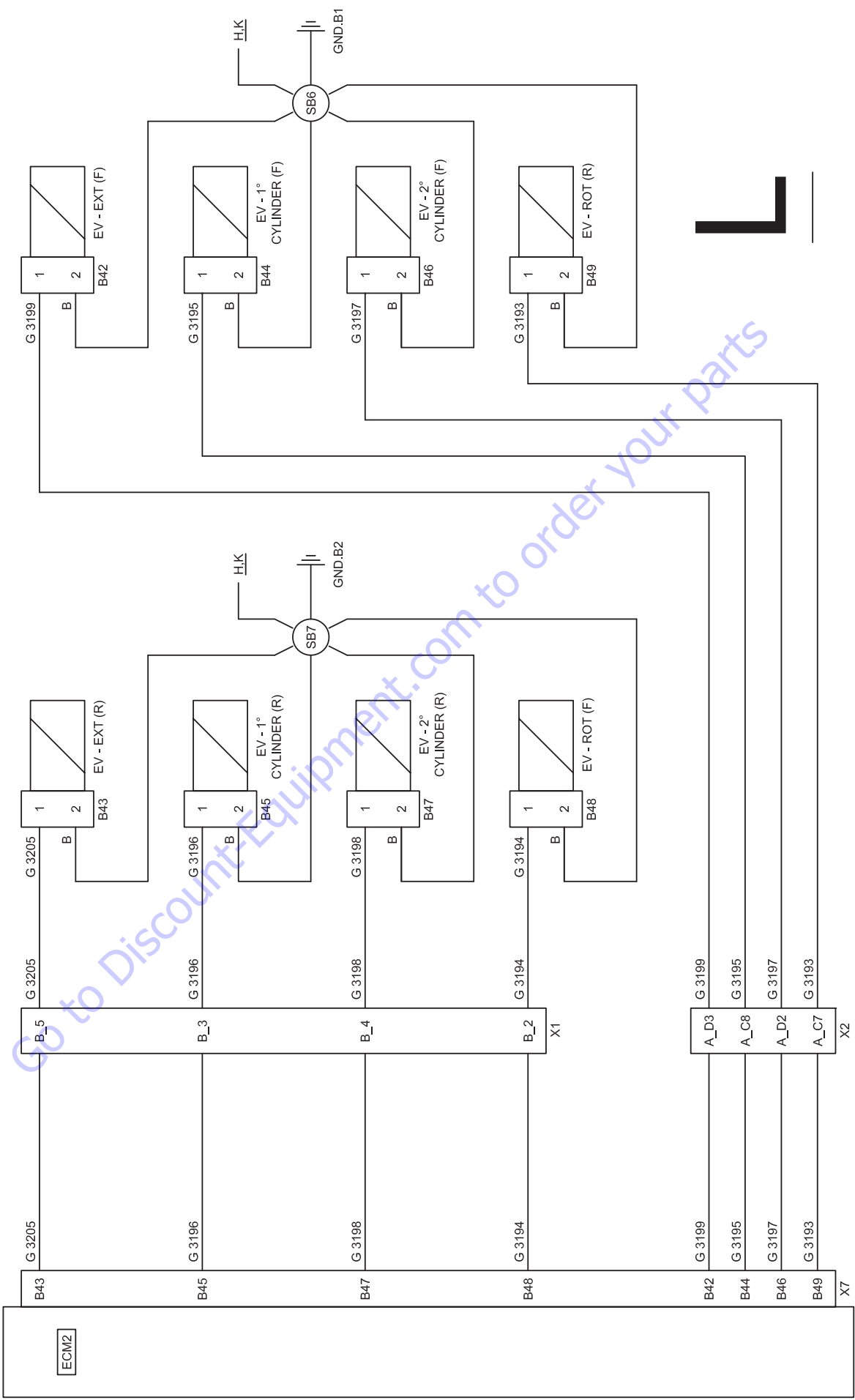


# AERIAL PART: BASKET LEVELLING - BASKET ROTATION - JIB PROPORTIONAL ELECTRO VALVE



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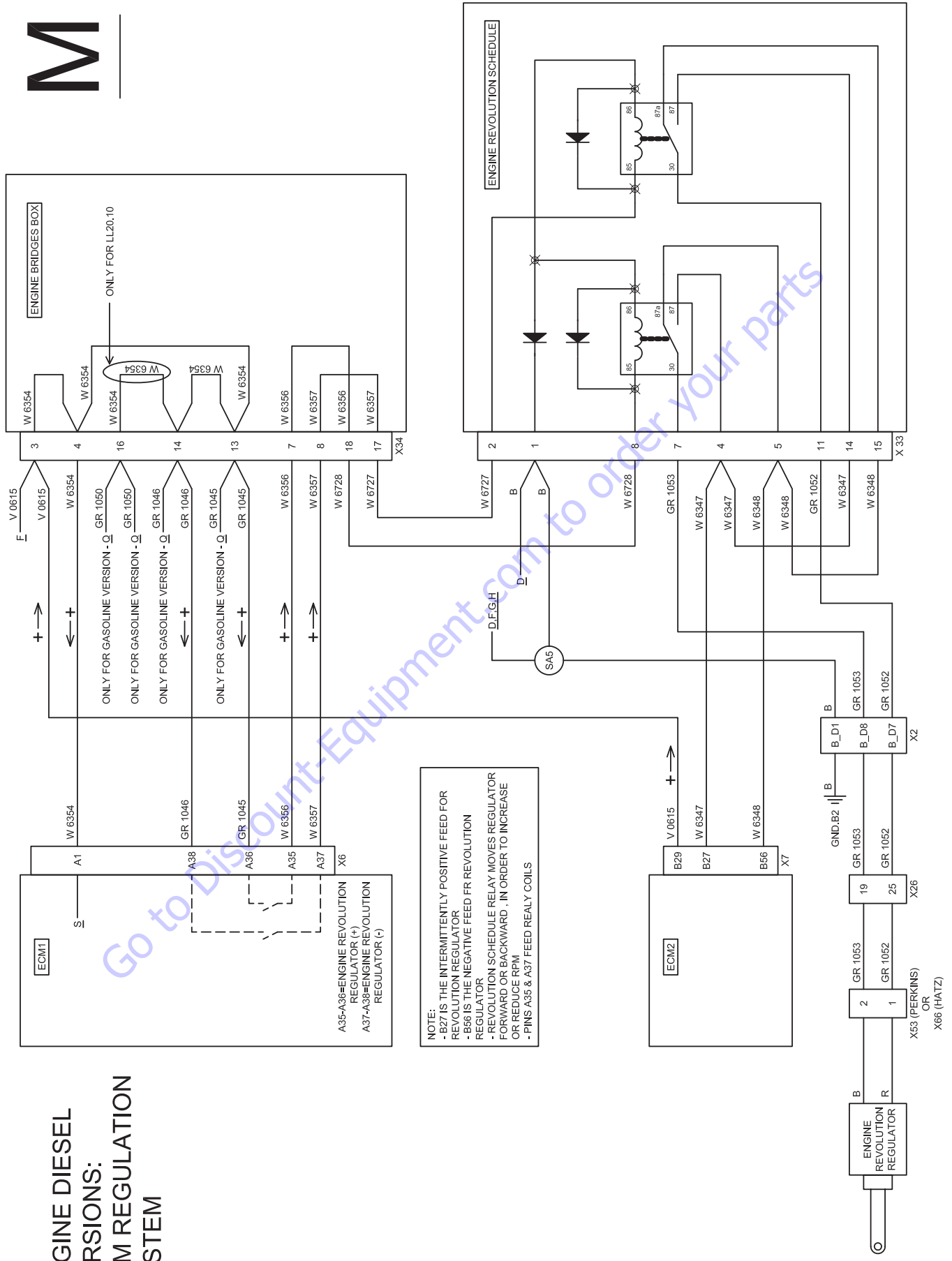
# AERIAL PART: 1° CYLINDER - 2° CYLINDER - EXTENSION - ROTATION





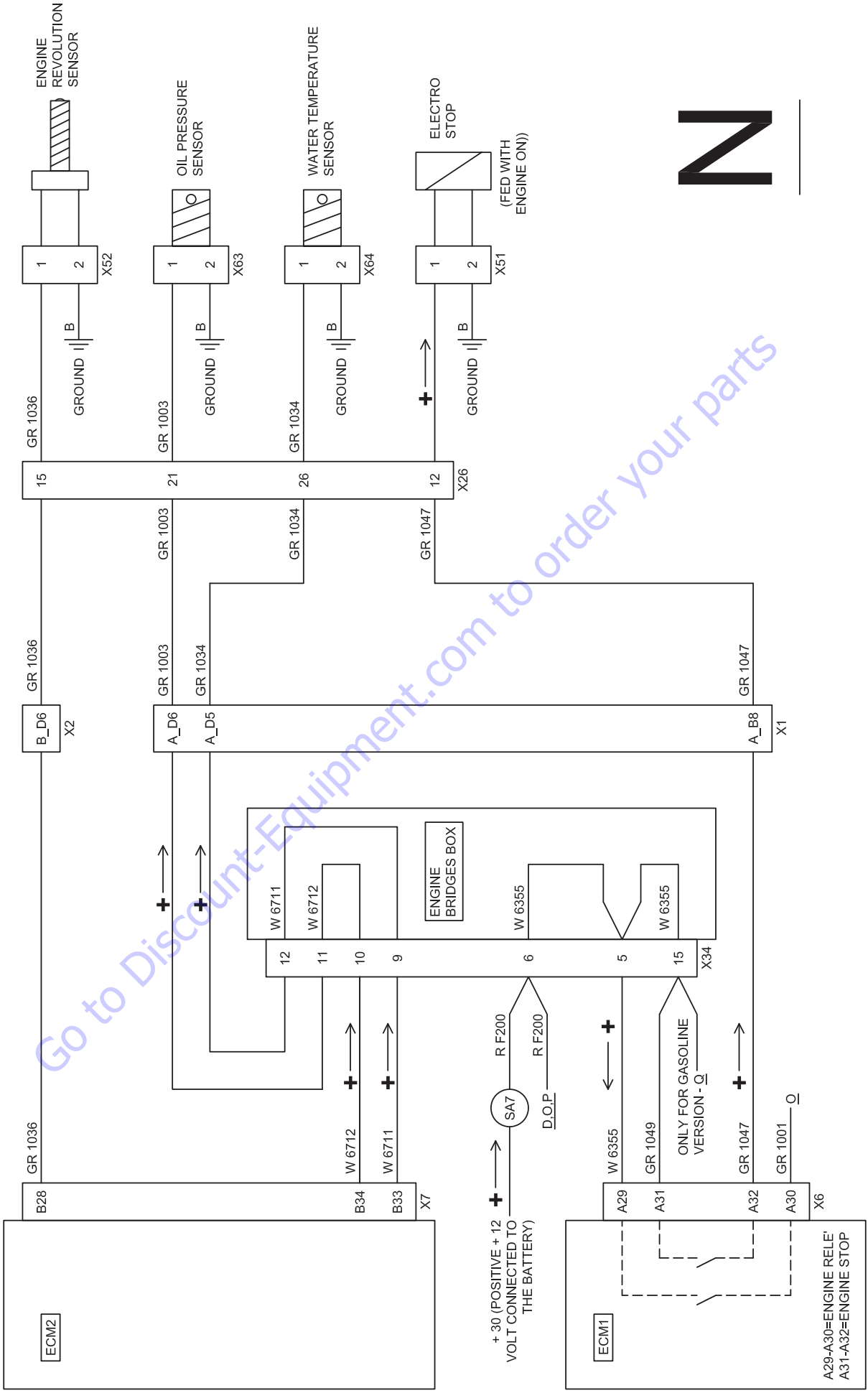


# ENGINE DIESEL VERSIONS: RPM REGULATION SYSTEM



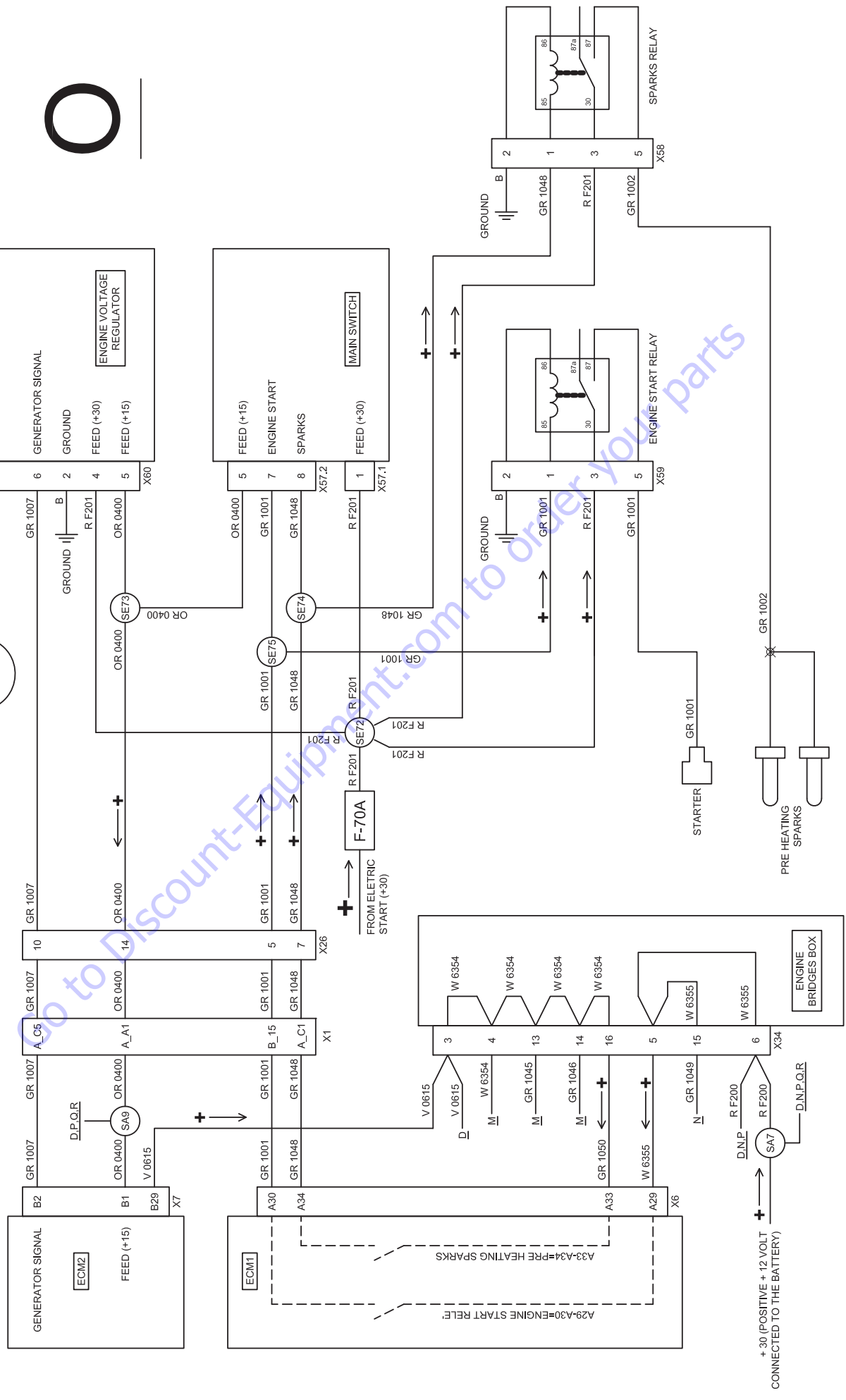
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# ENGINE DIESEL PERKINS 2 CYLINDERS: SENSORS AND ELECTRO STOP



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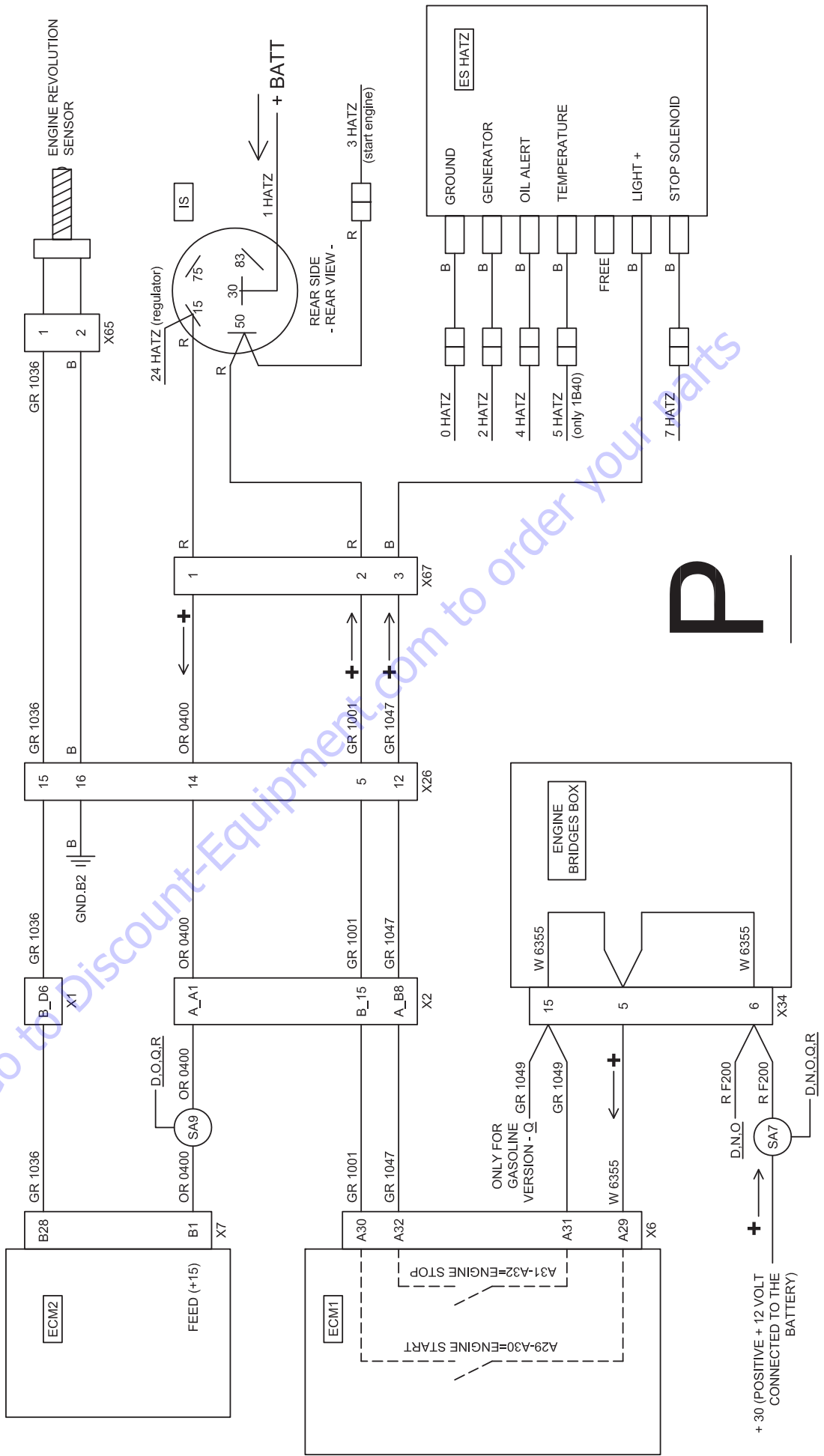
# ENGINE DIESEL PERKINS 2 CYLINDERS: START AND SPARKS



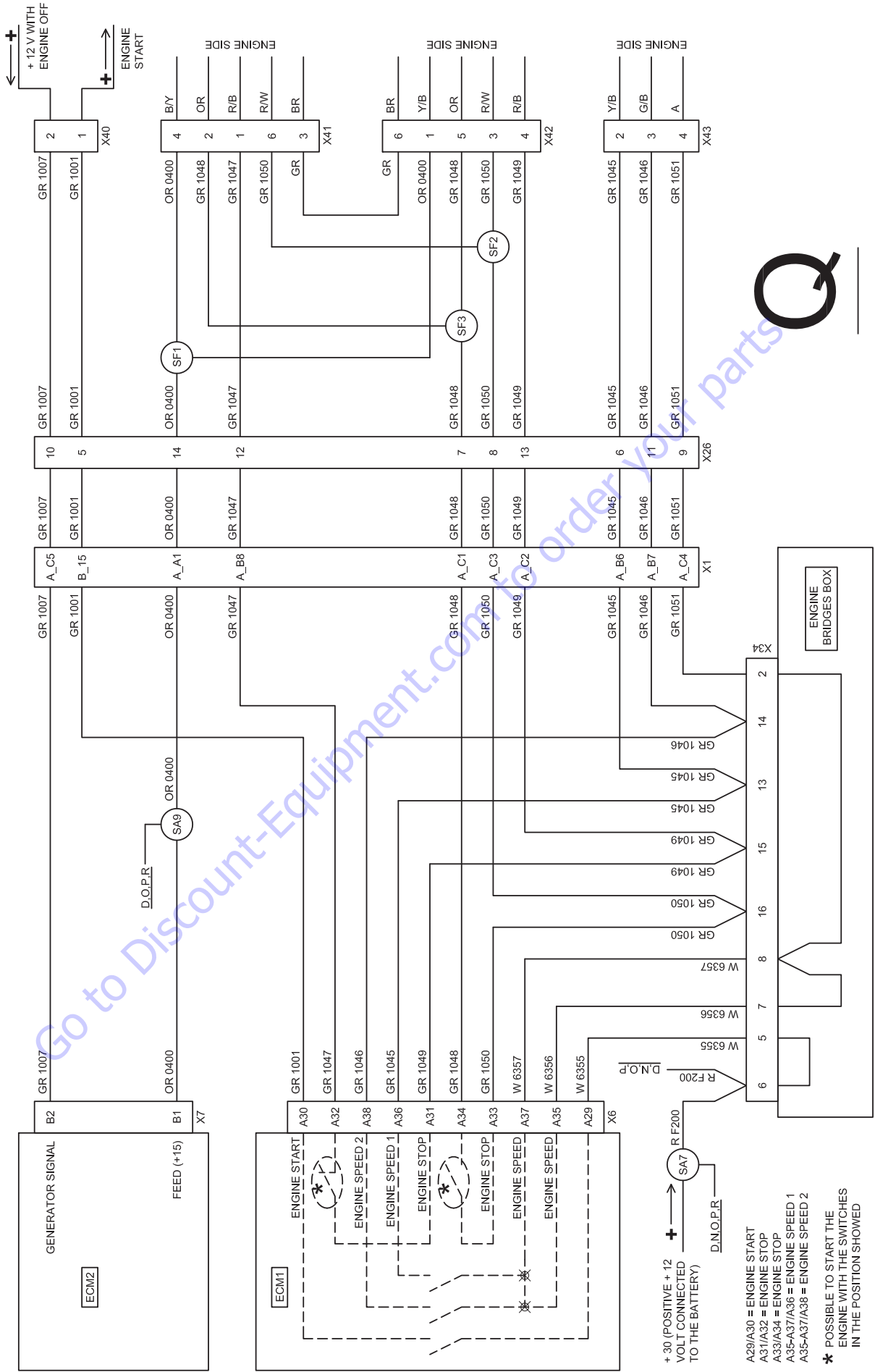
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+30 (POSITIVE +12 VOLT  
CONNECTED TO THE BATTERY)

# ENGINE DIESEL HATZ 1 CYLINDER



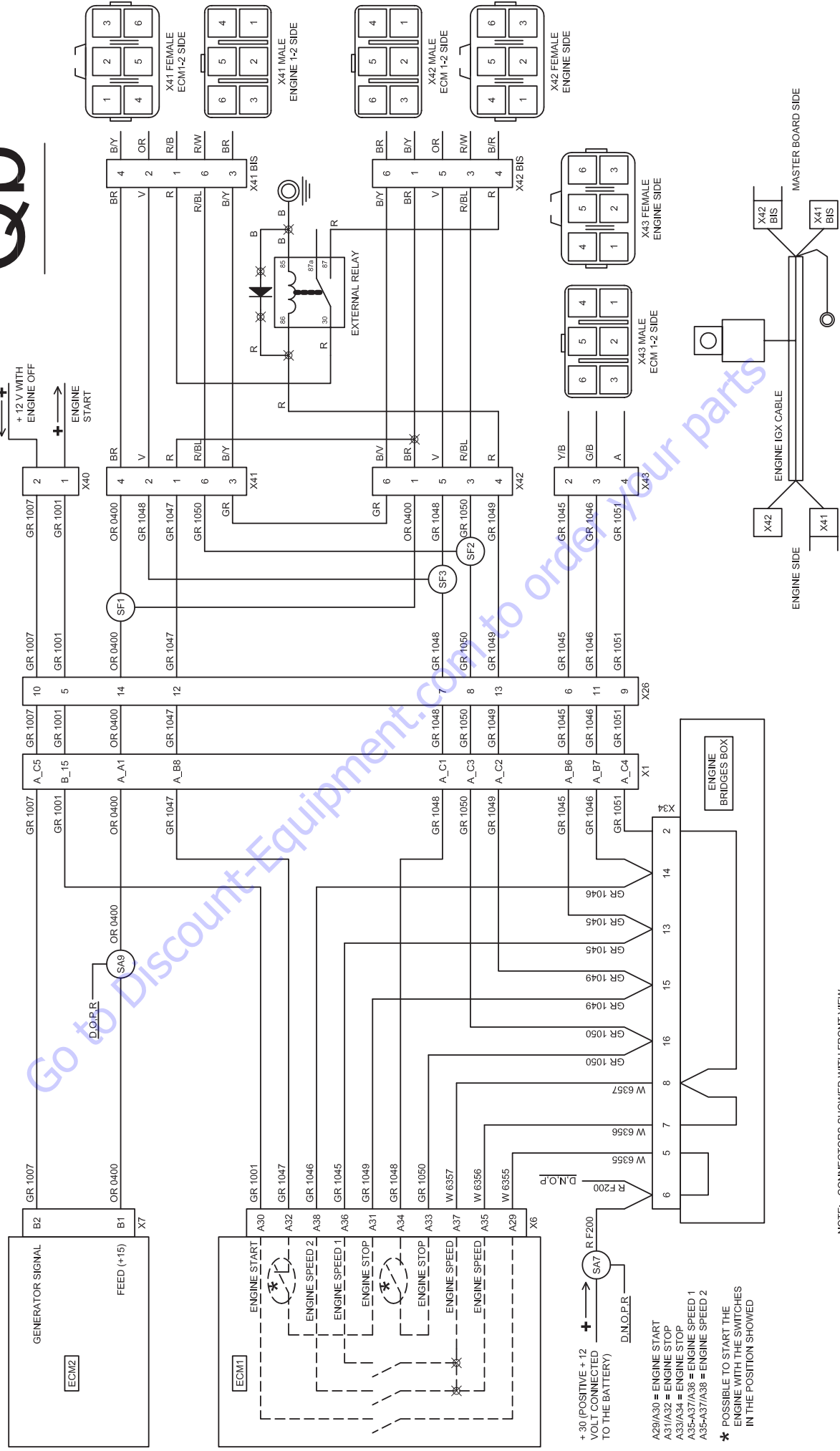
# ENGINE GASOLINE HONDA 1 CYLINDER



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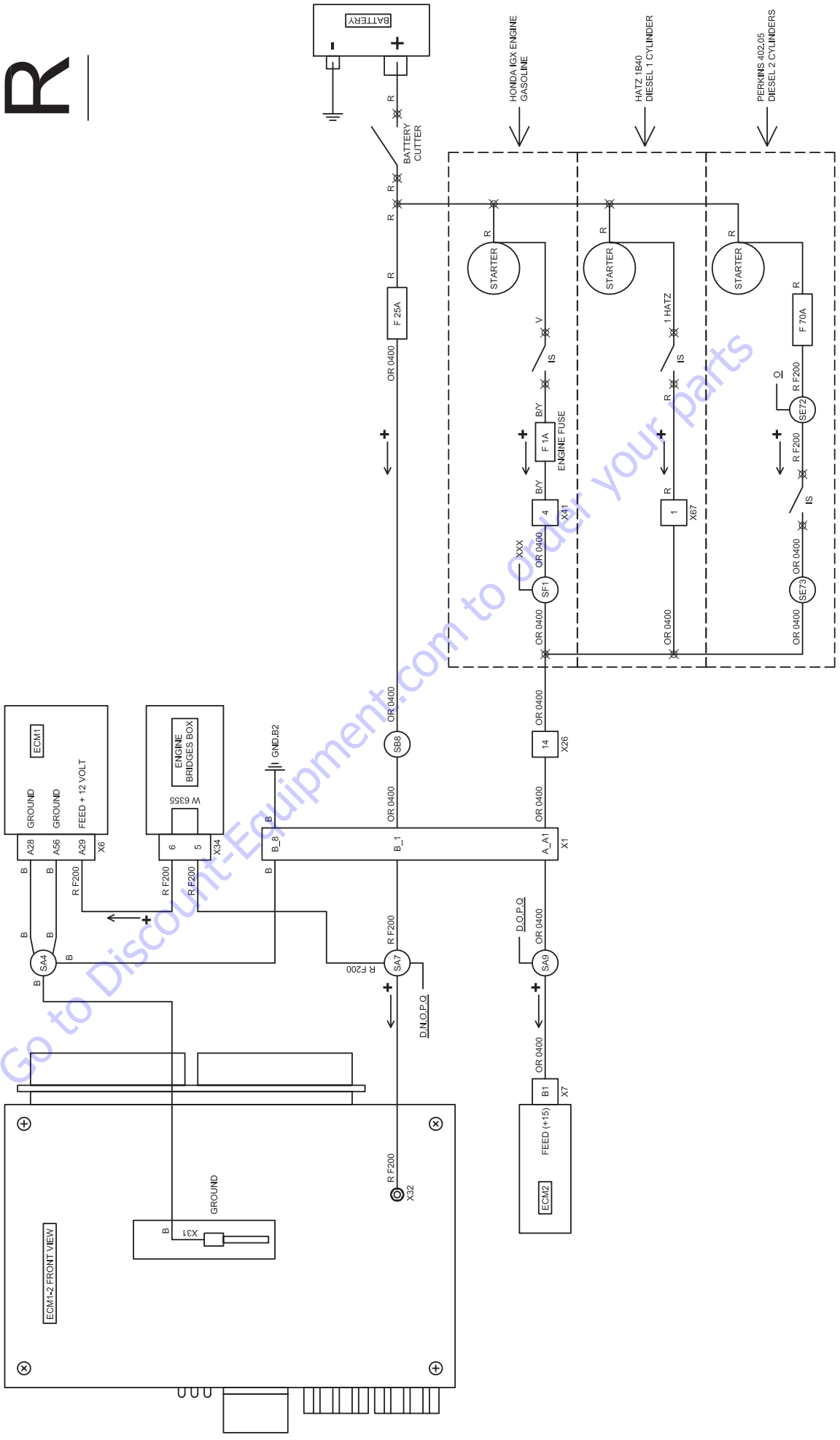
# ENGINE GASOLINE HONDA 1 CYLINDER

# Qb



NOTE: - CONNECTORS SHOWN WITH FRONT VIEW  
 - VALID FROM SERIAL NUMBERS 227L7 & 18320 OR IF EXTERNAL RELAY ADDED

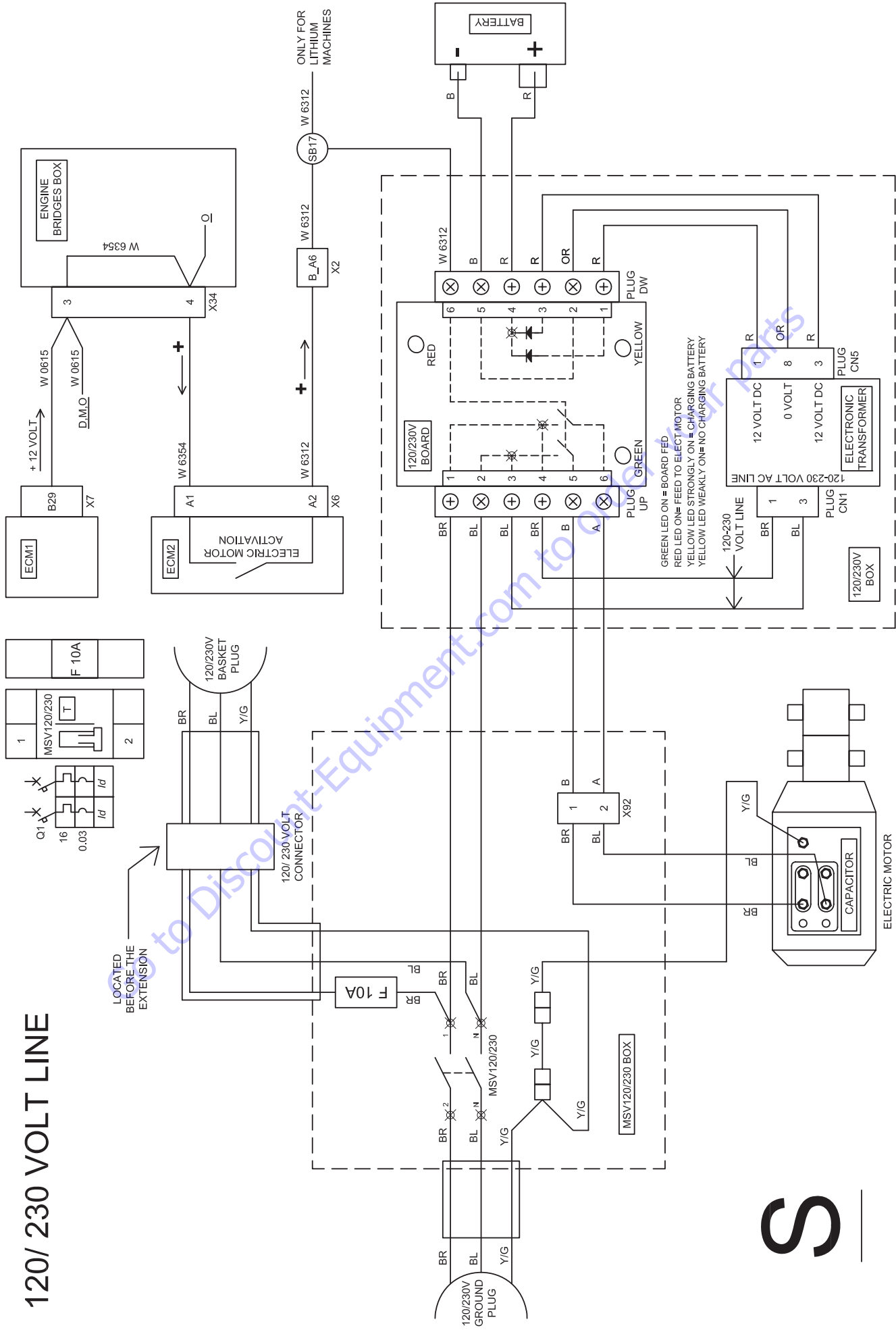
# 12 VOLT POWER SUPPLY



**R**

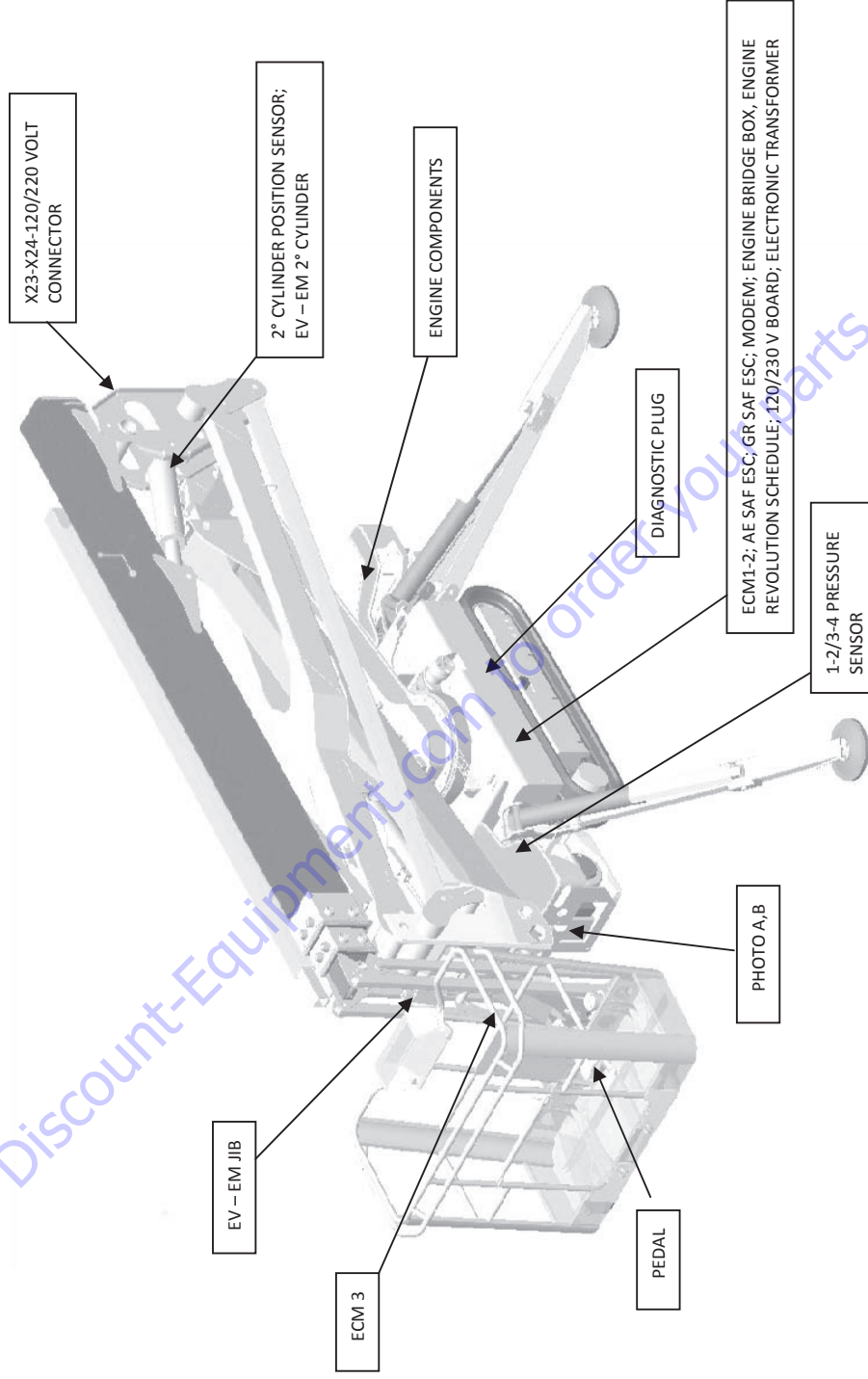
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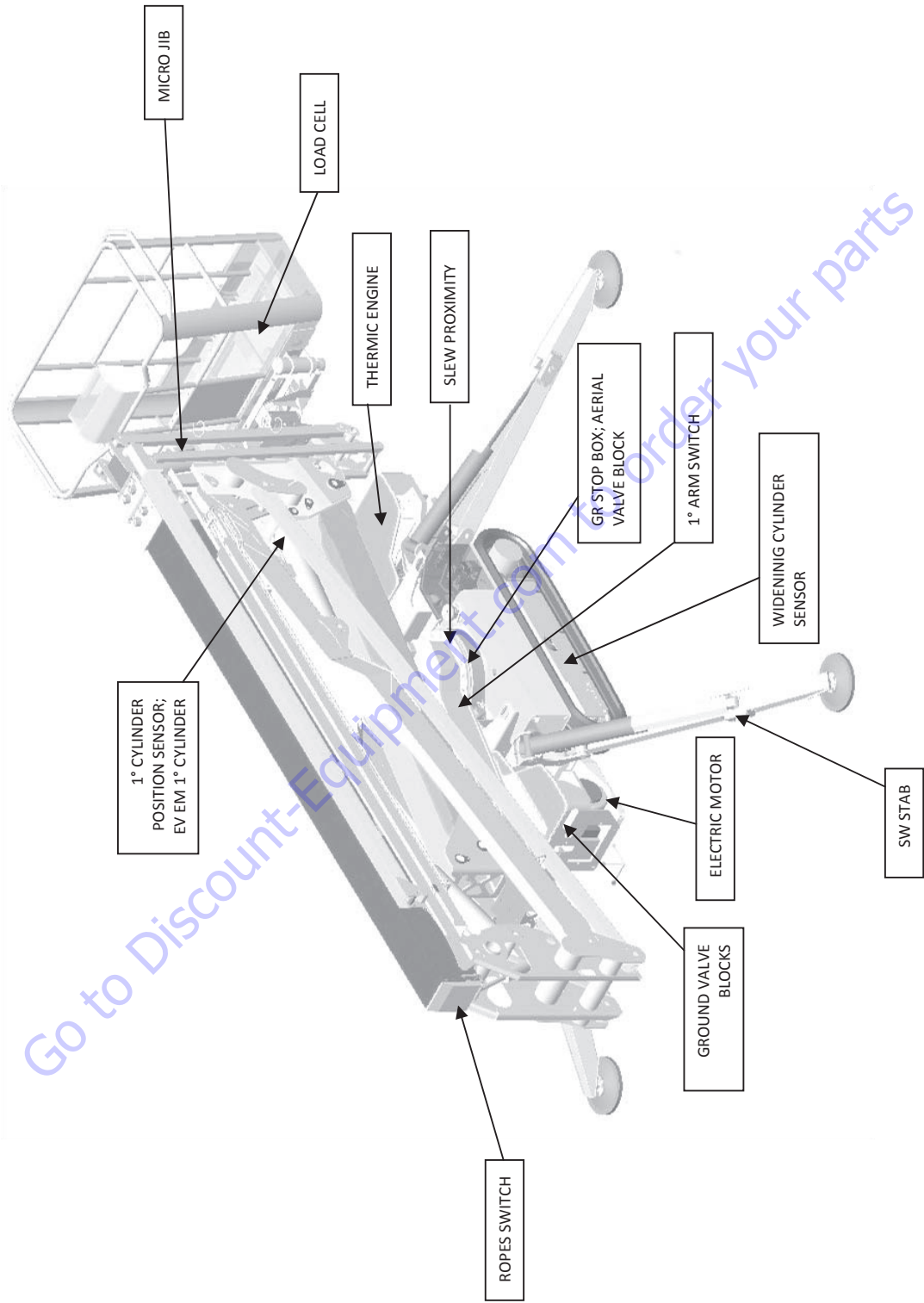
# 120/ 230 VOLT LINE





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





**U - COMPONENTS ABBREVIATION MEANING**  
**U - SIGNIFICATO ABBREVIAZIONI COMPONENTI**  
**U - SIGNIFICADO ABBREVIATURA COMPONENTES**  
**U - SIGNIFICACION ABBREVIATION COMPONENTS**

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 PRESION 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 GROUND PLUG	120/230 VOLT PLUG AT THE GROUND	PRESA 120/230 VOLT A TERRA	ENCHUFE 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 PRESION STABILIZADORES 3 Y 4	CAPTEUR PRESSION STABILISATEURS 3 ET 4
AE - PROP EV	AERIAL PART PROPORTIONAL ELECTRO VALVE	ELETTROVALVOLA PROPORZIONALE PARTE AEREA	ELECTROVALVULA PROPORCIONAL PARTE AEREA	ÉLECTROVANNE PROPORTIONNELLE PARTIE AÉRIENNE
AE SAF ESC	AERIAL SAFETY BYPASS KEY SWITCH	INTERRUTTORE A CHIAVE ESCLUSIONE SICUREZZE PARTE AEREA	INTERRUPTOR DE LLAVE EXCLUSION SEGURIDADES PARTE AEREA	INTERRUPTEUR EXCLUSION SECURITÉES PARTIE AÉRIENNE
BATTERY	BATTERY	BATTERIA	BATERIA	BATTERIE
CAN BUS CONNECTOR	GREEN CAN BUS CONNECTOR	CONNETTORE VERDE LINEA CAN BUS	CONECTOR VERDE CAN BUS	CAN BUS CONNECTEUR
CAPACTOR	CAPACITOR	CONDENSATORE	CANDENSADOR	CONDENSATEUR
CLACSON (OPTIONAL)	CLACSON	CLACSON	CLACSON	CLACSON
CONNECTOR	CONNECTOR	CONNETTORE	CONECTOR	CONNECTEUR
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 FRONTAL
ECM1-2 BOX	ELECTRONIC CONTROL MODULE 1-2 BOX	SCATOLA SCHEDA ELETTRONICA DI CONTROLLO 1 E 2	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 POSTERIEUR
ECM3	LOAD CELL BOARD	SCHEDA CELLA DI CARICO	TARJETA CELA DE CARGA	FICHE CELLULE DE CHARGEMENT

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN	DESCRIPTION
ELECTRIC MOTOR	ELECTRIC MOTOR	MOTORE ELETTTRICO	MOTOR ELECTRICO	MOTEUR ÉLECTRIQUE
ELECTRIC START	ELECTRIC MOTOR START PUSH BUTTON	PULSANTE AVVIAMENTO MOTORE ELETTTRICO	BOTON DE ARRANQUE MOTOR ELECTRICO	INTERRUPTEUR DE DÉMARRAGE THERMIQUE
ELECTRO STOP	ELECTRO STOP	ELETTRO STOP	ELECTRO STOP	ÉLECTROSTOP
ELECTRONIC TRANSFORMER	ELECTRONIC TRANSFORMER	TRASFORMATORE ELETTTRONICO	TRANSFORMADOR ELECTRONICO	TRANSFORMATEUR ÉLECTRONIQUE
ENGINE BRIDGE BOX	ENGINE ELECTRIC BRIDGE BOX	SCATOLA PONTI ELETTTRICI 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	RELAJ DEMARREUR MOTEUR
ENGINE VOLTAGE REGULATOR	ENGINE VOLTAGE REGULATOR	REGOLATORE DI TENSIONE MOTORE	REGOLADOR DE TENSION DEL MOTOR	CAPTEUR DES TOURS DU MOTEUR
ES HATZ	HATZ ELECTRONIC SCHEDULE	SCHEDA ELETTTRONICA HATZ	PLACA ELECTRONICA HATZ	FICHE ELECTRONIQUE HATZ
EV - 1° CYLINDER ( R )	1° CYLINDER ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF 1° CILINDRO (CHIUSURA)	ELECTROVALVULA ON-OFF 1° CILINDRO (CLAUSURA)	ÉLECTROVANNE ON-OFF 1° CYLINDRE (FERMETURE)
EV - 1° CYLINDER ( F )	1° CYLINDER ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF 1° CILINDRO (APERTURA)	ELECTROVALVULA ON-OFF 1° CILINDRO (APERTURA)	ÉLECTROVANNE ON-OFF 1° CYLINDRE (OUVERTURE)
EV - 2° CYLINDER ( R )	2° CYLINDER ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF 2° CILINDRO (CHIUSURA)	ELECTROVALVULA ON-OFF 2° CILINDRO (CLAUSURA)	ÉLECTROVANNE ON-OFF 2° CYLINDRE (FERMETURE)
EV - 2° CYLINDER ( F )	2° CYLINDER ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF 2° CILINDRO (APERTURA)	ELECTROVALVULA ON-OFF 2° CILINDRO (APERTURA)	ÉLECTROVANNE ON-OFF 2° CYLINDRE (OUVERTURE)
EV - 2° SPEED	TRACKS 2° SPEED ELECTRO VALVE	ELETTROVALVOLA 2° VELOCITA'	ELECTROVALVULA 2° VELOCIDAD	ÉLECTROVANNE 2EME VITESSE
EV - B LEV ( R ) NO LL14.72	BASKET LEVELLING ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF LIVELLAMENTO CESTO (CHIUSURA)	ELECTROVALVULA ON-OFF NIVELACION DE LA CESTA (CLAUSURA)	ÉLECTROVANNE ON-OFF NIVELAGE PANIER (FERMETURE)
EV - B LEV ( F )	BASKET LEVELLING ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF LIVELLAMENTO CESTO (APERTURA)	ELECTROVALVULA ON-OFF NIVELACION DE LA CESTA (APERTURA)	ÉLECTROVANNE ON-OFF NIVELAGE PANIER (OUVERTURE)
EV - B ROT ( R )	BASKET ROTATION ON-OFF ELECTRO VALVE (CLOCKWISE)	ELETTROVALVOLA ON-OFF ROTAZIONE CESTO (ORARIO)	ELECTROVALVULA ON-OFF ROTACION DE LA CESTA (HORARIO)	ÉLECTROVANNE ON-OFF ROTATION PANIER (HORAIRE)
EV - B ROT ( F ) NO LL14.72	BASKET ROTATION ON-OFF ELECTRO VALVE (ANTI CLOCKWISE)	ELETTROVALVOLA ON-OFF ROTAZIONE CESTO (ANTI ORARIO)	ELECTROVALVULA ON-OFF ROTACION DE LA CESTA (ANTI HORARIO)	ÉLECTROVANNE ON-OFF ROTATION PANIER (ANTI-HORAIRE)
EV - DEV	ELECTRIC DIVERTER	ELETTROVALVOLA DEVIATRICE	ELECTROVALVULA PROPORCIONAL AEREA	ÉLECTROVANNE DEVIATRICE
EV - EM 1° CYLINDER VALVE	1° CYLINDER EMERGENCY DESCEND ELECTRO VALVE	ELETTROVALVOLA DISCESA DI EMERGENZA 1° CILINDRO	ELECTROVALVULA BAJADA DE EMERGENCIA 1° CILINDRO	ÉLECTROVANNE DESCENTE D'URGENCE 1ER CYLINDRE

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCION	DESCRIPTION
EV - EM 2° CYLINDER	2° CYLINDER EMERGENCY DESCEND ELECTRO VALVE	ELETTROVALVOLA DISCESA DI EMERGENZA 2° CILINDRO	ELECTROVALVULA BAJADA DE EMERGENCIA 2° CILINDRO	ÉLECTROVANNE DESCENTE D'URGENCE 2EME CYLINDRE
EV - EM JIB	JIB EMERGENCY DESCEND ELECTRO VALVE	ELETTROVALVOLA DISCESA DI EMERGENZA JIB	ELECTROVALVULA BAJADA DE EMERGENCIA JIB	ÉLECTROVANNE DESCENTE D'URGENCE JIB
EV - EXT ( R )	EXTENSION ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF SFILLO (CHIUSURA)	ELECTROVALVULA ON-OFF TELESCOPICO (CLAUSURA)	ÉLECTROVANNE ON-OFF BRAS D'EXTRACTION (FERMETURE)
EV - EXT ( F )	EXTENSION ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF SFILLO (APERTURA)	ELECTROVALVULA ON-OFF TELESCOPICO (APERTURA)	ÉLECTROVANNE ON-OFF BRAS D'EXTRACTION (OUVERTURE)
EV - JIB ( R )	JIB ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF JIB (CHIUSURA)	ELECTROVALVULA ON-OFF JIB (CLAUSURA)	ÉLECTROVANNE ON-OFF JIB (FERMETURE)
EV - JIB ( F )	JIB ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF JIB (APERTURA)	ELECTROVALVULA ON-OFF JIB (APERTURA)	ÉLECTROVANNE ON-OFF JIB (OUVERTURE)
EV - ROT ( R )	ROTATION ON-OFF ELECTRO VALVE (CLOCKWISE)	ELETTROVALVOLA ON-OFF ROTAZIONE (ORARIO)	ELECTROVALVULA ON-OFF ROTACION (HORARIO)	ÉLECTROVANNE ON-OFF ROTATION (HORAIRES)
EV - ROT ( F )	ROTATION ON-OFF ELECTRO VALVE (ANTI CLOCKWISE)	ELETTROVALVOLA ON-OFF ROTAZIONE (ANTI ORARIO)	ELECTROVALVULA ON-OFF ROTACION (ANTI HORARIO)	ÉLECTROVANNE ON-OFF ROTATION (ANTI-HORAIRE)
EV - STAB 1 ( R )	LEFT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF STABILIZZATORE ANTERIORE SINISTRO (CHIUSURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR DELANTERO IZQUIERDO (CLAUSURA)	ÉLECTROVANNE ON-OFF STABILISATEUR ANTERIEUR GAUCHE (FERMETURE)
EV - STAB 1 ( F )	LEFT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF STABILIZZATORE ANTERIORE SINISTRO (APERTURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR DELANTERO IZQUIERDO (APERTURA)	ÉLECTROVANNE ON-OFF STABILISATEUR ANTERIEUR GAUCHE (OUVERTURE)
EV - STAB 2 ( R )	LEFT REAR OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF STABILIZZATORE POSTERIORE SINISTRO (CHIUSURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR TRASERO IZQUIERDO (CLAUSURA)	ÉLECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (OUVERTURE)
EV - STAB 2 ( F )	LEFT REAR OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF STABILIZZATORE POSTERIORE SINISTRO (APERTURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR TRASERO IZQUIERDO (APERTURA)	ÉLECTROVANNE ON-OFF STABILISATEUR POSTERIEUR GAUCHE (OUVERTURE)
EV - STAB 3 ( R )	RIGHT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF STABILIZZATORE ANTERIORE DESTRO (CHIUSURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR DELANTERO DERECHO (CLAUSURA)	ÉLECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROIT (FERMETURE)
EV - STAB 3 ( F )	RIGHT FRONT OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF STABILIZZATORE ANTERIORE DESTRO (APERTURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR DELANTERO DERECHO (APERTURA)	ÉLECTROVANNE ON-OFF STABILISATEUR ANTERIEUR DROITE (OUVERTURE)
EV - STAB 4 ( R )	RIGHT REAR OUTRIGGER ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF STABILIZZATORE POSTERIORE DESTRO (CHIUSURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR TRASERO DERECHO (CLAUSURA)	ÉLECTROVANNE ON-OFF STABILISATEUR POSTERIEUR DROITE (FERMETURE)
EV - STAB 4 ( F )	RIGHT REAR OUTRIGGER ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF STABILIZZATORE POSTERIORE DESTRO (APERTURA)	ELECTROVALVULA ON-OFF ESTABILIZADOR TRASERO DERECHO (APERTURA)	ÉLECTROVANNE ON-OFF STABILISATEUR POSTERIEUR DROITE (OUVERTURE)
EV - TR CLOSING	UNDERCARRIAGE WIDENING ON-OFF ELECTRO VALVE (CLOSING)	ELETTROVALVOLA ON-OFF ALLARGAMENTO CARRO (CHIUSURA)	ELECTROVALVULA ON-OFF EXTENSION DEL CARRO (CLAUSURA)	ÉLECTROVANNE ON-OFF ÉLARGISSEMENT CHENILLARD (FERMETURE)
EV - TR L ( R )	LEFT TRACK ON-OFF ELECTRO VALVE (REAR)	ELETTROVALVOLA ON-OFF CINGOLO SINISTRO (INDIETRO)	ELECTROVALVULA ON-OFF ORUGA IZQUIERDA (ATRAS)	ÉLECTROVANNE ON-OFF CHENILLE GAUCHE (EN ARRIERE)
EV - TR L ( F )	LEFT TRACK ON-OFF ELECTRO VALVE (FRONT)	ELETTROVALVOLA ON-OFF CINGOLO SINISTRO (AVANTI)	ELECTROVALVULA ON-OFF ORUGA IZQUIERDA (ADELANTE)	ÉLECTROVANNE ON-OFF CHENILLE GAUCHE (EN AVANT)
EV - TR OPENING	UNDERCARRIAGE WIDENING ON-OFF ELECTRO VALVE (OPENING)	ELETTROVALVOLA ON-OFF ALLARGAMENTO CARRO (APERTURA)	ELECTROVALVULA ON-OFF EXTENSION DEL CARRO (APERTURA)	ÉLECTROVANNE ON-OFF ÉLARGISSEMENT CHENILLARD (OUVERTURE)
EV - TR R ( R )	RIGHT TRACK ON-OFF ELECTRO VALVE (REAR)	ELETTROVALVOLA ON-OFF CINGOLO DESTRO (INDIETRO)	ELECTROVALVULA ON-OFF ORUGA DERECHA (ATRAS)	ÉLECTROVANNE ON-OFF CHENILLE DROITE (EN ARRIERE)
EV - TR R ( F )	RIGHT TRACK ON-OFF ELECTRO VALVE (FRONT)	ELETTROVALVOLA ON-OFF CINGOLO DESTRO (AVANTI)	ELECTROVALVULA ON-OFF ORUGA DERECHA (ADELANTE)	ÉLECTROVALVOLA ON-OFF CINGOLO DESTRO (AVANTI)
F 25 A	25 A FUSE (FLY)	FUSIBILE 25 A (VOLANTE)	FUSIBLE 25 A (VOLANTE)	FUSIBLE 25 A (VOLANT)
F N°	FUSE NUMBER	NUMERO DEL FUSIBILE	NÚMERO DEL FUSIBLE	FICHE' MICRO RELAY

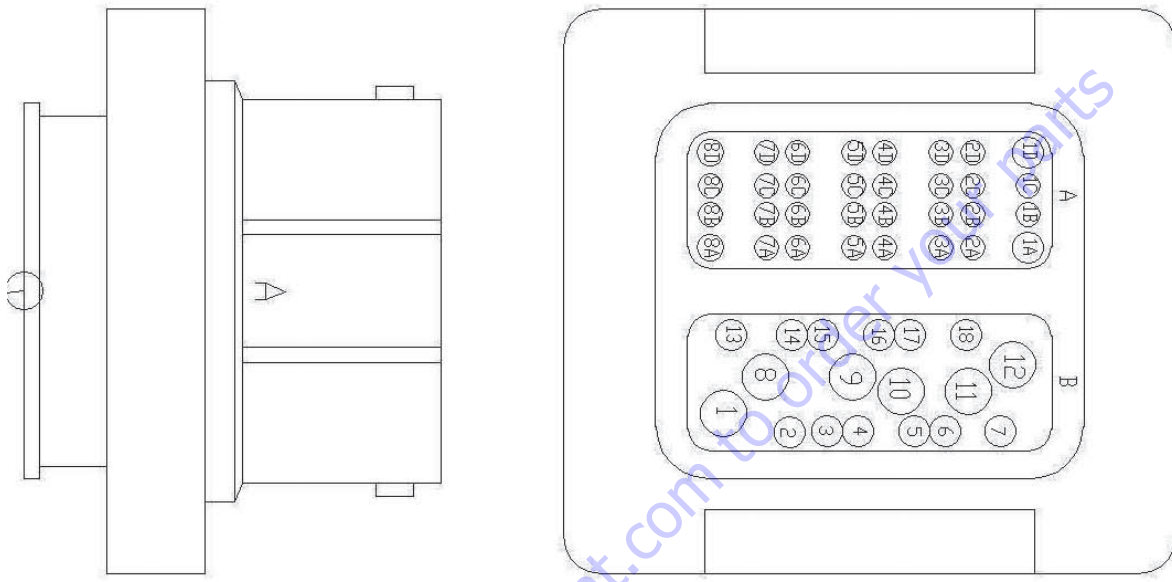
NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCION	DESCRIPTION
GR SAF ESC	GROUND SAFETY BYPASS KEY SWITCH	INTERRUTTORE A CHIAVE ESCLUSIONE SICUREZZE PARTE CARRO	INTERRUPUTOR DE LLAVE EXCLUSION SEGURIDADES PARTE DE TIERRA	INTERRUPTEUR EXCLUSION SECURITÉES PARTIE TERRE
GR STAB LAMP	MACHINE STABILIZED GROUND LAMP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

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCION	DESCRIPTION
PRE HEATING RELE'	PRE HEATING RELE'	RELE' PRE RISCALDO	RELE PRE CALEFACION	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 (OPTIONAL)	REMOTE CONTROL SELECTOR - UP OR DOWN (OPTIONAL)	SELETORE TELECOMANDO - SOPRA O SOTTO (OPTIONAL)	SELECTOR DEL MANDO - ARRIBA O ABAJO (OPTIONAL)	SÉLECTEUR TÉLÉCOMMANDE - DESSUS OU DESSOUS (COMME OPTION)
RIGHT - PROP EV	RIGHT SIDE PROPORTIONAL ELECTRO VALVE	ELETTROVALVOLA PROPORZIONALE PARTE A TERRA DESTRA	ELECTROVALVULA PROPORCIONAL PARTE DE TIERRA 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 PROXIMITY RALLA	SENSOR PROXIMITY ROTACION	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 ANTERIEUR GAUCHE
SW STAB 2	REAR LEFT OURIGGER SWITCH	INTERRUTTORE STABILIZZATORE POSTERIORE SINISTRO	INTERRUPTOR ESTABILIZADOR TRASERO IZQUIERDO	INTERRUPTEUR STABILISATEUR POSTÉRIEUR GAUCHE
SW STAB 3	FRONT RIGHT OUTRIGGER SWITCH	INTERRUTTORE STABILIZZATORE ANTERIORE DESTRO	INTERRUPTOR ESTABILIZADOR DELANTERO DERECHO	INTERRUPTEUR STABILISATEUR ANTERIEUR DROIT
SW STAB 4	REAR RIGHT OUTRIGGER SWITCH	INTERRUTTORE STABILIZZATORE POSTERIORE DESTRO	INTERRUPTOR ESTABILIZADOR TRASERO 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 ACOUSTIQUE
WATER TEMPERATURE SENSOR	WATER COOLING TEMPERATURE SENSOR	SENSORE TEMPERATURA ACQUA MOTORE	SENSOR TEMPERATURA AGUA MOTOR	CAPTEUR TEMPERATURE EAU MOTEUR
WIDENING CYLINDER SENSOR	WIDENING CYLINDER POSITION SENSOR	SENSORE POSIZIONE CILINDRO CARRO	SENSOR POSICION CILINDRO ORUGAS	CAPTEUR POSITION CHENILLES

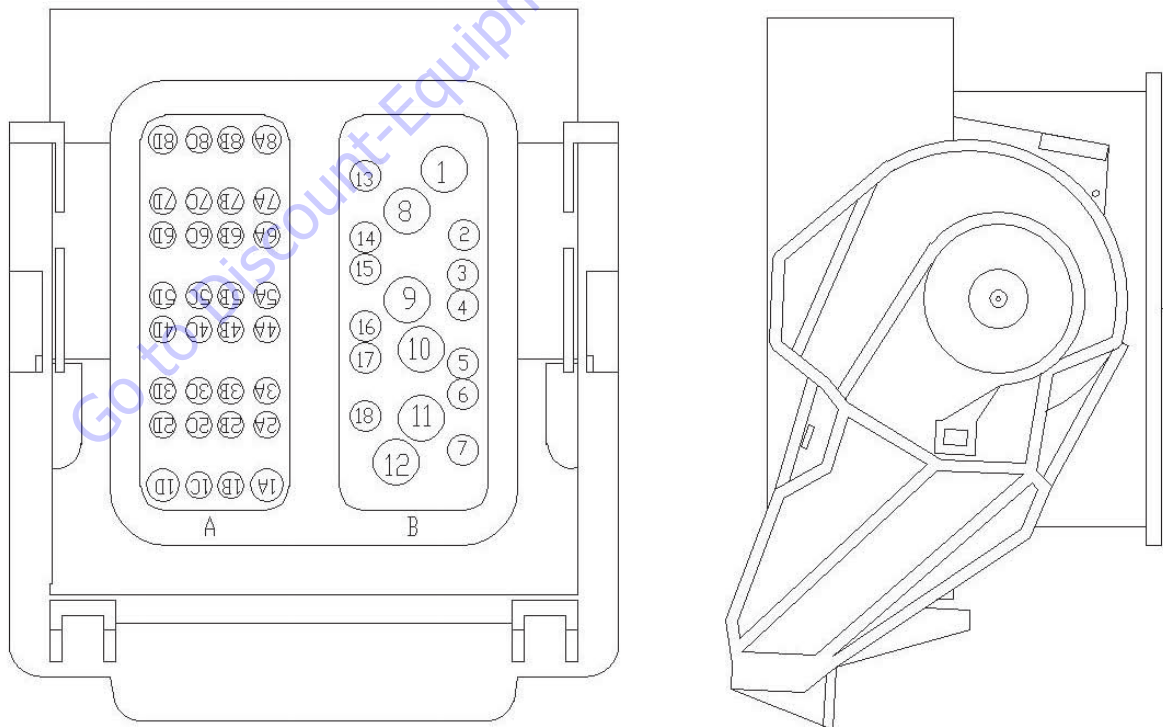


**V—CONNECTORS LAYOUT**  
**V—LAYOUT CONNETTORI**  
**V—LAYOUT CONECTORES**  
**V—LAYOUT CONNECTEURS**

**X1**



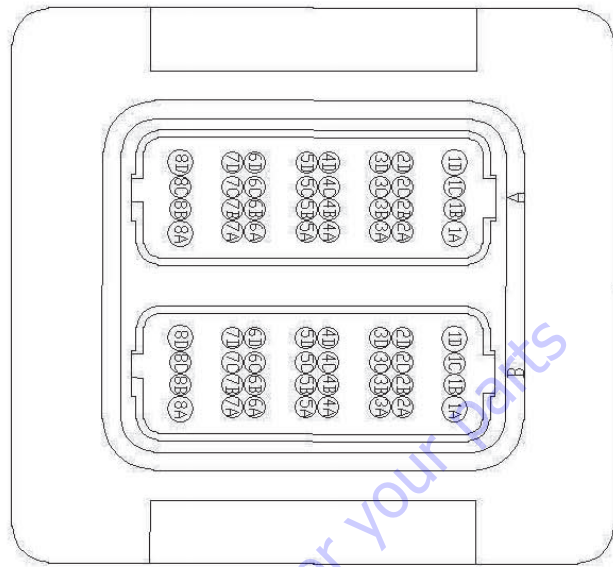
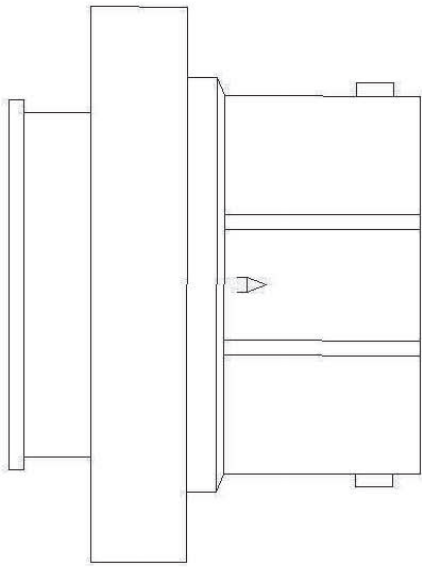
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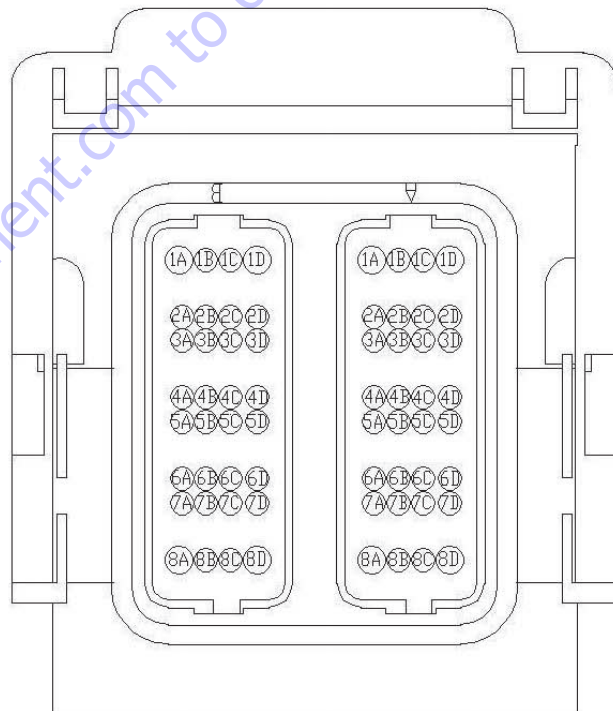
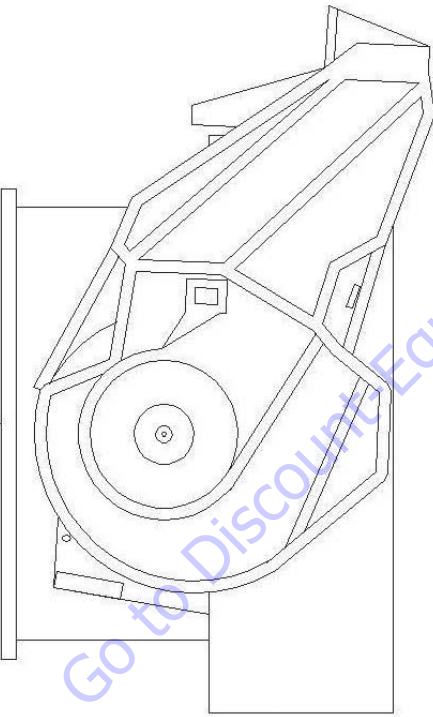
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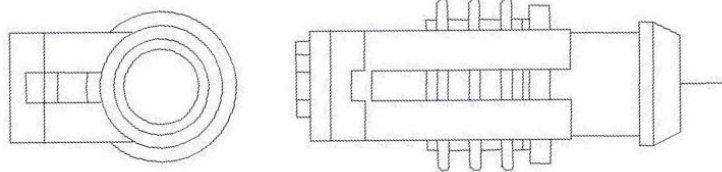


ECM1-2 SIDE

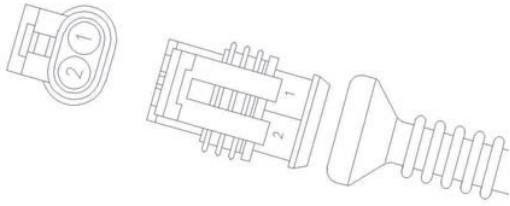


CHASSIS SIDE

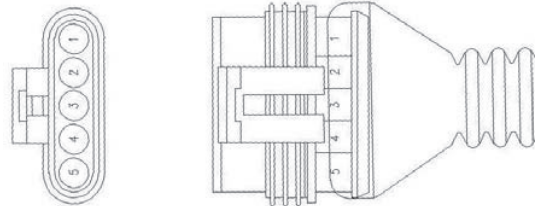
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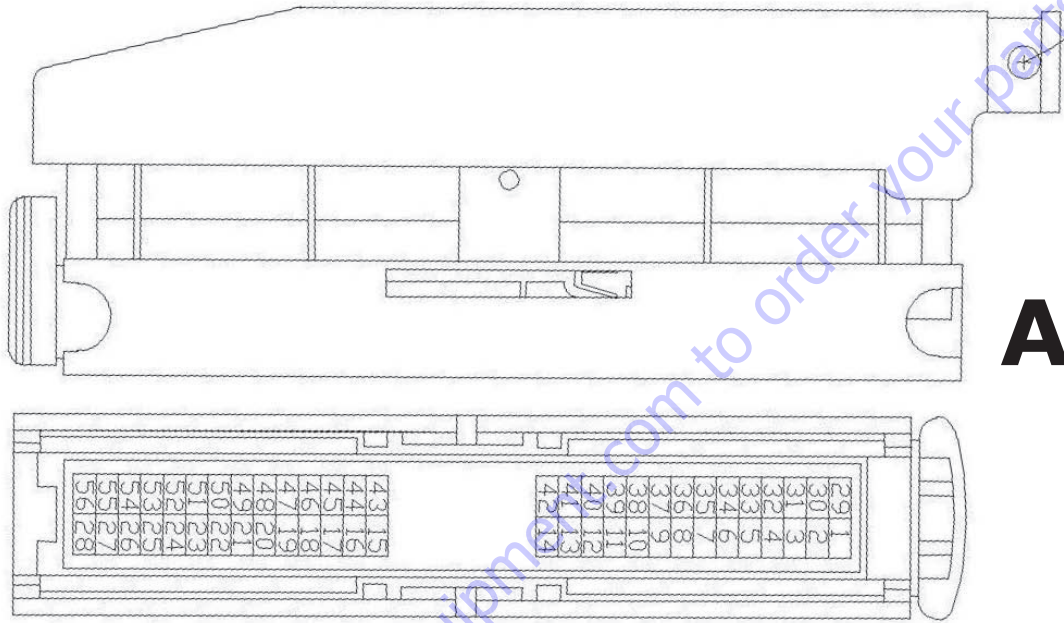
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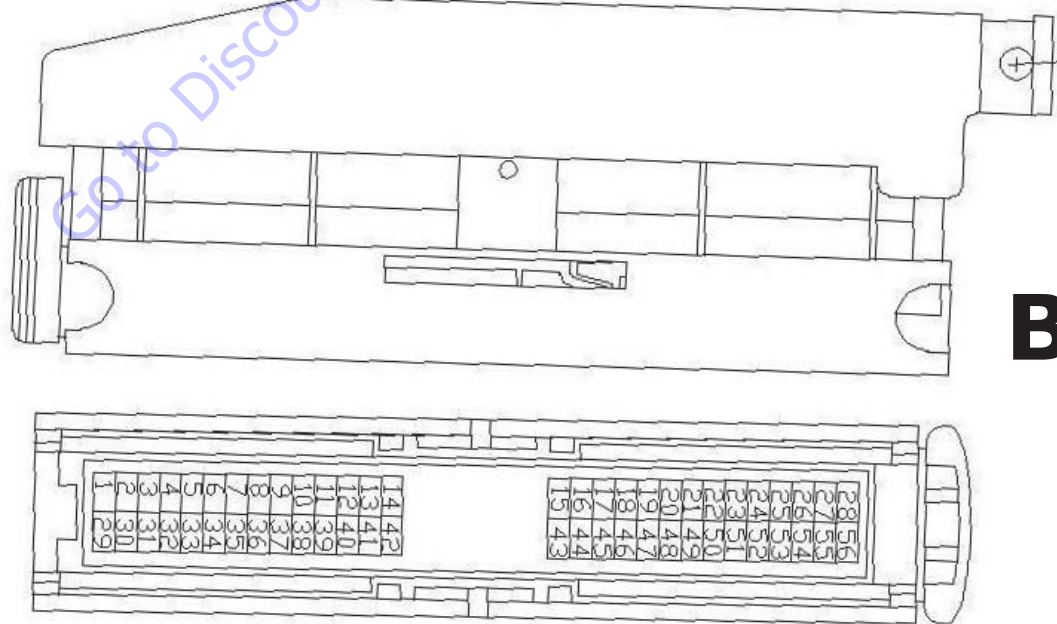
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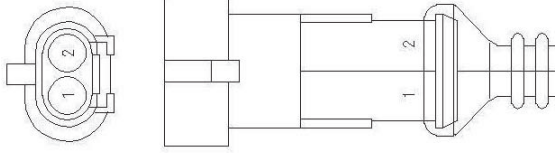
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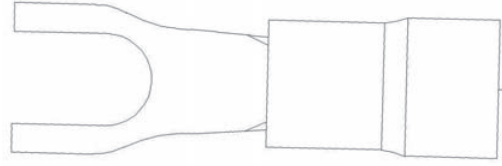
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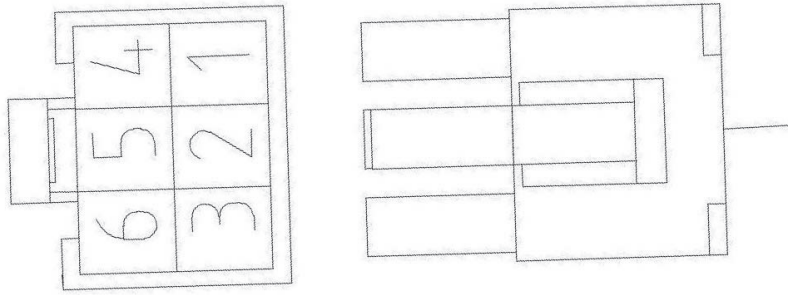
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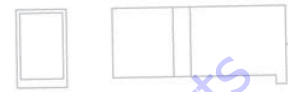
**X14;102;103**



**X16**



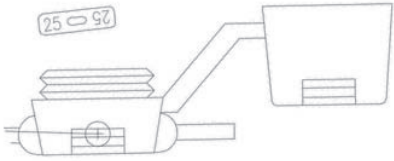
**X17;55**



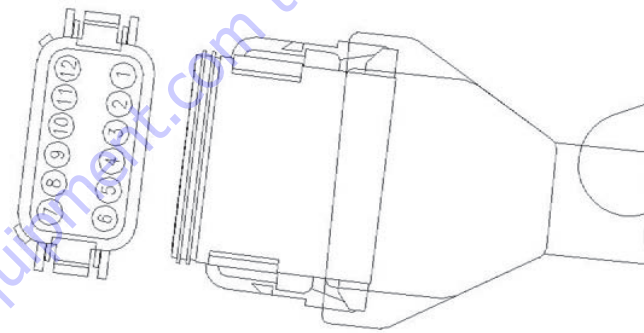
**X19;32;50;56**



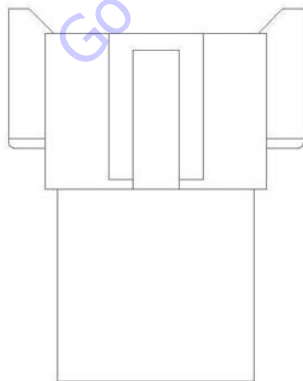
**X18**



**X22**

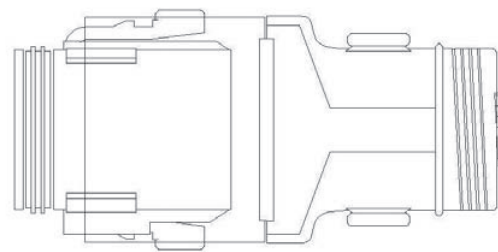
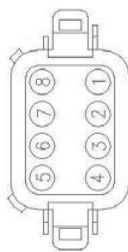


**X23**



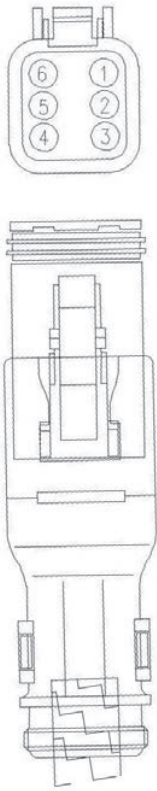
**MALE**

**FEMALE**

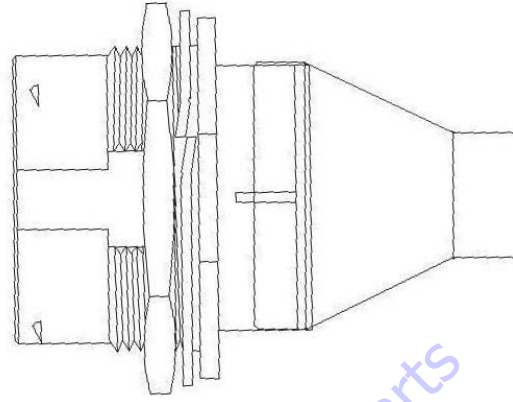
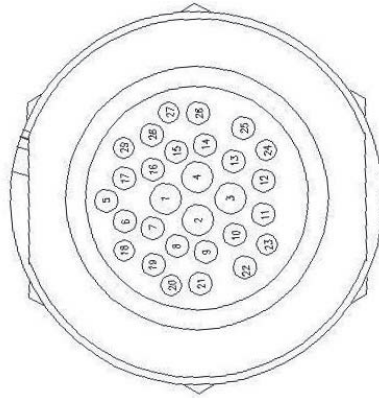


**FEMALE**

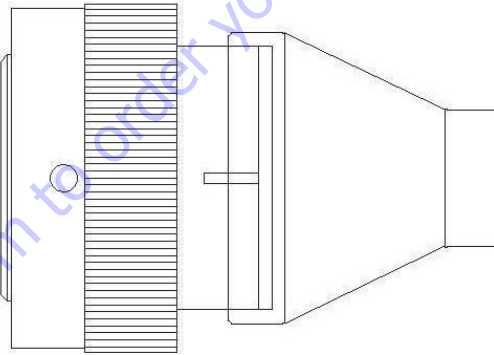
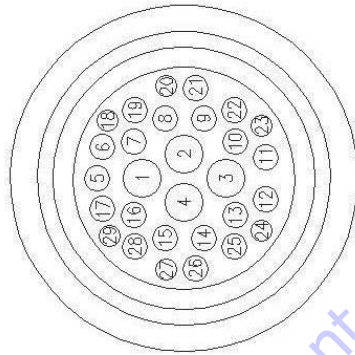
**X24**



**X26**

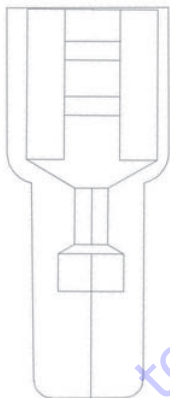


MALE

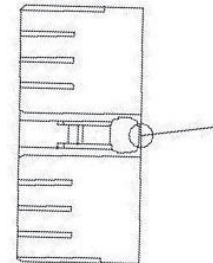
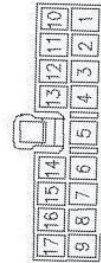
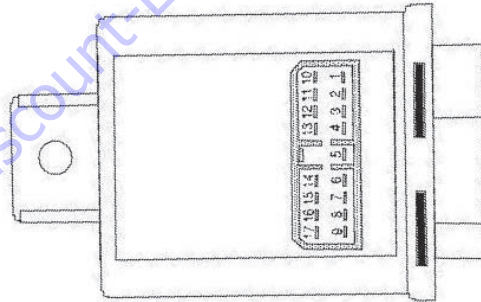


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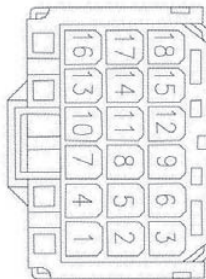
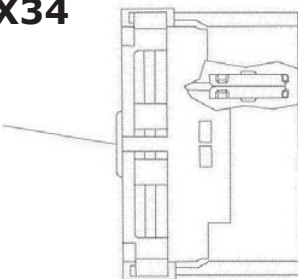
**X31**



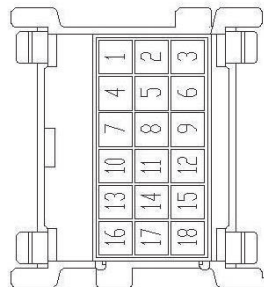
**X33**



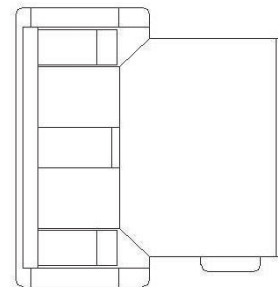
**X34**



MALE

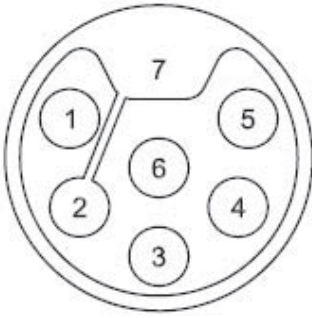


FEMALE

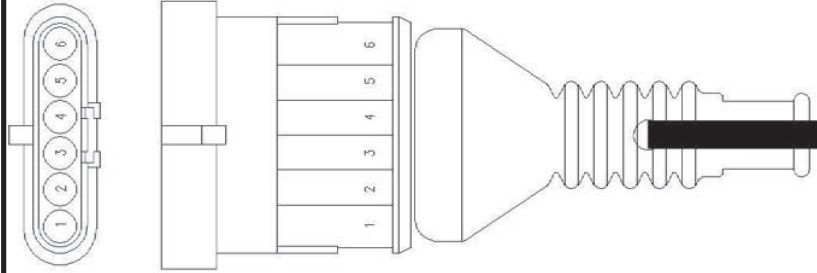




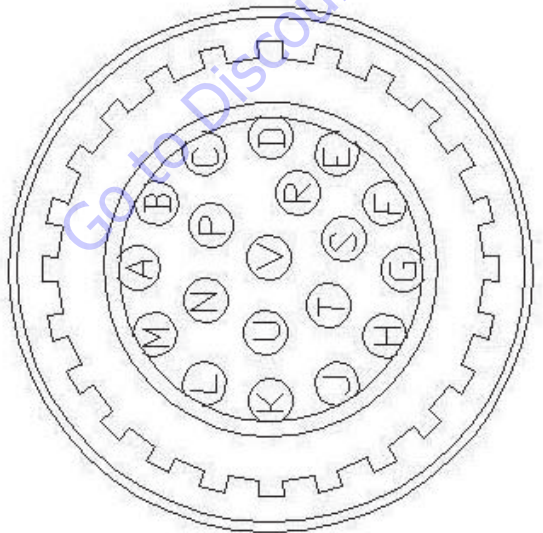
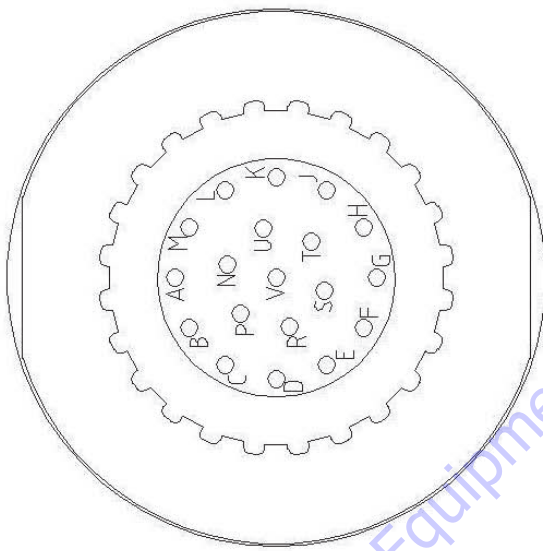
**X27;43**



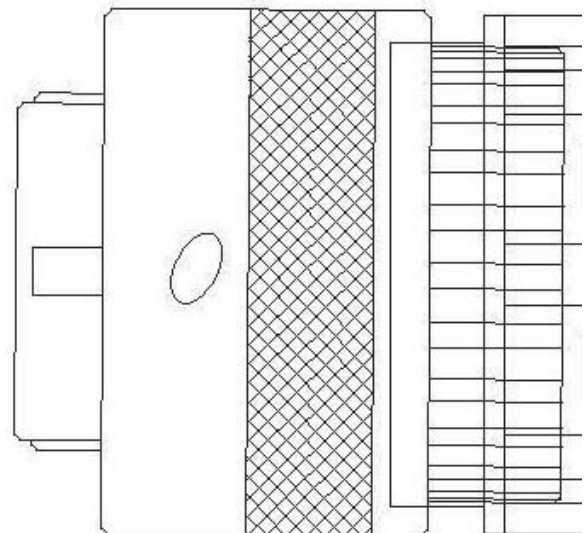
**X36;100;150**



**X37**

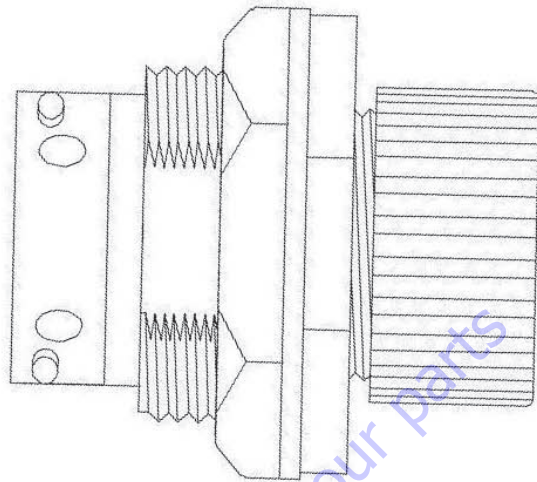
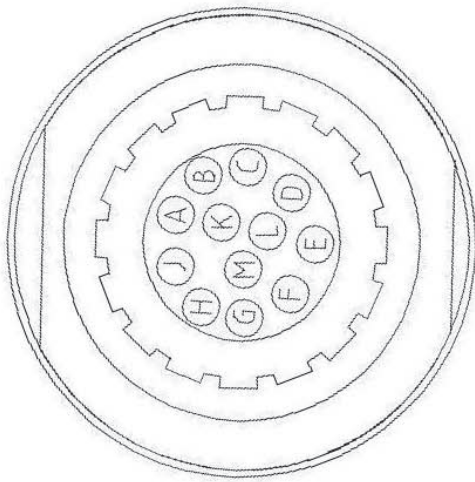


MALE

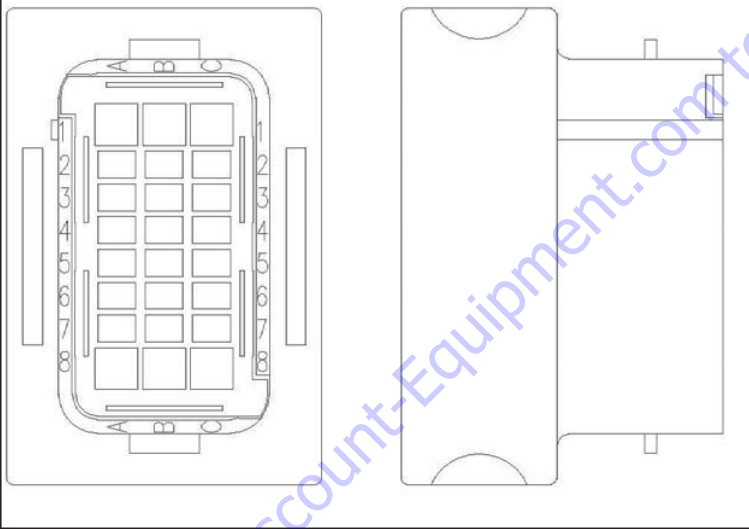


FEMALE

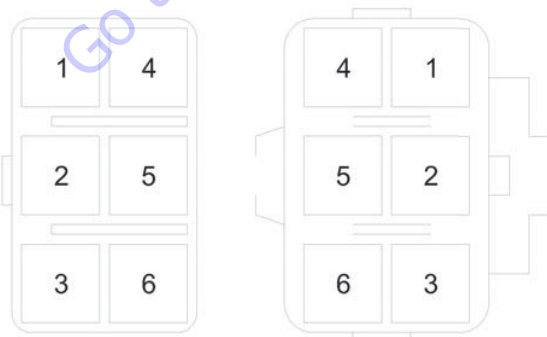
**X39**



**X40**



**X41**

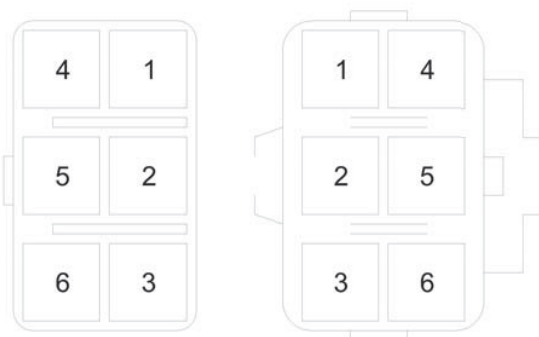


MALE

FEMALE

FRONT VIEW

**X42;43**

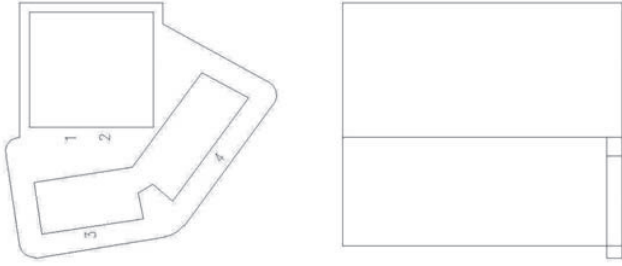


MALE

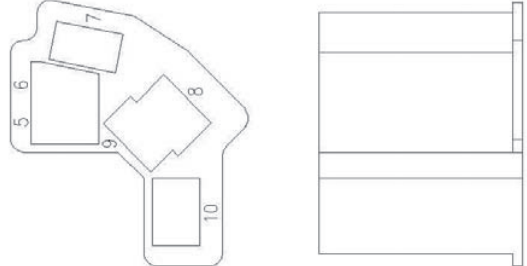
FEMALE

FRONT VIEW

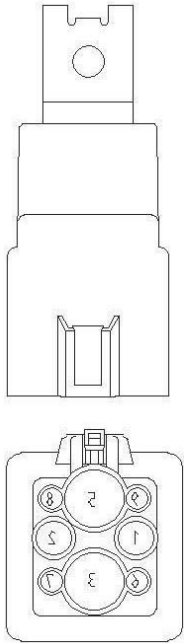
**X57.1**



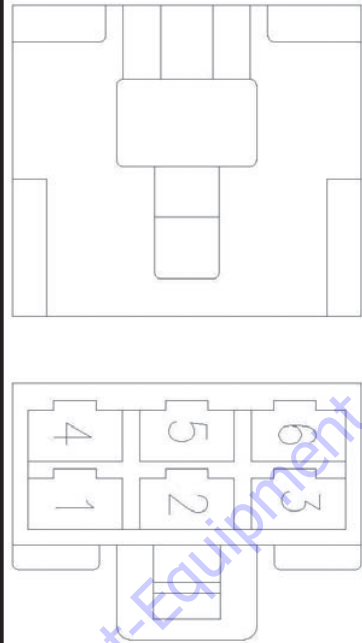
**X57.2**



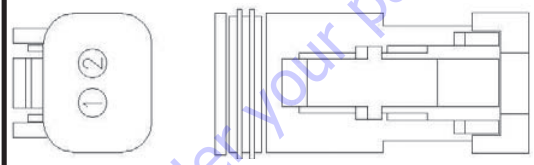
**X58;59**



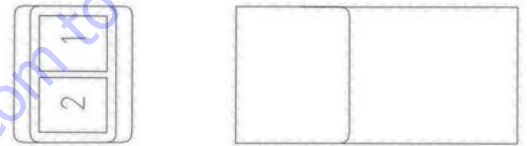
**X60**



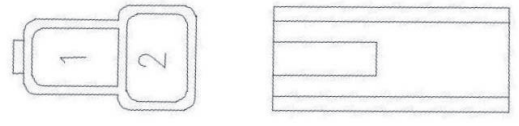
**X63;64**



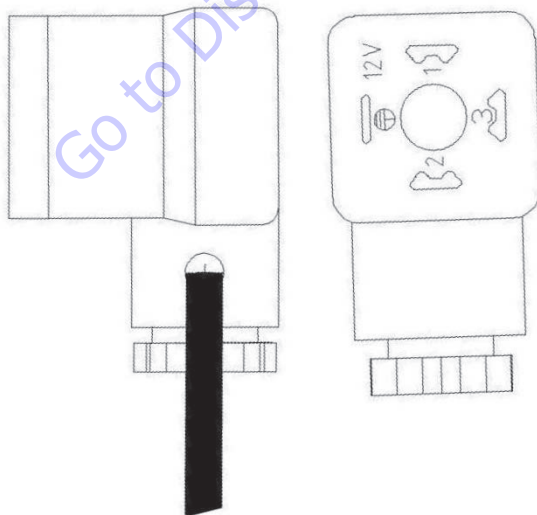
**X92**



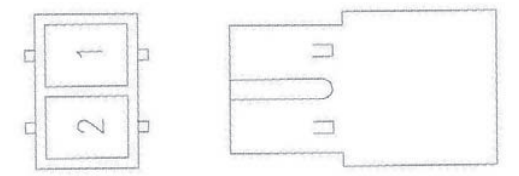
**X101**



**EV COILS**

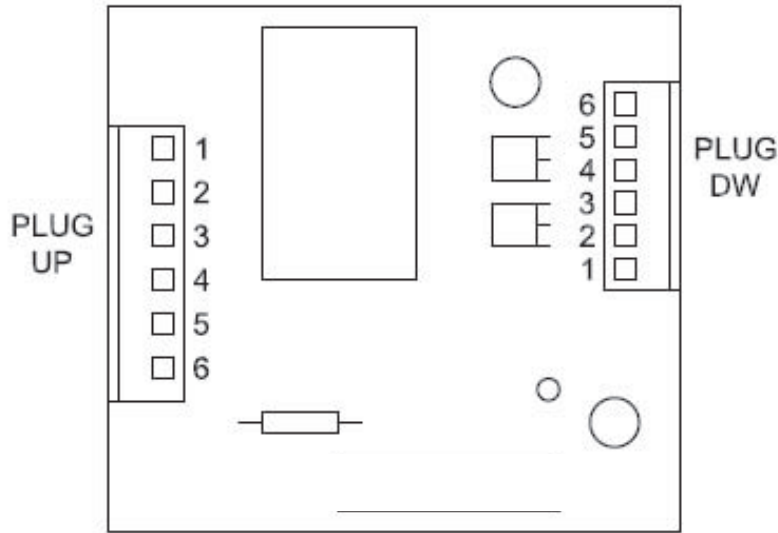


**X104;105**

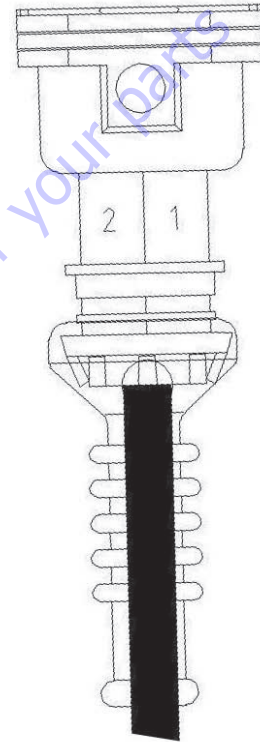
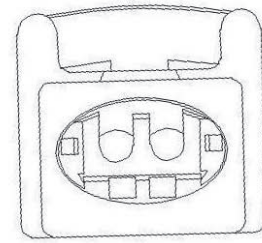


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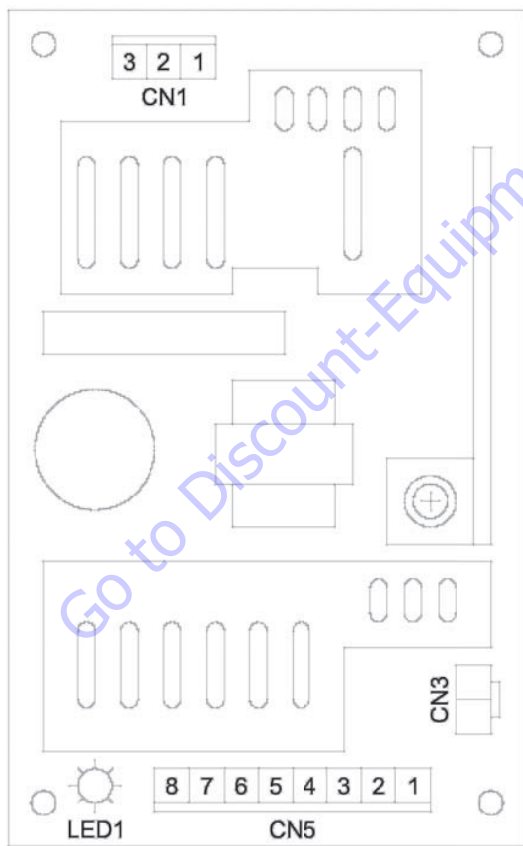
### 120/230 V BOARD



### EV EMERGENCY



### ELECTRONIC TRANSFORMER





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

HINOWA LIGHTLIFT 17.75

DESCRIPTION - DESCRIZIONE - DESCRIPCION - DESCRIPTION

PAGE	DESCRIPTION	DESCRIZIONE	DESCRIPCION
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	CONNECTORES 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	CONNECTEURS BMS

Y - CAN BUS SYSTEM  
 Y - SISTEMA CAN BUS  
 Y - SISTEMA CAN BUS  
 Y - SYSTÈME CAN BUS

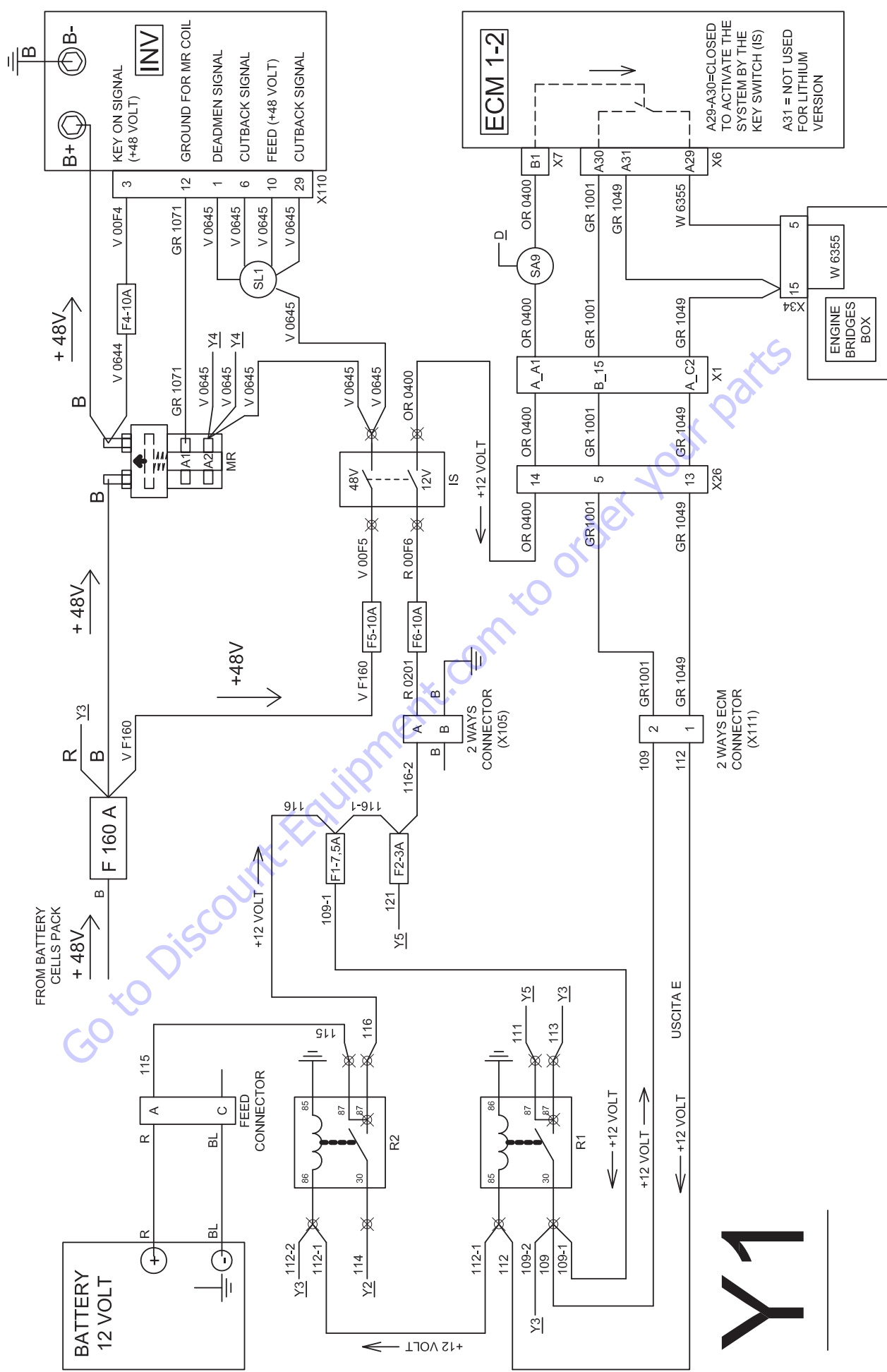
NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN
AUXILIARY CAN CONNECTOR	CAN CONNECTOR FOR DIAGNOSTIC	CONNETTORE CAN PER DIAGNOSI	CONNECTOR CAN PARA DIAGNOSTICO
AUXILIARY CAN PLUG	PLUG CAN FOR DIAGNOSTIC	PRESA CAN PER DIAGNOSI	ENCHUFE CAN PARA DIAGNOSTICO
BATTERY 12 VOLT	BATTERY 12 VOLT	BATTERIA 12 VOLT	BATERIA 12 VOLT
BC	BATTERY CHARGER	CARICABATTERIE	CARGADOR DE BATERIAS
BMS	BATTERY MANAGEMENT SYSTEM	BATTERY MANAGEMENT SYSTEM	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	CAN BUS LINE BRIDGE BOX	SCATOLA PONTE LINEA CAN BUS	CAJA PUENTE LINEA CAN BUS
CONNECTOR	CONNECTOR	CONNETTORE	CONNECTOR
INTERNAL CONTACTOR	CONTACTOR IN THE CELLS BOX	CONTATTORE NEL PACCO BATTERIE	CONTACTOR EN EL PAQUETE BATERIAS
DC-DC	48-72V/12V FEEDER	ALIMENTATORE 48-72V/12V	ALIMENTADOR 48-72V/12V
ECM1-2	ELECTRONIC CONTROL MODULE 1-2	SCHEDA ELETTRONICA DI CONTROLLO 1-2	TARJETA DE CONTROL 2
F N°	FUSE	FUSIBILE	FUSIBLE
FRONT FAN	BATTERY BOX FRONT FANS	VENTOLE FRONTALE VANO BATTERIE	PANTALLA DELANTERA PAQUETE BATERIAS
INV	INVERTER	INVERTER	INVERTER
IS	IGNITION KEY SWITCH	INTERRUTTORE A CHIAVE MOTORE	INTERRUTTORE A LLAVE MOTOR
LEM SENSOR	LEM SENSOR	SENSORE LEM	SENSOR LEM
MOTOR	ELECTRIC MOTOR	MOTORE ELETTRICO	MOTOR ELECTRICO
MR	MAIN RELE*	RELE PRINCIPALE	RELE* PRINCIPAL
R N°	RELAY	RELE*	RELE*
REAR FAN	BATTERY BOX REAR FAN	VENTOLA POSTERIORE VANO BATTERIE	PANTALLA TRASERA PAQUETE BATERIAS

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



Go to Discount-Equipment.com to order Your parts

# Y1

**ECM 1-2**

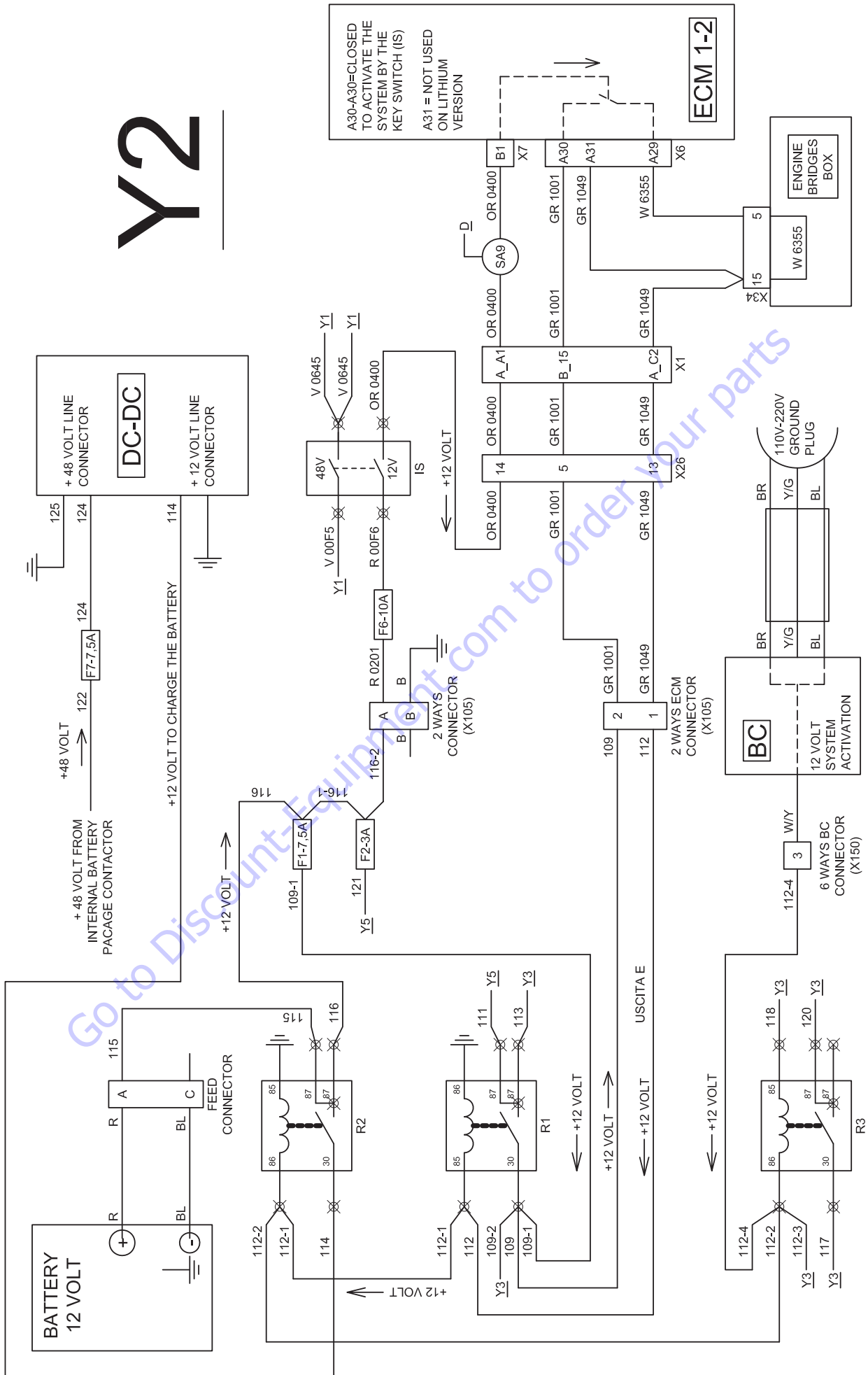
A29-A30=CLOSED TO ACTIVATE THE SYSTEM BY THE KEY SWITCH (IS)

A31 = NOT USED FOR LITHIUM VERSION

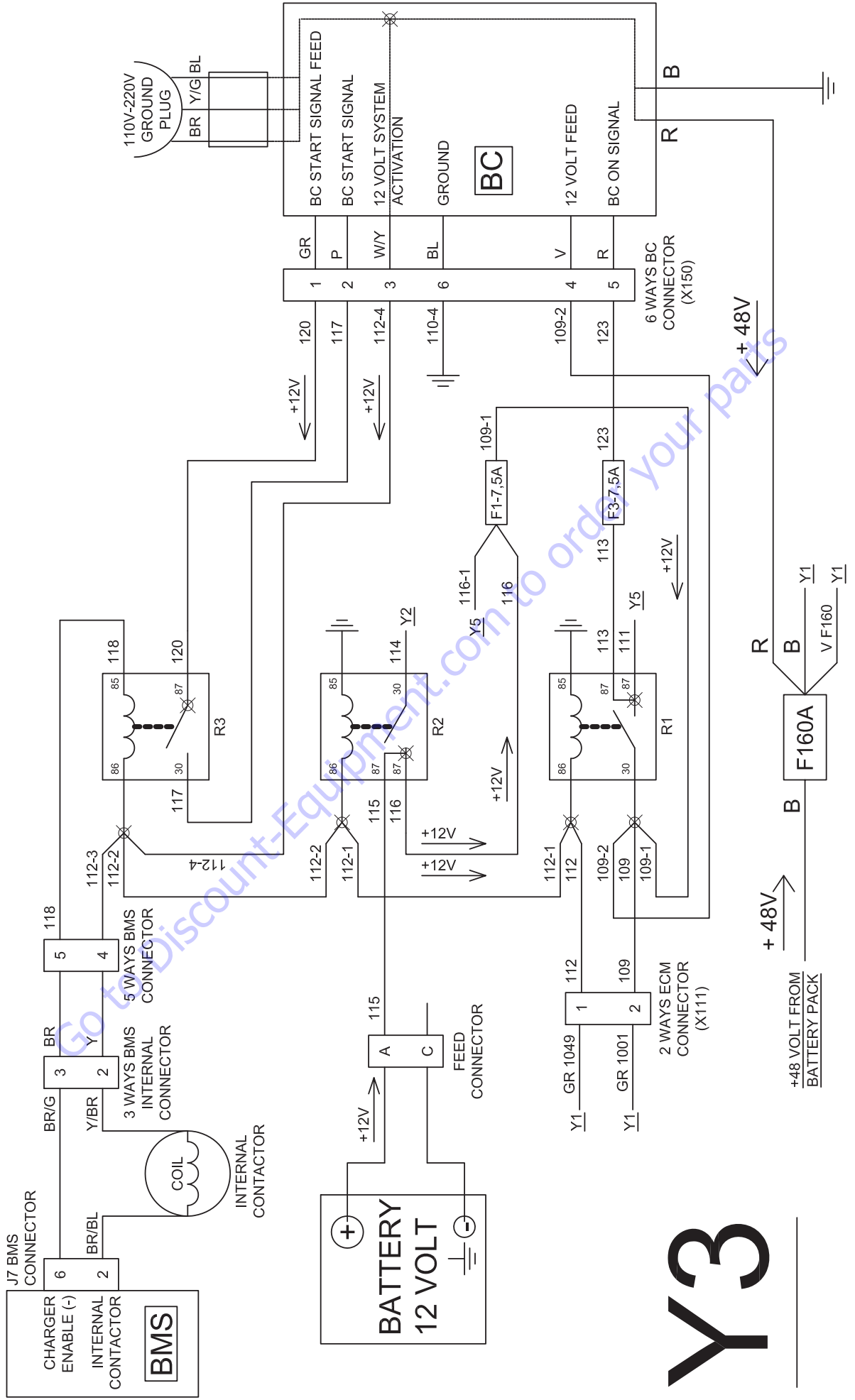
**ENGINE BRIDGES BOX**

W 6355

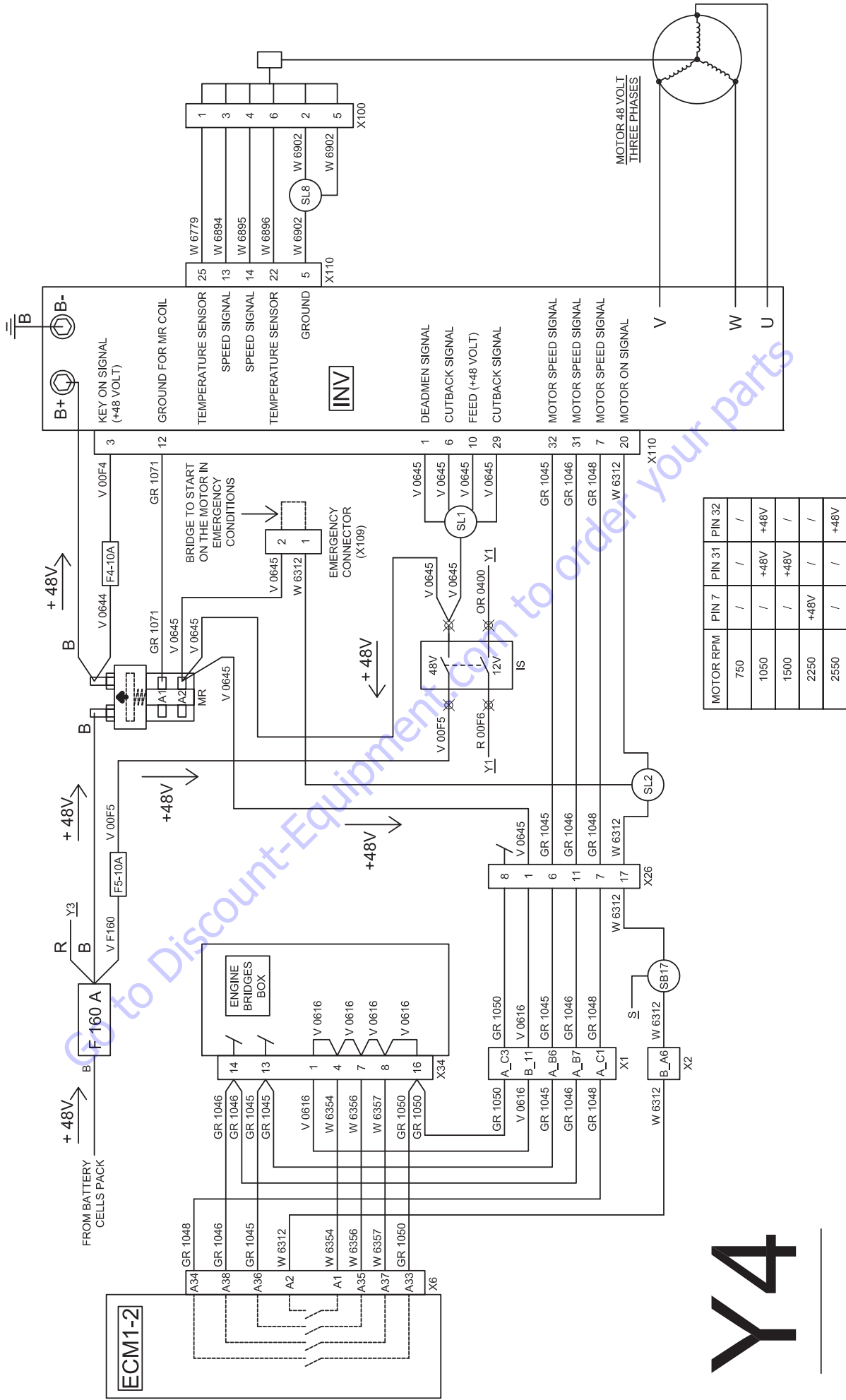
# Y2



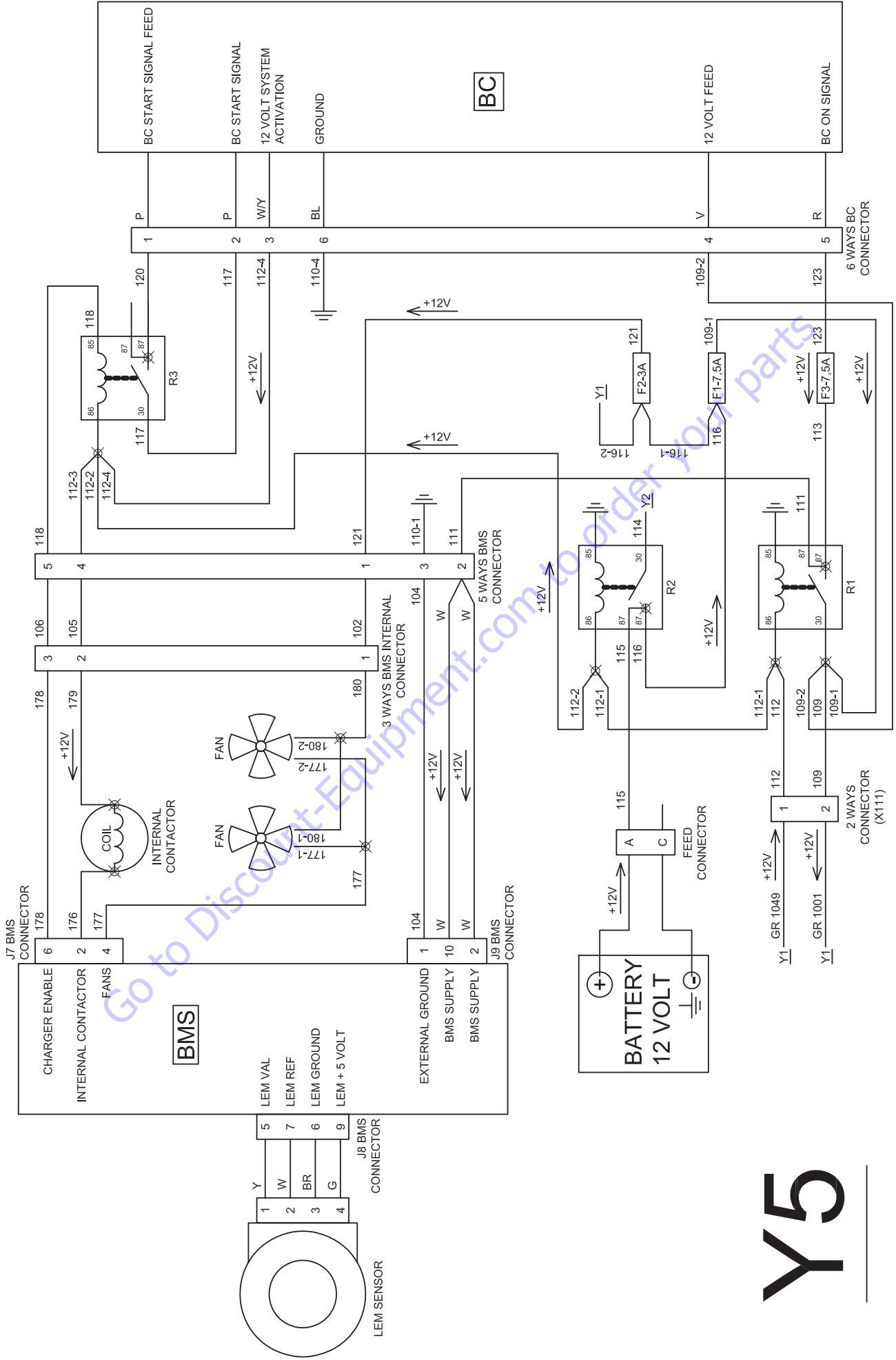
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# Y3

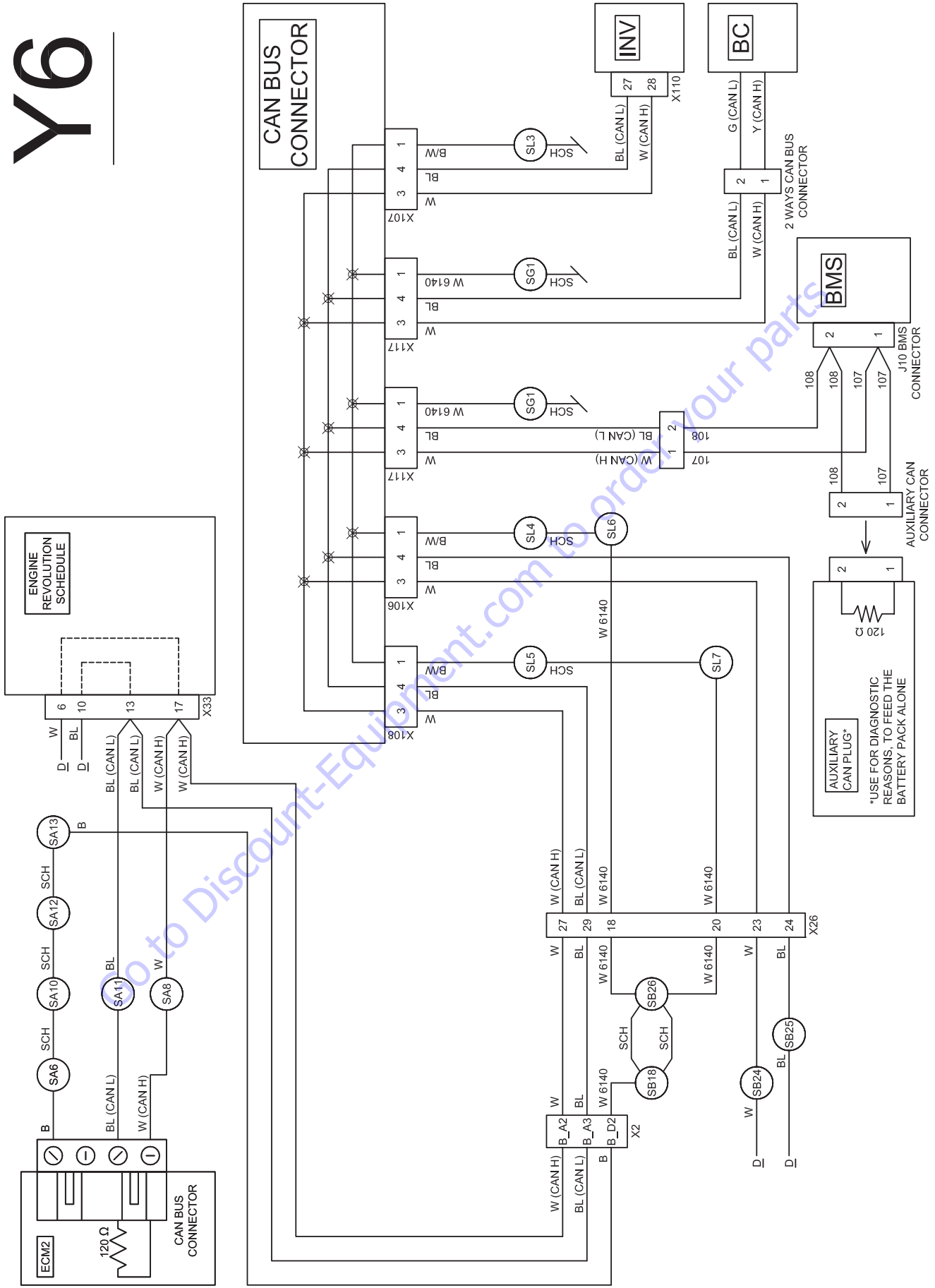


# Y4

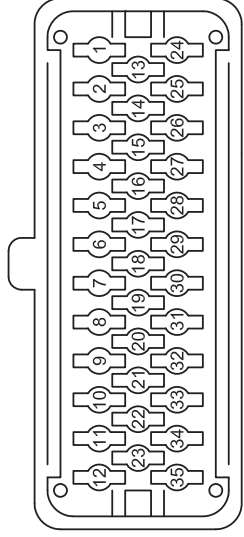
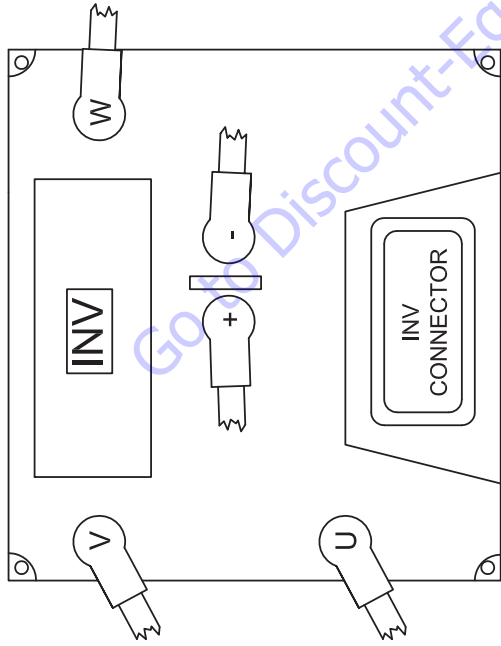


**Y5**

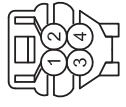
# Y6



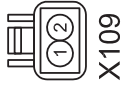




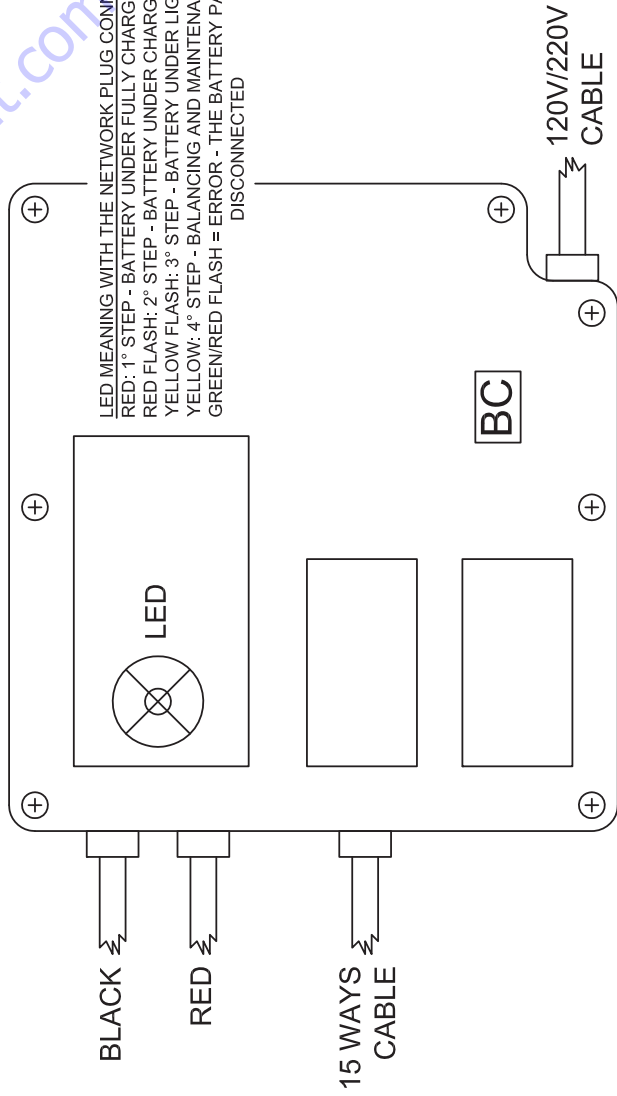
INV CONNECTOR (FRONT VIEW)  
(X110)



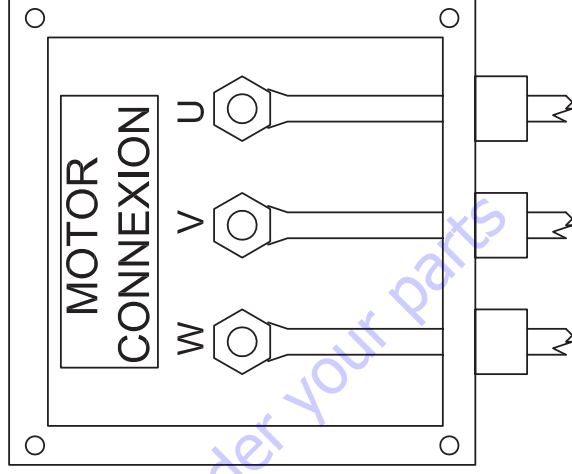
X106;107;108;117



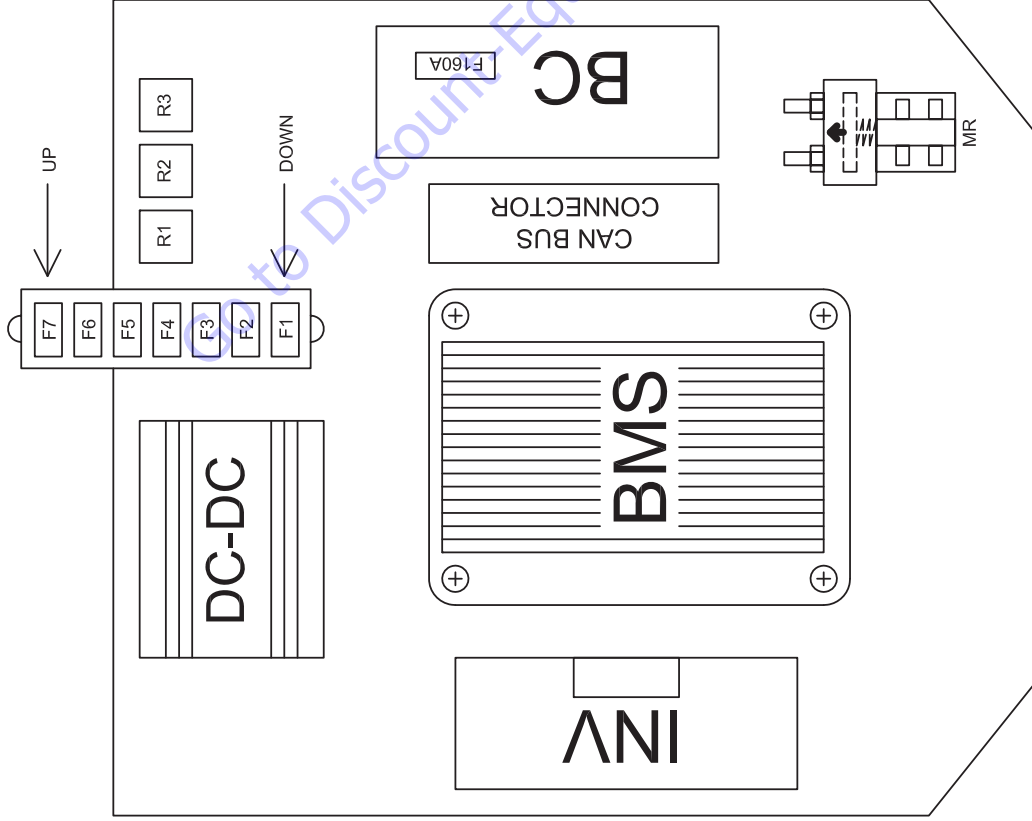
X109



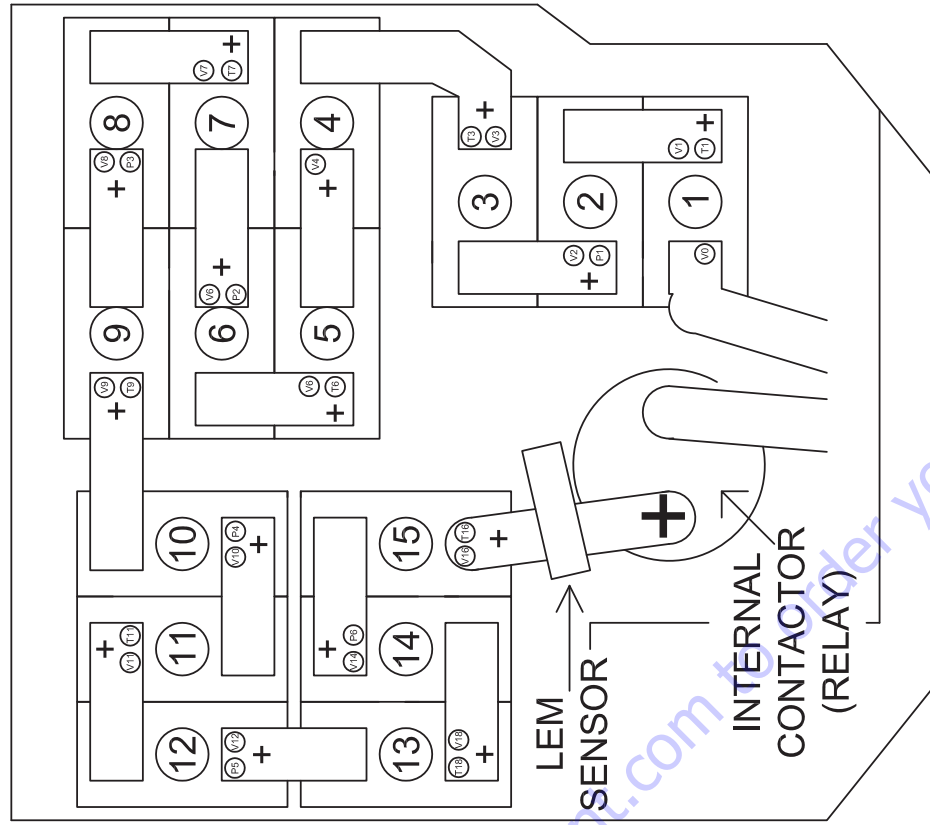
LED MEANING WITH THE NETWORK PLUG CONNECTED  
 RED: 1° STEP - BATTERY UNDER FULLY CHARGE  
 RED FLASH: 2° STEP - BATTERY UNDER CHARGE  
 YELLOW FLASH: 3° STEP - BATTERY UNDER LIGHT CHARGE  
 YELLOW: 4° STEP - BALANCING AND MAINTENANCE  
 GREEN/RED FLASH = ERROR - THE BATTERY PACKAGE IS DISCONNECTED



# Y8



## EXTERNAL COMPONENTS



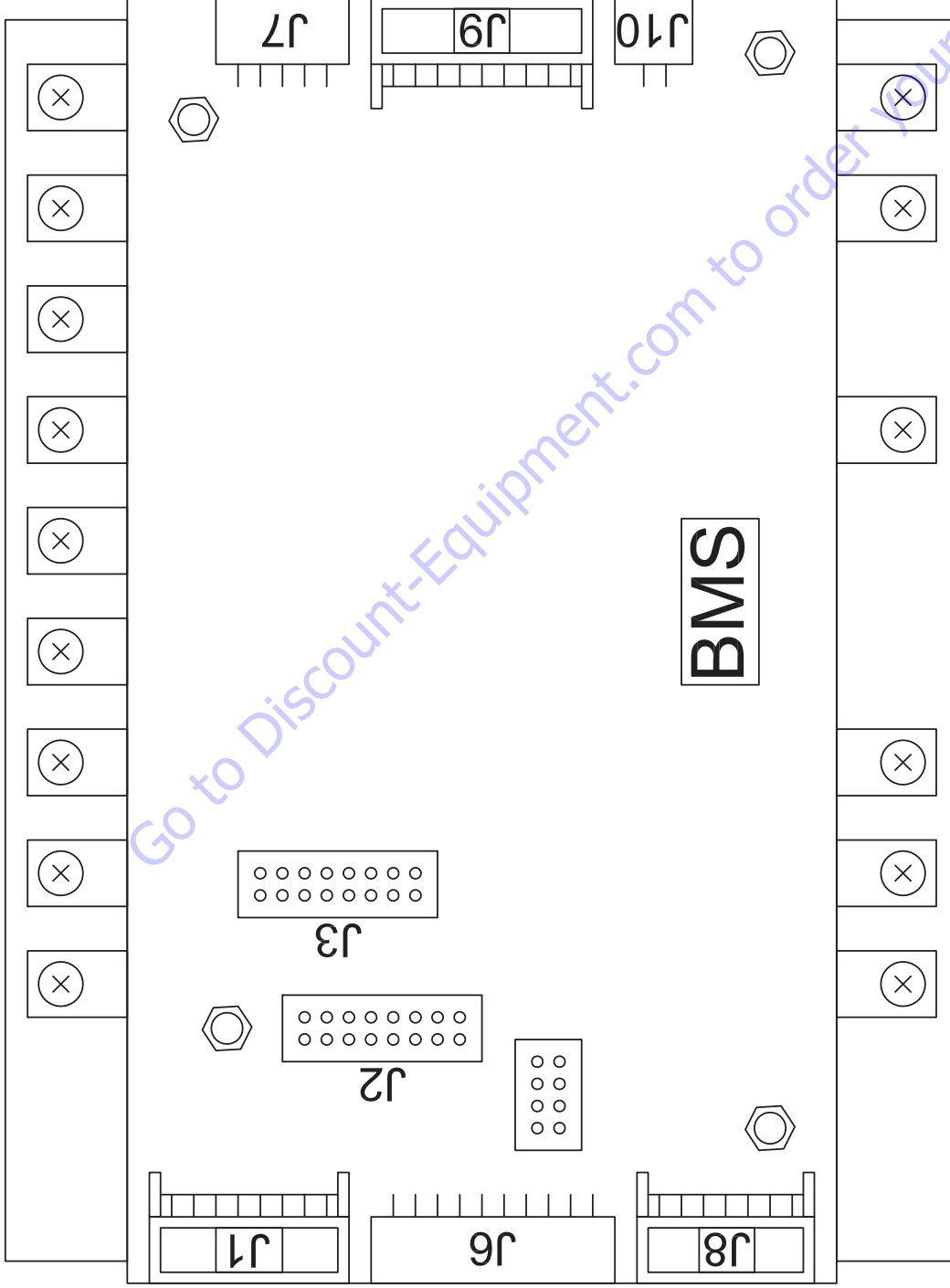
## INTERNAL COMPONENTS

+ (N°)  
CELL ELEMENT

+  
CELLS

CONNEXION

(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 - J2 - J3 CONNECTOR  
(WHITE)

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

J8 CONNECTOR  
(WHITE)

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

J9 CONNECTOR  
(WHITE)

# Y9

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

J6 CONNECTOR  
(BLACK)

5	6	7	8
1	2	3	4

J7 CONNECTOR  
(BLACK)

3	4
1	2

J10 CONNECTOR  
(BLACK)

NOTE: FRONT VIEW  
CONNECTORS SHOWN

**Connector J1 - Temperature Input**

PIN N°	DESCRIPTION
1	NTC Cell 1 - (T1)
2	NTC Cell 1 + (T1)
3	/
4	/
5	NTC Cell 3 - (T3)
6	NTC Cell 3 + (T3)
7	/
8	/
9	NTC Cell 5 - (T5)
10	NTC Cell 5 + (T5)
11	NTC HS 1 - (T6)
12	NTC HS 1 + (T6)
13	NTC Prot CH 1 - (P1)
14	NTC Prot CH 1 + (P1)
15	NTC Prot CH 2 - (P2)
16	NTC Prot CH 2 + (P2)

**Connector J2 - Temperature Input**

PIN N°	DESCRIPTION
1	NTC Cell 7 - (T7)
2	NTC Cell 7 + (T7)
3	/
4	/
5	NTC Cell 9 - (T9)
6	NTC Cell 9 + (T9)
7	NTC HS 2 - (T10)
8	NTC HS 2 + (T10)
9	/
10	/
11	NTC HS 11 - (T11)
12	NTC HS 11 + (T11)
13	NTC Prot CH 3 - (P3)
14	NTC Prot CH 3 + (P3)
15	NTC Prot CH 4 - (P4)
16	NTC Prot CH 4 + (P4)

**Connector J3 - Temperature Input**

PIN N°	DESCRIPTION
1	/
2	/
3	NTC Cell 13 - (T13)
4	NTC Cell 13 + (T13)
5	/
6	/
7	/
8	/
9	/
10	/
11	NTC HS 15 - (T15)
12	NTC HS 15 + (T15)
13	NTC Prot CH 5 - (P5)
14	NTC Prot CH 5 + (P5)
15	NTC Prot CH 6 - (P6)
16	NTC Prot CH 6 + (P6)

**Connector J6 - Voltage Input**

PIN N°	DESCRIPTION
1	GND (V0)
2	Volt Cell 1 (V1)
3	Volt Cell 2 (V2)
4	Volt Cell 3 (V3)
5	Volt Cell 4 (V4)
6	Volt Cell 5 (V5)
7	Volt Cell 6 (V6)
8	Volt Cell 7 (V7)
9	Volt Cell 8 (V8)
10	Volt Cell 9 (V9)
11	Volt Cell 10 (V10)
12	Volt Cell 10 (V10)
13	Volt Cell 11 (V11)
14	Volt Cell 12 (V12)
15	Volt Cell 13 (V13)
16	Volt Cell 14 (V14)
17	/
18	Volt Cell 14 (V14)
19	Volt Cell 15 (V15)
20	/

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 J7**

**Internal Contactor and fans**

PIN N°	DESCRIPTION
1	/
2	176 Internal Contactor
3	/
4	177 Fans
5	/
6	178 Charger Enable
7	/
8	/

**Connector J8 - Current Sensor**

PIN N°	DESCRIPTION
1	/
2	/
3	/
4	/
5	Y Lem Val
6	BR Lem GND
7	W Lem Ref
8	/
9	G Lem + 5 Volt
10	/
11	/
12	/
13	/
14	/

**Connector J9 - Supply**

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

**Connector J10 - Can Bus**

PIN N°	DESCRIPTION
1	107 CAN H
2	108 CAN L
3	/
4	/

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

DESCRIPTION - DESCRIZIONE - DESCRIPCION - DESCRIPTION

PAGE	DESCRIPTION	DESCRIZIONE	DESCRIPCION
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	CONNECTORES 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	CONNECTEURS BMS

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

NAME	DESCRIPTION	DESCRIZIONE	DESCRIPCIÓN
AUXILIARY CAN CONNECTOR	CAN CONNECTOR FOR DIAGNOSTIC	CONNETTORE CAN PER DIAGNOSI	CONNECTOR CAN PARA DIAGNOSTICO
AUXILIARY CAN PLUG	PLUG CAN FOR DIAGNOSTIC	PRESA CAN PER DIAGNOSI	ENCHUFE CAN PARA DIAGNOSTICO
BATTERY 12 VOLT	BATTERY 12 VOLT	BATTERIA 12 VOLT	BATERIA 12 VOLT
BC	BATTERY CHARGER	CARICABATTERIE	CARGADOR DE BATERIAS
BMS	BATTERY MANAGEMENT SYSTEM	BATTERY MANAGEMENT SYSTEM	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	CAN BUS LINE BRIDGE BOX	SCATOLA PONTE LINEA CAN BUS	CAJA PUENTE LINEA CAN BUS
CONNECTOR	CONNECTOR	CONNETTORE	CONNECTOR
INTERNAL CONTACTOR	CONTACTOR IN THE CELLS BOX	CONTATTORE NEL PACCO BATTERIE	CONTACTOR EN EL PAQUETE BATERIAS
DC-DC	48-72V/12V FEEDER	ALIMENTATORE 48-72V/12V	ALIMENTADOR 48-72V/12V
ECM1-2	ELECTRONIC CONTROL MODULE 1-2	SCHEDA ELETTRONICA DI CONTROLLO 1-2	TARJETA DE CONTROL 2
F N°	FUSE	FUSIBILE	FUSIBLE
FRONT FAN	BATTERY BOX FRONT FANS	VENTOLE FRONTALE VANO BATTERIE	PANTALLA DELANTERA PAQUETE BATERIAS
INV	INVERTER	INVERTER	INVERTER
IS	IGNITION KEY SWITCH	INTERRUTTORE A CHIAVE MOTORE	INTERRUTTORE A LLAVE MOTOR
LEM SENSOR	LEM SENSOR	SENSORE LEM	SENSOR LEM
MOTOR	ELECTRIC MOTOR	MOTORE ELETTRICO	MOTOR ELECTRICO
MR	MAIN RELE*	RELE PRINCIPALE	RELE* PRINCIPAL
R N°	RELAY	RELE*	RELE*
REAR FAN	BATTERY BOX REAR FAN	VENTOLA POSTERIORE VANO BATTERIE	PANTALLA TRASERA PAQUETE BATERIAS

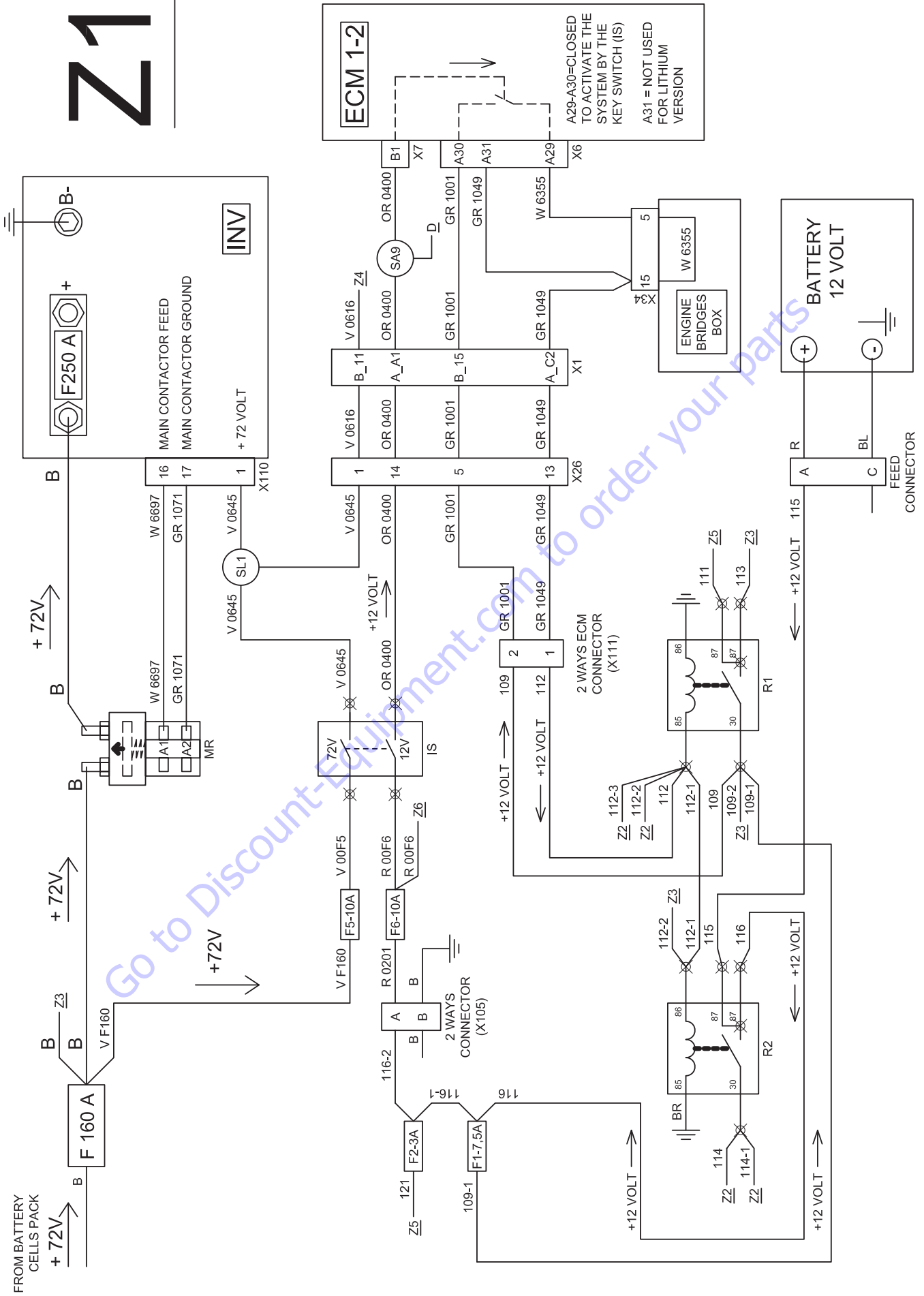
NAME	DESCRIPTION
AUXILIARY CAN CONNECTOR	CONNECTEUR CAN AUXILIAIRES
AUXILIARY CAN PLUG	FICHE CAN AUXILIAIRES
BATTERY 12 VOLT	BATTERIE 12 VOLT
BC	CHARGEUR DE BATTERIE
BMS	BATTERY MANAGEMENT SYSTEM
CAN BRIDGE BOX	BOINTE PONT LIGNE CAN BUS
CONNECTOR	CONNECTEUR
INTERNAL CONTACTOR	CONTACTEUR INTERIEUR PAQUET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

# Z

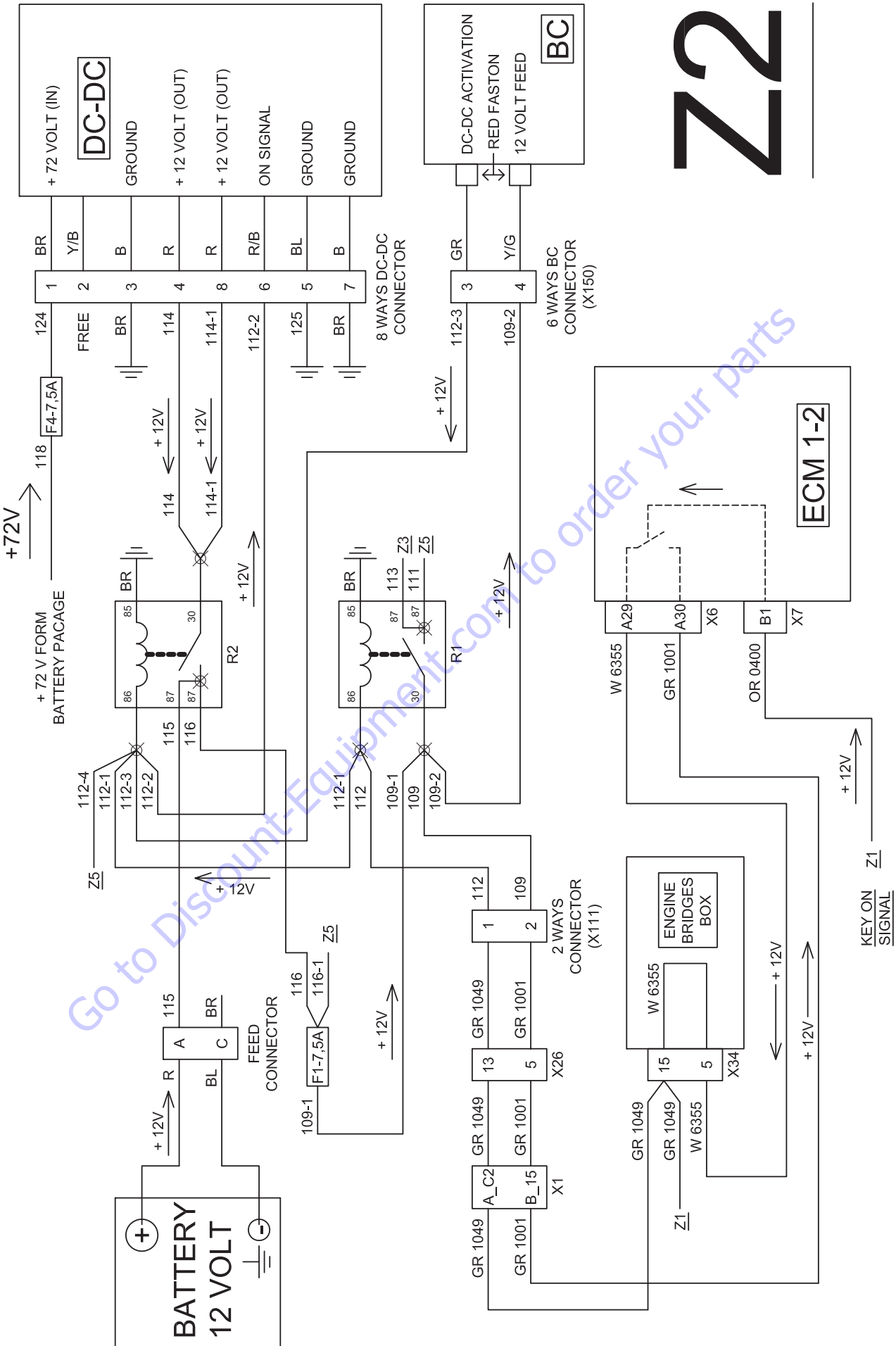
**Note to read the wiring diagrams**

- 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

# Z1



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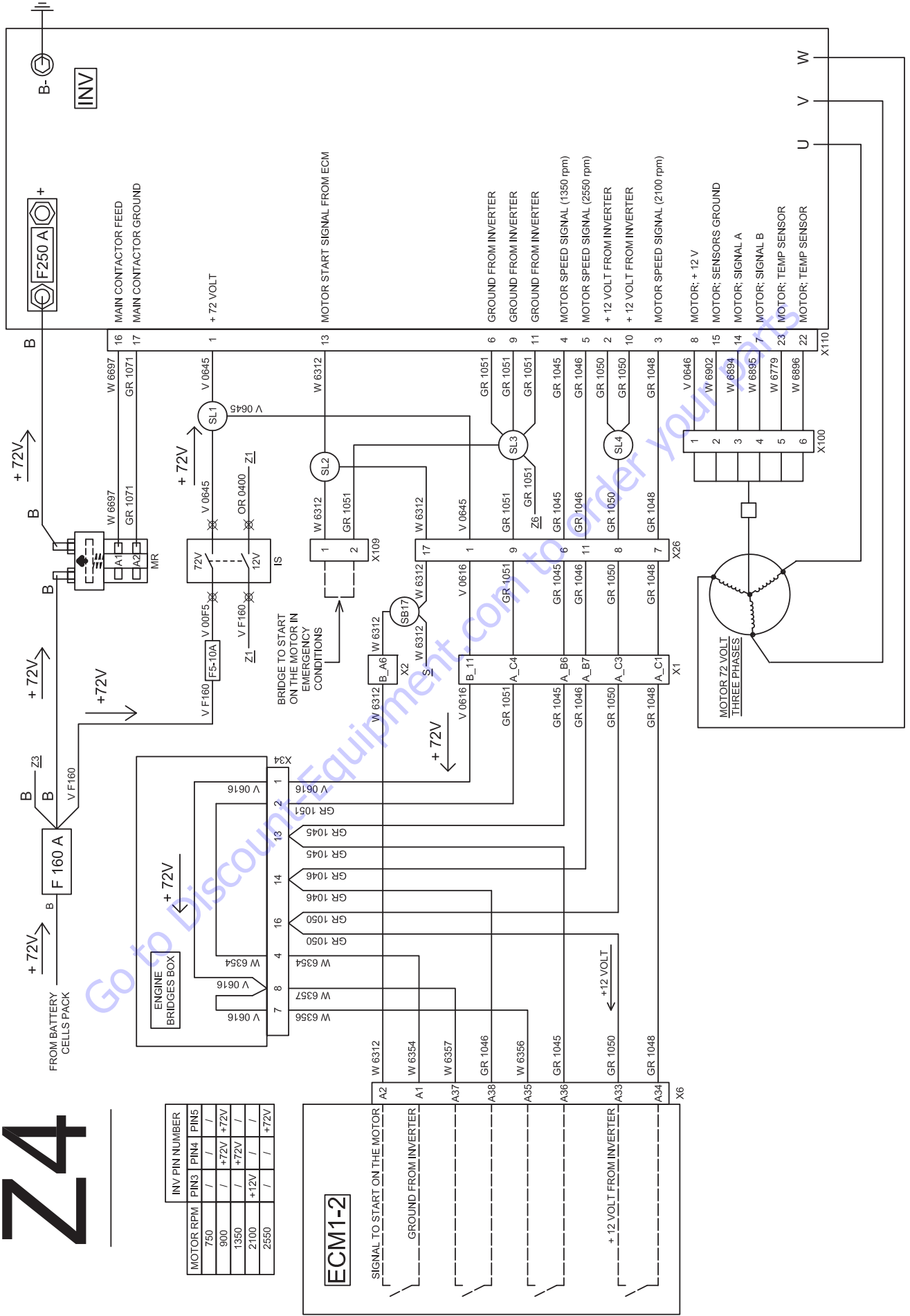


# Z2



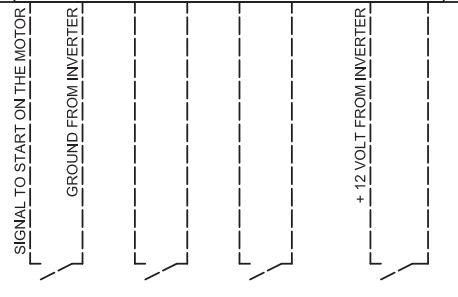


# Z4

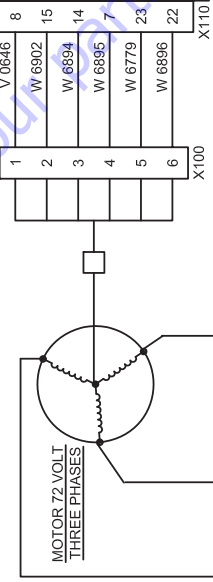


MOTOR RPM	INV PIN NUMBER			
	PIN3	PIN4	PIN5	
750	/	/	/	/
900	/	/	+72V	+72V
1350	/	/	+72V	/
2100	/	/	+12V	/
2550	/	/	/	+72V

## ECM1-2



MOTOR 72 VOLT THREE PHASES



BRIDGE TO START ON THE MOTOR IN EMERGENCY CONDITIONS

MOTOR START SIGNAL FROM ECM

GROUND FROM INVERTER  
GROUND FROM INVERTER  
GROUND FROM INVERTER  
MOTOR SPEED SIGNAL (1350 rpm)  
MOTOR SPEED SIGNAL (2550 rpm)  
+12 VOLT FROM INVERTER  
+12 VOLT FROM INVERTER  
MOTOR SPEED SIGNAL (2100 rpm)

MOTOR; +12 V  
MOTOR; SENSORS GROUND  
MOTOR; SIGNAL A  
MOTOR; SIGNAL B  
MOTOR; TEMP SENSOR  
MOTOR; TEMP SENSOR

MAIN CONTACTOR FEED  
MAIN CONTACTOR GROUND  
+72 VOLT

INV

F250 A

F 160 A

+72V

+72V

+72V

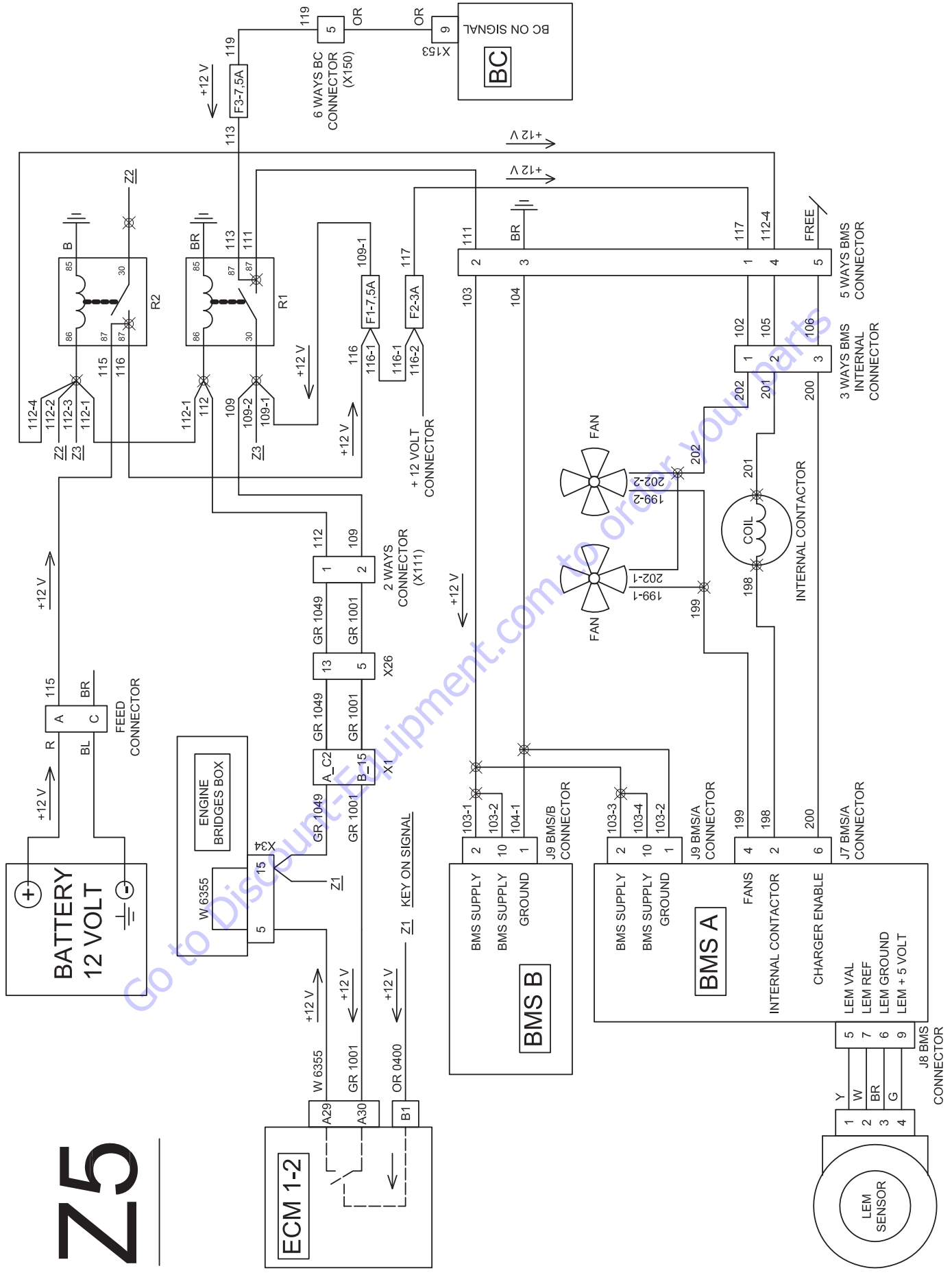
+72V

+72V

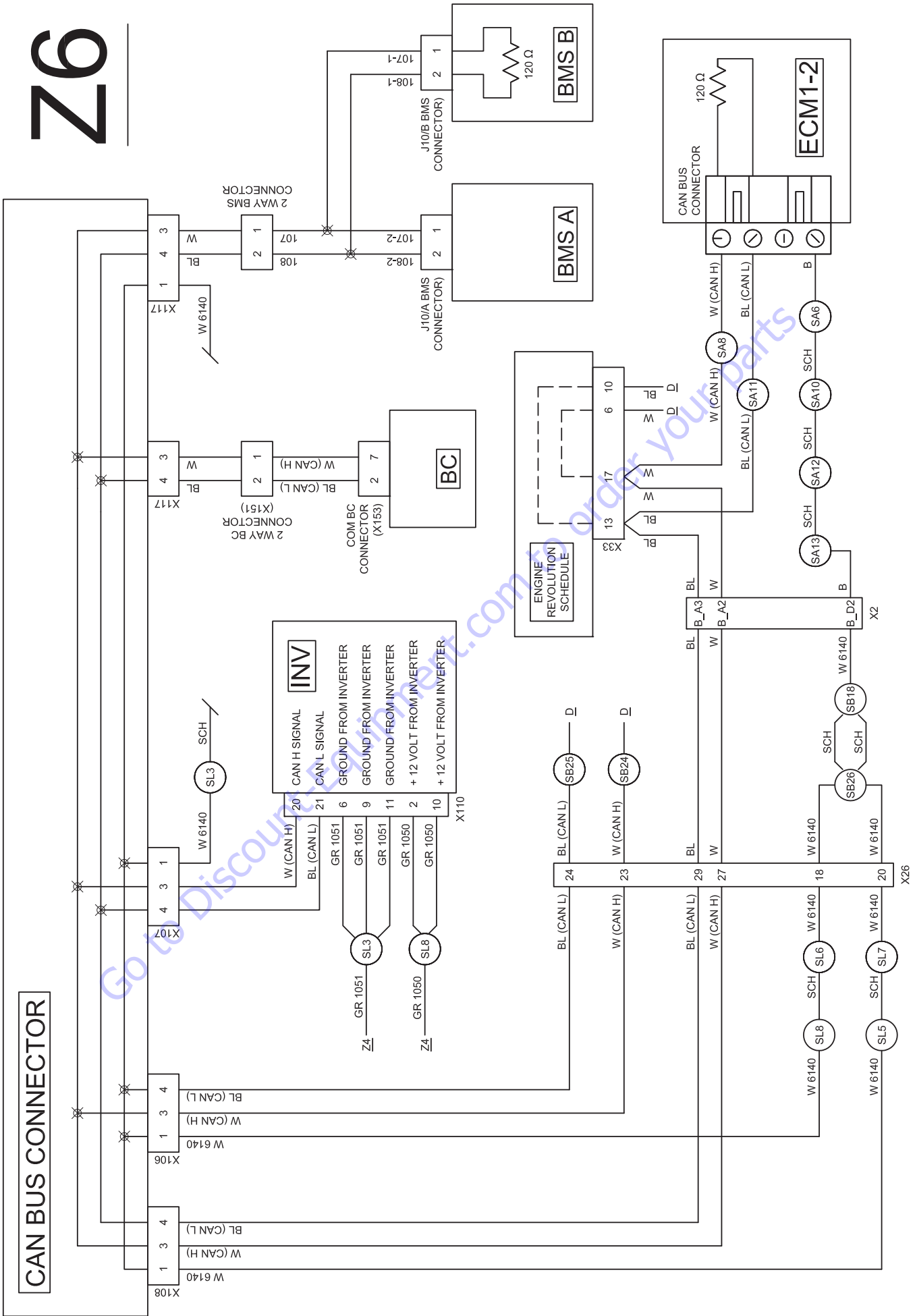
+72V

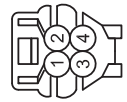
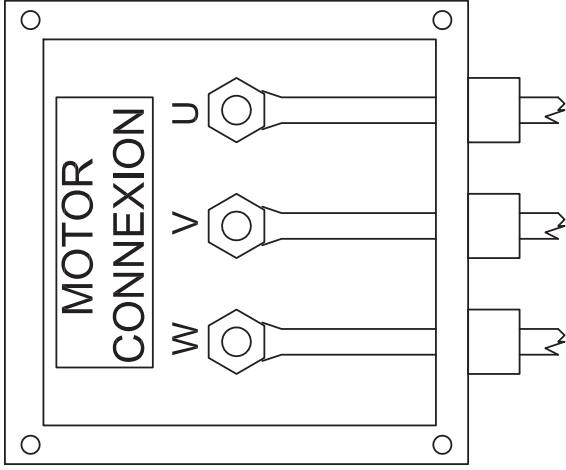
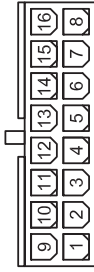
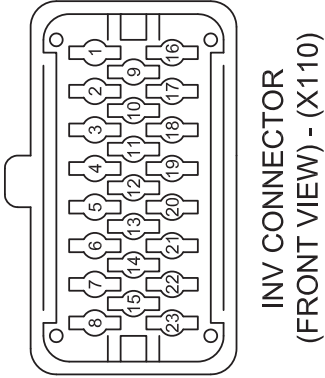
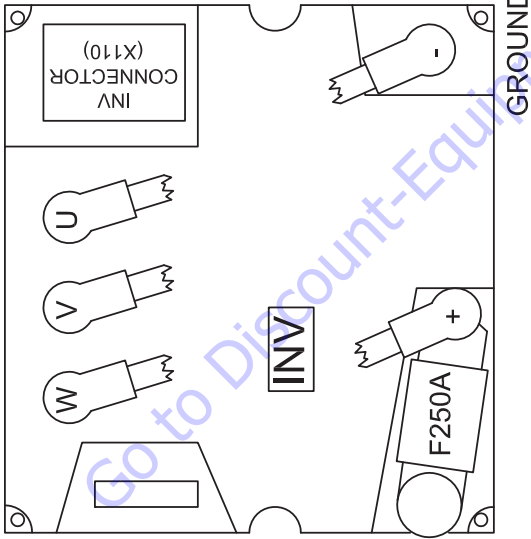
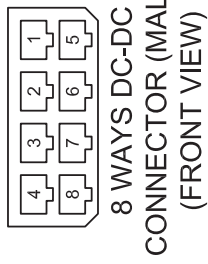
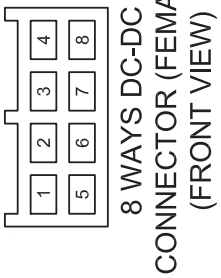
+72V

# Z5



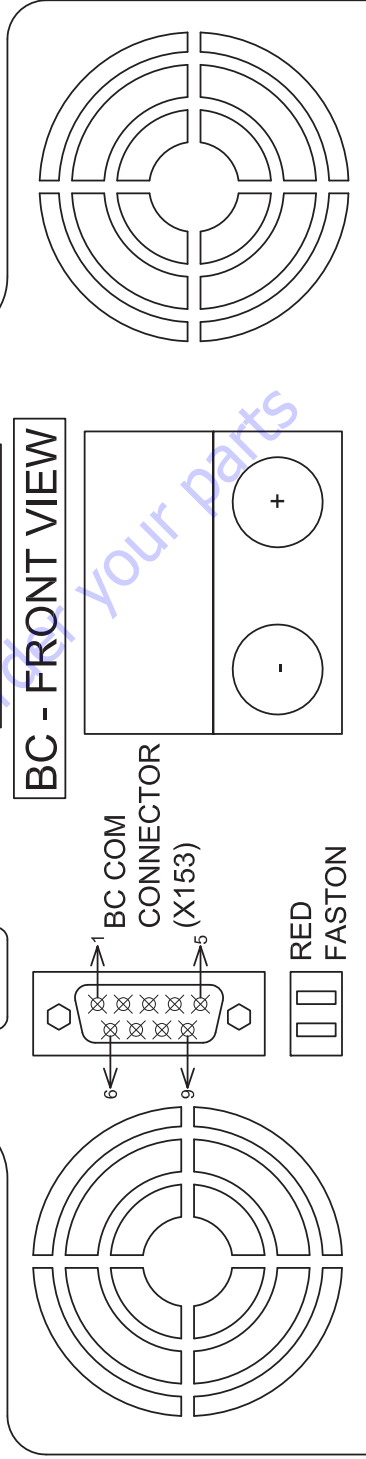
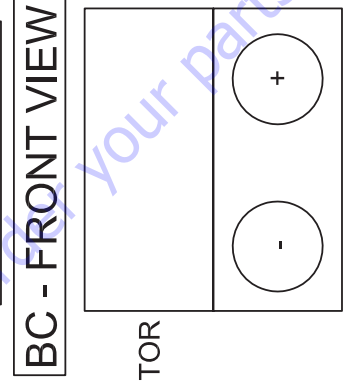
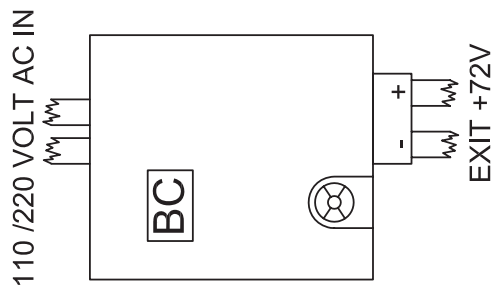
# Z6





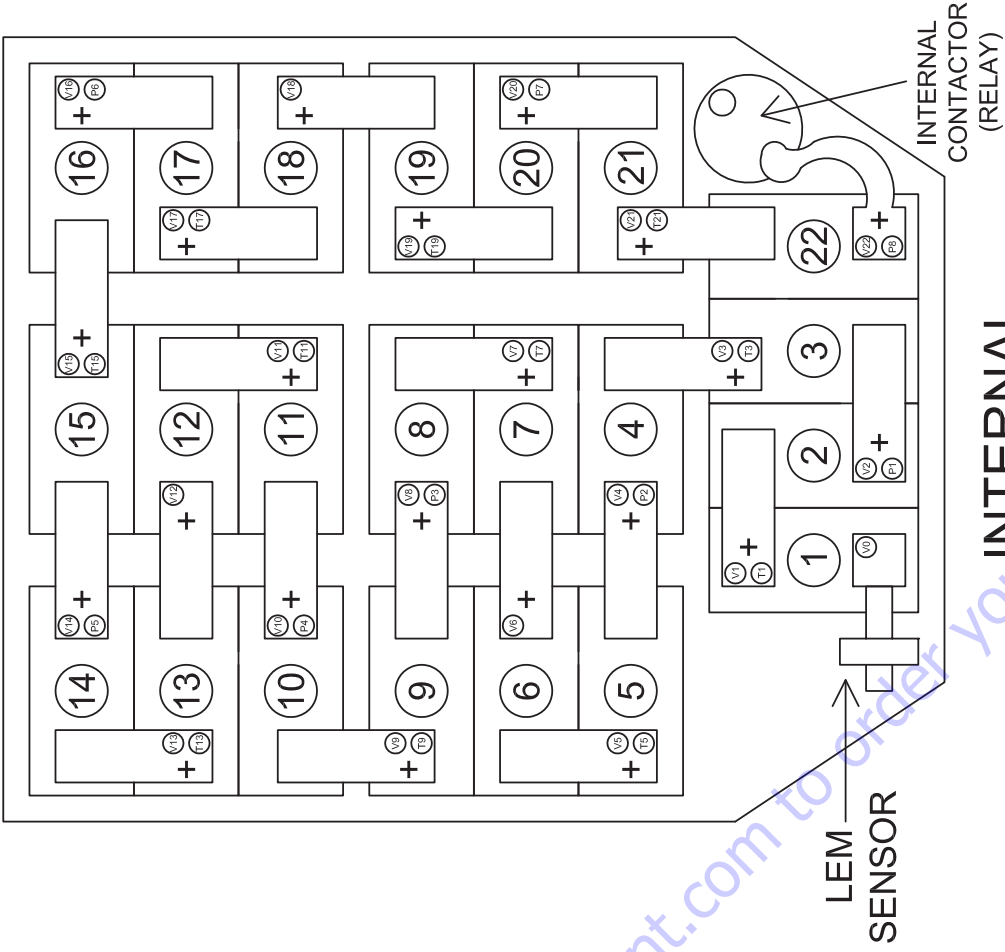
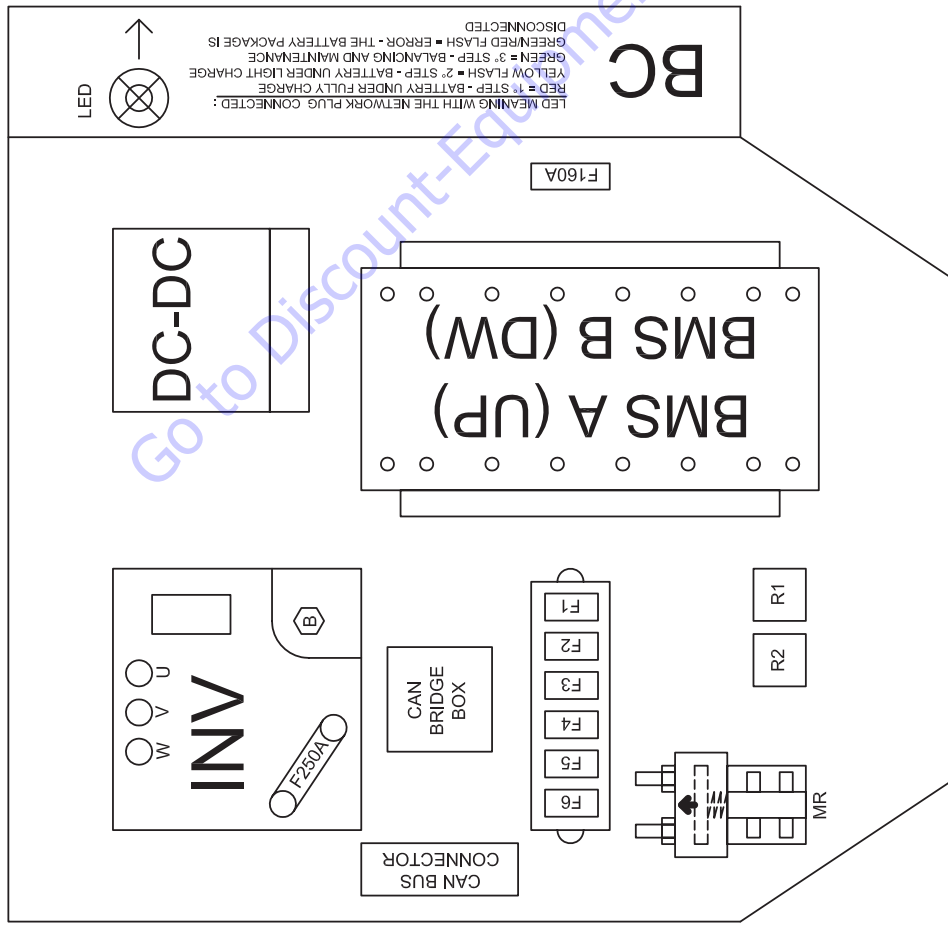
CAN BRIDGE CONNECTOR (FRONT VIEW) - (X154)

ZZ

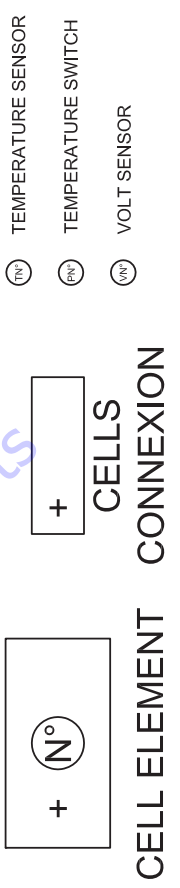


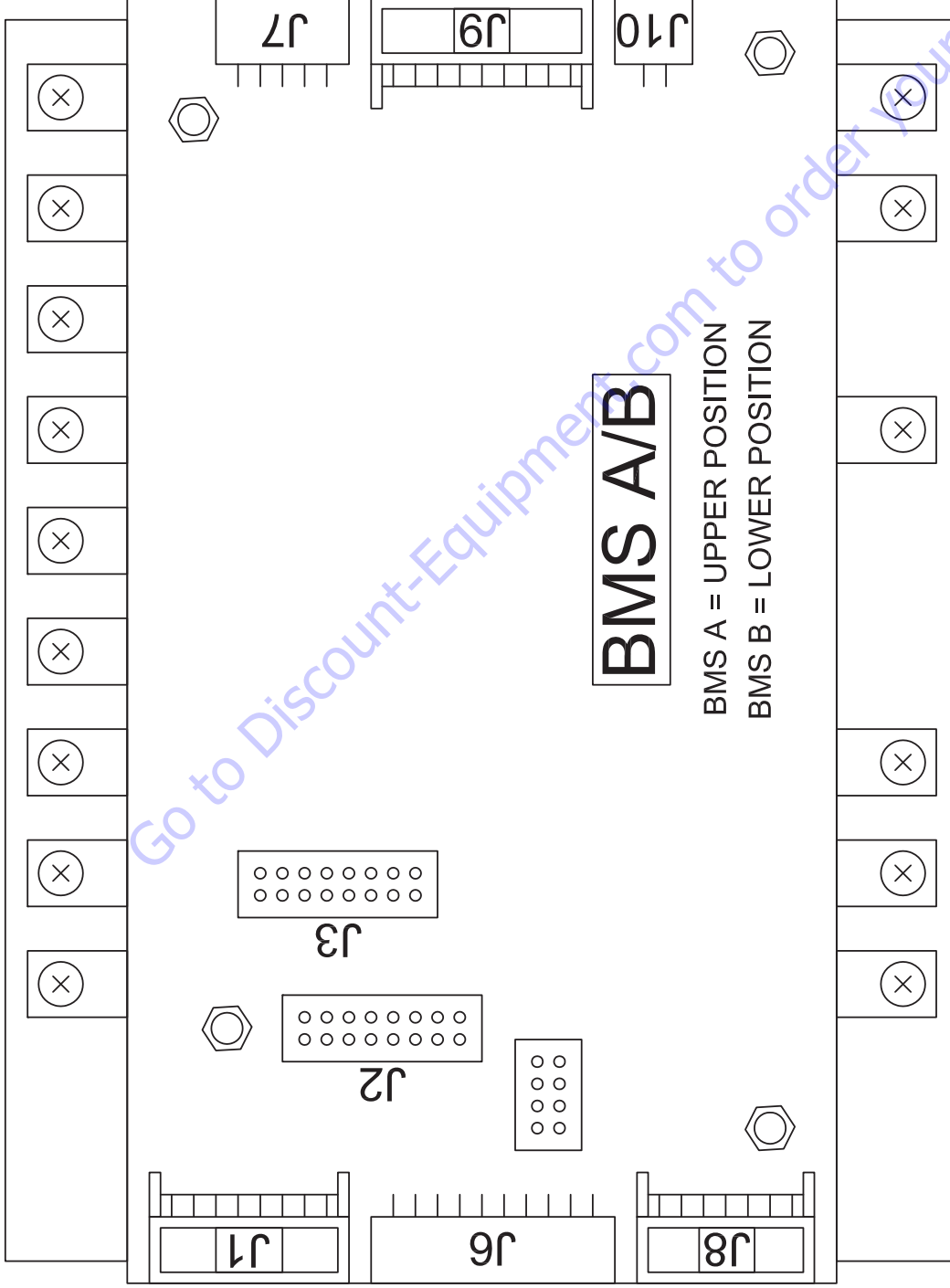
EXIT +72V

## EXTERNAL COMPONENTS



## INTERNAL COMPONENTS





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
1	3	5	7	9	11	13

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

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

J6 A/B CONNECTOR  
(BLACK)

5	6	7	8
1	2	3	4

J7 A/B CONNECTOR  
(BLACK)

3	4
1	2

J10 A/B CONNECTOR  
(BLACK)

NOTE: FRONT VIEW  
CONNECTORS SHOWN

**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)

**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
EMPTY		

**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	/	/

Note: Cell 10 has double signal

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 J7/A**

Internal Contactor and fans

PIN	COLOR	DESCRIPTION
1	/	/
2	198	Internal Contactor
3	/	/
4	199	Fans
5	/	/
6	200	Charger Enable
7	/	/
8	/	/

**Connector J8/A - Current Sensor**

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	/	/

**Connector J9/A - Supply**

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 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)

**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
		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

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 J7/B**

Internal Contactor and fans

PIN	COLOR	DESCRIPTION
		EMPTY

**Connector J8B - Current Sensor**

PIN	COLOR	DESCRIPTION
		EMPTY

**Connector J9/B - Supply**

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

**Connector J10/B - Can Bus**

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

**Z10B**

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