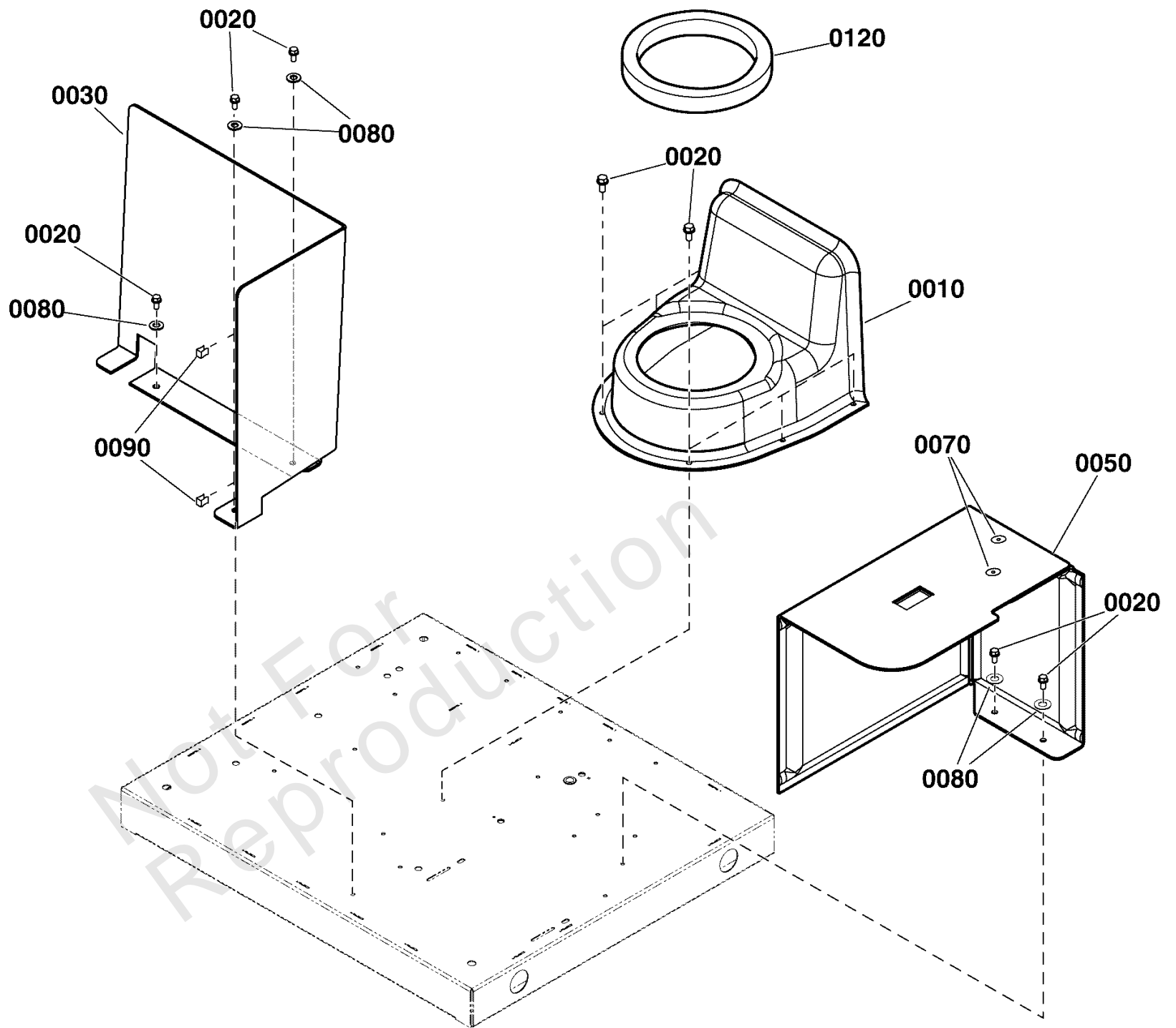




Parts Manual

Mfg. No: 040591-00
12,000 Watt Standby Generator (B&S
Fortress)

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Air Handling Group

REF NO	PART NO	QTY	DESCRIPTION
0010	706925	1	DUCT
0020	704130	9	SCREW, HEX, 1/4-20X.5
0030	704966	1	DUCT-EXHAUST
0050	316844GS	1	PANEL
0070	-----	2	WASHER, Flat, #10, Fender -(*See footnote)
0080	22145GS	5	WASHER
0090	314661GS	2	CLIP
0120	706927	1	SEAL

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Reproduction

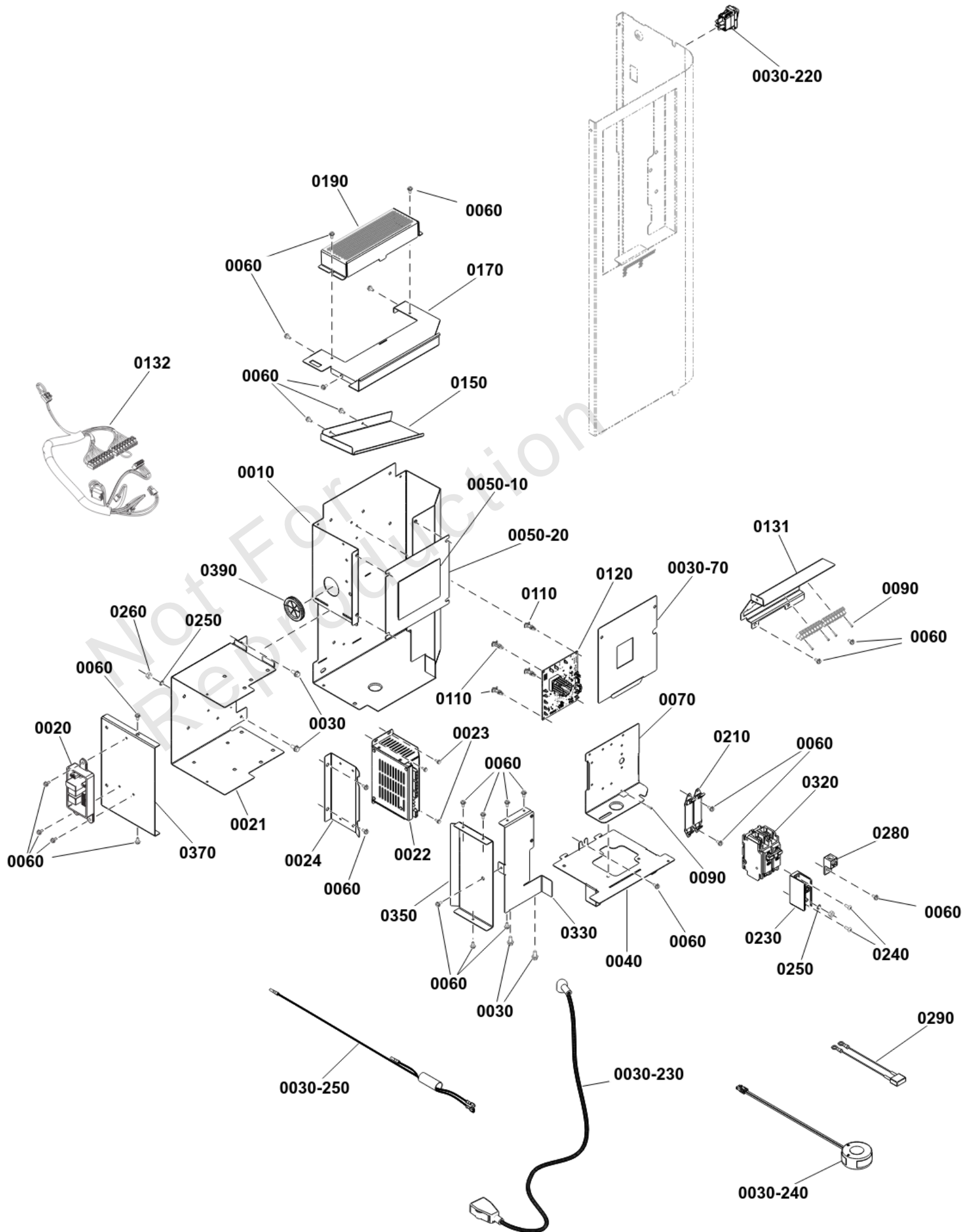
Footnotes:

Note:* Items without part numbers are common fasteners and are available at your local hardware store.

Control Panel Group

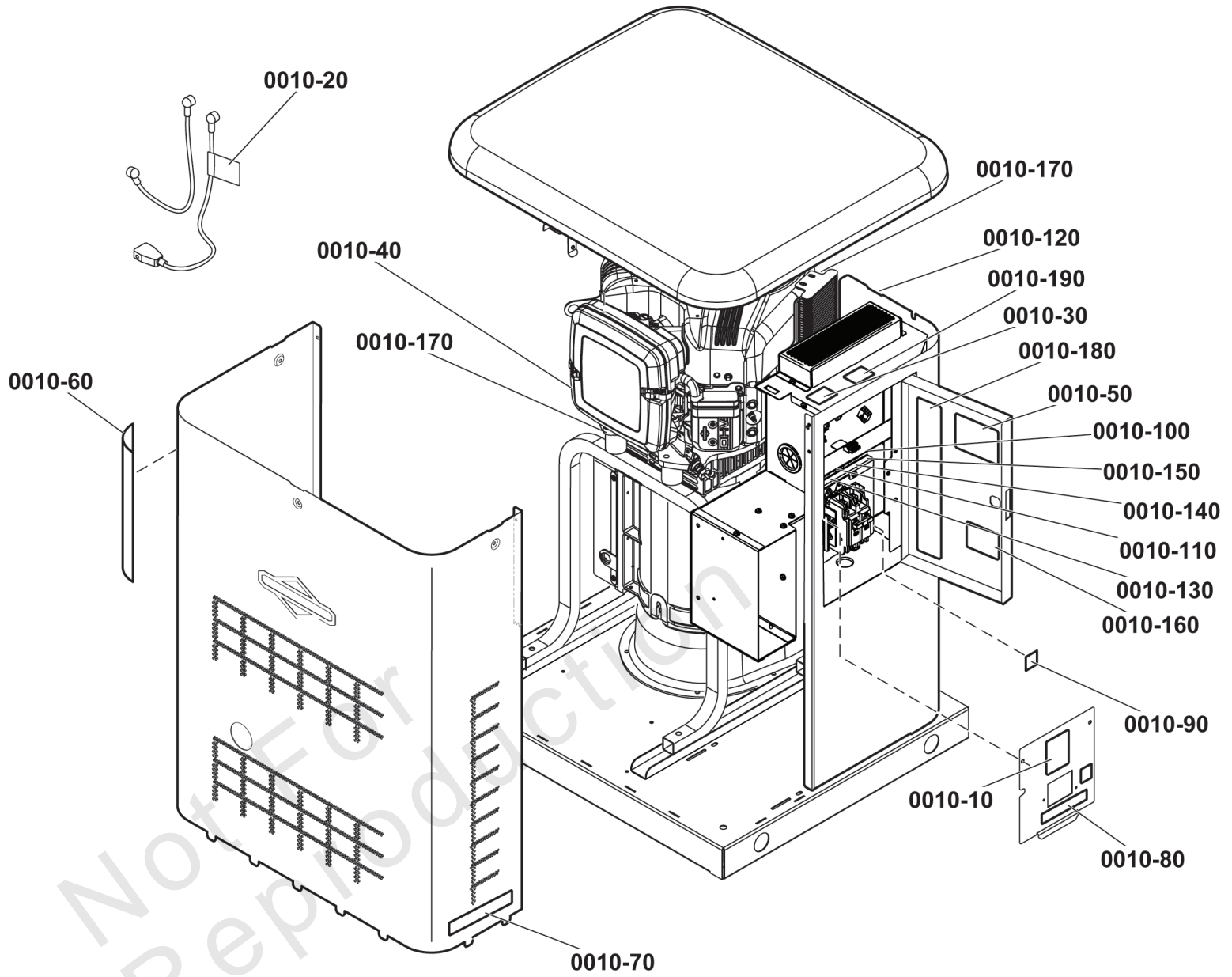
Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 040591-00



Control Panel Group

REF NO	PART NO	QTY	DESCRIPTION
0010	772335	1	BOX, Control
0020	772336	1	ASSEMBLY, Relay
0021	772362	1	BOX, Control, Air Duct
0022	772376	1	CHARGER, Battery
0023	192730GS	3	SCREW, Hex Head, Trilobular, #6-32 x 3/8
0024	772365	1	DEFLECTOR, Control, Air Duct
0030	704130	4	SCREW, HEX, 1/4-20X.5
0030-70	772369	1	PANEL
0030-220	772341	1	SWITCH, Rocker
0030-230	772340	1	CABLE, BATTERY, RED
0030-240	772339	2	TRANSFORMER, Current, 150:5
0030-250	84004583	1	HARNESS
0040	772351	1	BRACKET, Vent, Control Box
0050-10	772373	1	CONTROLLER
0050-20	772367	1	PANEL, Control Panel Cover
0060	194561GS	26	HHS, Trilobular, #10-32 x 3/8
0070	772358	1	BRACKET, Circuit Breaker
0090	314691GS	5	SCREW, Taptite, M2.5-.45 X 12
0110	772379	4	SUPPORT, Circuit Board
0120	772378	1	ASSEMBLY, Smart AVR
0131	772371	1	BRACKET, Terminal Block
0132	772377	1	HARNESS, Field Connection
0150	772360	1	DEFLECTOR, Control Box
0170	772359	1	PANEL, Control Box Top
0190	772368	1	PANEL, Control Box Top, Perforated
0210	192770GS	2	BRACKET, Mounting / Breaker
0230	208365GS	1	BLOCK, Terminal
0240	205947GS	2	SCREW, Trilobular, #10-32 x 3/4
0250	26850GS	3	WASHER, Ext. M6 - 1/4" Shakeproof
0260	22127GS	3	NUT, Hex, 1/4-20
0280	84007093	1	LUG, Ground
0290	84003257	1	ASSEMBLY, Neutral Drain Capacitor
0320	311316GS	1	CIRCUIT BREAKER, 60A
0330	772361	1	PANEL, Control Box Front
0350	772364	1	DEFLECTOR, Control Air Duct
0370	772363	1	BOX, Control Air Duct, End
0390	84001695	1	GROMMET



0010-10

WARNING AVERTISSEMENT ADVERTENCIA

Risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
Riesgo de descarga eléctrica. No pas retirar el cubricover. Aucune pièce à entretenir par l'utilisateur à l'intérieur. Confier l'entretien à du personnel de service qualifié.
Riesgo de descarga eléctrica. No quite la cubierta. No hay partes que puedan ser reparadas por el usuario en el interior. Haga que personal calificado realice el servicio.

0010-20

WARNING AVERTISSEMENT ADVERTENCIA

Explosion of battery gases could result in death or serious injury. Keep all sources of ignition away from battery. Battery contains acid which could result in blindness or severe burns. Avoid contact with acid.
L'explosion des gaz de la batterie peut provoquer des blessures graves, voire la mort. Tenez toutes les sources d'allumage éloignées de la batterie. La batterie contient de l'acide pouvant causer la cécité ou de sévères brûlures. Évitez le contact avec l'acide.
La explosión de la batería podría causar la muerte o lesiones serias. Mantenga todas las fuentes de ignición lejos de la batería. La batería contiene ácido que podría causar ceguera o quemaduras serias. Evite el contacto con el ácido.

0010-30

WARNING AVERTISSEMENT ADVERTENCIA

To reduce the risk of fire, replace only with same type and rating of fuse.
15AMP TYPE ATO
Pour réduire le risque d'incendie, remplacez avec un fusible de même type et classification.
15 A TYPE ATO
Para reducir el riesgo de incendio, reemplazé solamente con un fusible del mismo tipo y capacidad.
15AMP TIPO ATO

0010-40

WARNING AVERTISSEMENT ADVERTENCIA

Hot surface could result in serious injury. Do not touch.
La surface chaude pourrait entraîner des blessures graves. Ne touchez pas.
La superficie caliente podría causar lesiones serias. No toque.

0010-50

WARNING AVERTISSEMENT ADVERTENCIA

Failure to read & follow Operator and installation manuals could result in death or serious injury.
Ne pas lire et respecter les manuels de l'utilisateur et d'installation pourrait entraîner des blessures graves ou la mort.
No leer y seguir las indicaciones de los manuales de operación e instalación podría causar la muerte o lesiones serias.

0010-60

WARNING AVERTISSEMENT ADVERTENCIA

Engine exhaust contains carbon monoxide, a poisonous gas that could kill you in minutes. You cannot smell it or see it. Install outdoors only. Install carbon monoxide alarms in home. Hot surface could result in serious injury. Do not touch.
Engine exhaust could ignite combustibles resulting in death or serious injury. Exhaust side of weatherproof enclosure shall have 5 ft. (1.5m) min distance from any structures, shrubs, trees or any vegetation.
This equipment may create sparks that could start fires around dry vegetation. A spark arrester may be required. Contact local fire agencies for regulations relating to fire prevention requirements.
L'échappement du moteur contient du monoxyde de carbone, un gaz toxique pouvant tuer en quelques minutes. Vous ne pouvez ni le sentir ni le voir. Installez la l'extérieur seulement. Installez les alarmes de monoxyde de carbone dans la maison.
La surface chaude pourrait entraîner des blessures graves. Ne touchez pas.
L'échappement du moteur peut enflammer les combustibles, ce qui peut provoquer des blessures graves, voire la mort. La sortie pour l'échappement de rencontre à l'épreuve des intempéries doit avoir un dégagement d'au moins 1,5 m (5 pi) de toutes structures, buissons, arbres ou autres végétaux. Cet équipement peut produire des étincelles pouvant déclencher des incendies autour de la végétation sèche. Un pare-étincelles pourrait être nécessaire. Contactez les responsables locaux des incendies pour connaître les exigences réglementaires liées à la prévention des incendies.
Los gases de escape del motor contienen monóxido de carbono, un gas venenoso que podría matarlo en minutos. No puede verlo ni olerlo. Instale solamente en exteriores. Instale alarmas de monóxido de carbono en el hogar.
La superficie caliente podría causar lesiones serias. No toque.
Los gases de escape del motor podrían incendiar materiales combustibles, lo que podría causar la muerte o lesiones serias. El lado de escape del gabinete impermeable debe tener un espacio libre de 5 pies (1,5 m) de distancia desde cualquier estructura, arbusto, árbol o cualquier vegetación.
Este equipo puede causar chispas que podrían iniciar incendios en vegetación seca. Podría requerirse un supresor de chispas. Póngase en contacto con las agencias locales de combate a incendios para consultar las regulaciones referentes a requisitos de prevención de incendios.

0010-70

RAINPROOF ENCLOSURE / ÉTANCHE À LA PLUIE ENCEINTE / GABINETE A PRUEBA DE LLUVIA

GENERATOR SERVICE DISCONNECT / GÉNÉRATRICE ENTRETIEN DÉBRANCHER / DESCONECTOR DE SERVICIO DEL GENERADOR

9 +12V W I F I
10 (B)
11 (A)
12 GND
13 +12V C E L L U L A R
14 (B)
15 (A)
16 GND

1 +12V
2 GND
3 Xfer
4 2-WIRE START
5
6
7 E-STOP
8

0010-80

25
26

0010-90

WARNING AVERTISSEMENT ADVERTENCIA

Cancer and Reproductive Harm
www.P65Warnings.ca.gov
Cancer et Troubles de l'Appareil Reproducteur
www.P65Warnings.ca.gov
Cáncer y Problemas Reproductivos
www.P65Warnings.ca.gov

0010-100

240 V- 240 V-

0010-110

0010-120

0010-130

L1
L2

0010-140

0010-150

0010-160

0010-170

0010-180

CAUTION MISE EN GARDE PRECAUCION

Connect output of generator to suitably rated transfer switch in accordance with the Canadian Electrical Code, Part 1.
Branchez la sortie de la génératrice à un commutateur convertisseur de classification convenable, selon le Code canadien de l'électricité, partie 1.
Conecte la salida del generador a un interruptor de transferencia de la capacidad adecuada de acuerdo con el Código Eléctrico Canadiense, Parte 1.

0010-190

WARNING AVERTISSEMENT ADVERTENCIA

Generator starts automatically which could result in serious injury. Place switch in off and disconnect battery prior to servicing.
La génératrice démarre automatiquement, ce qui pourrait entraîner des blessures graves. Placez le commutateur en position arrêt et débranchez la batterie avant d'effectuer un entretien.
El generador arranca automáticamente, lo que podría causar lesiones serias. Coloque el interruptor en apagado y desconecte la batería antes de realizar algún servicio.

NOTICE AVIS AVISO

FUEL REQUIREMENTS
Estimated generator fuel supply requirements for both natural gas and LP vapor:

EXIGENCES EN MATIÈRE DE CARBURANT
Approximativement approximatif en carburant pour le gaz naturel et le propane gazeux :

REQUERIMIENTOS DE COMBUSTIBLE
Requerimientos estimados de combustible para el generador para gas natural y gas LP:

	Natural Gas Gas naturel		LP Vapor Propane gazeux	
	BTU/H	m3/h	BTU/H	m3/h
8KW	121,000	3.43	141,000	1.60
10KW	169,000	4.79	164,000	1.86
12KW	172,000	4.86	209,000	2.36
17KW	248,000	7.02	295,000	3.34
20KW	280,000	7.36	337,500	3.82

Fuel inlet pressure requirements at full load are:
Les exigences de pression d'admission du carburant à plein rendement sont :
Los requerimientos de presión de entrada de combustible a carga completa son de:

FUEL TYPE	Inches of WC	mm of WC
TYPE DE CARBURANT	pouces CE	mm de CE
TIPO DE COMBUSTIBLE	pulgadas de columna de agua	mm de columna de agua

Natural Gas / Gaz naturel / Propane gazeux / Gas LP

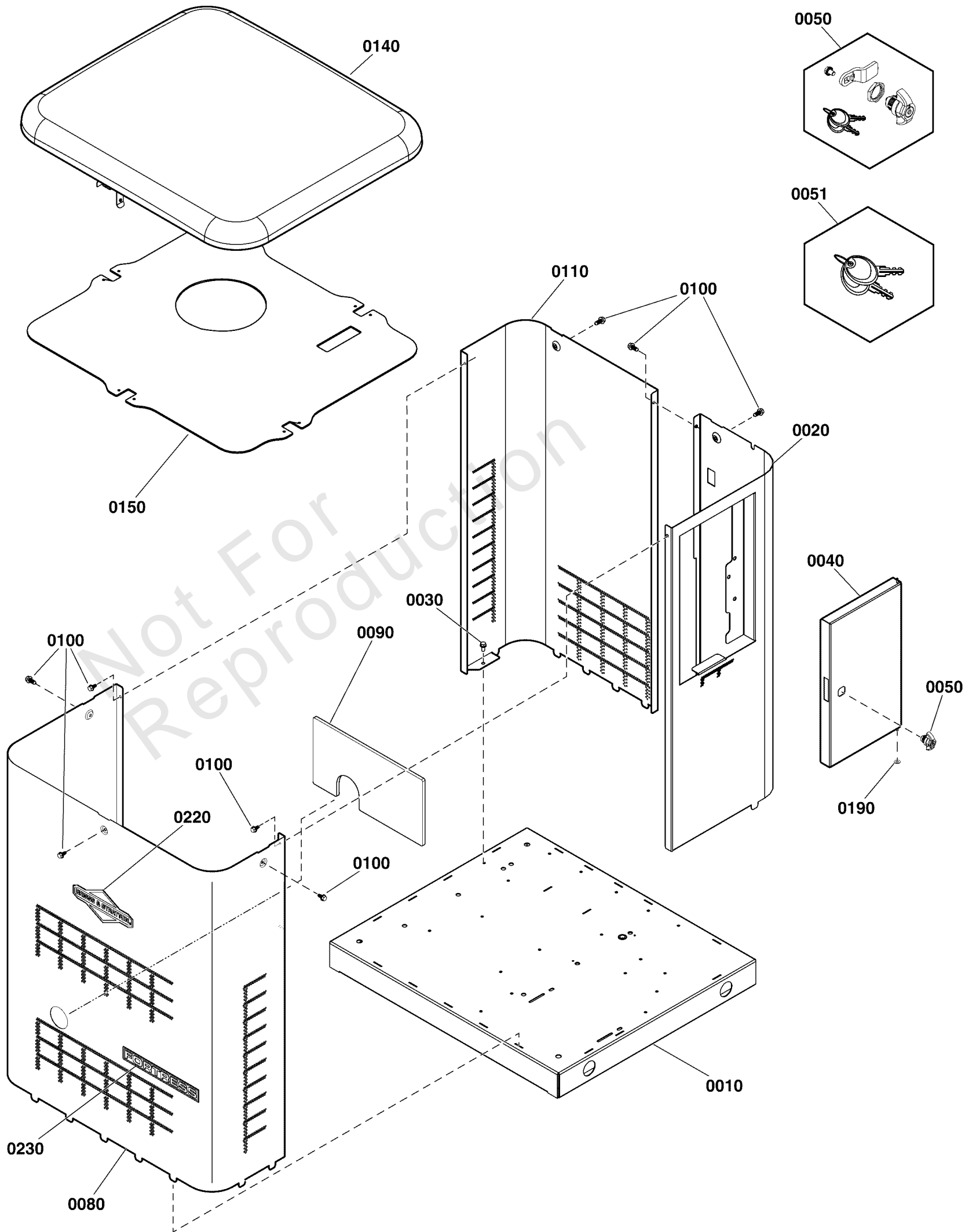
Decals Group

REF NO	PART NO	QTY	DESCRIPTION
0010	84002195	1	DECAL SHEET - WARNINGS -(Includes items 0010-0010 thru 0010-0190)
0010-10	-----	1	DECAL-WARNING, SHOCK
0010-20	-----	1	DECAL, Warning, Battery
0010-30	-----	1	DECAL-WARNING, FUSE
0010-40	-----	1	DECAL-WARNING, HOT SURFACE
0010-50	-----	1	DECAL, Warning, Manual
0010-60	-----	1	DECAL-WARNING, EXHAUST
0010-70	-----	1	DECAL-RAINPROOF ENCLOSURE
0010-80	-----	1	DECAL-DISCONNECT
0010-90	-----	1	DECAL-TERMINAL, 25/26
0010-100	-----	1	DECAL, Terminal Strip
0010-110	-----	1	DECAL, Terminal Strip
0010-120	-----	1	DECAL, External Power Switch
0010-130	-----	1	DECAL, Neutral
0010-140	-----	1	DECAL, L1/L2
0010-150	-----	1	DECAL, Ground
0010-160	-----	1	DECAL, Warning -(The installation of this decal is required for units manufactured after 08/30/2018 and sold in the state of California.)
0010-170	-----	2	DECAL, 240 VAC
0010-180	-----	1	DECAL, Notice Fuel Requirements
0010-190	-----	1	DECAL, Warning

Enclosure Group

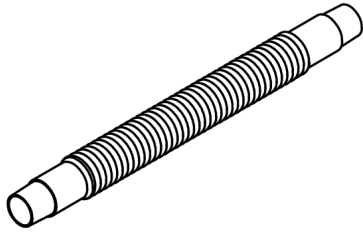
Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 040591-00



Enclosure Group

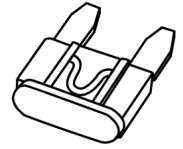
REF NO	PART NO	QTY	DESCRIPTION
0010	704967	1	BASE
0020	772352	1	PANEL, Right Back
0030	704130	3	SCREW, HEX, 1/4-20X.5
0040	772353	1	DOOR, Enclosure
0050	195998GS	1	KIT, Door Latch
0051	207652GS	1	SET, Latch Key, Plain
0070	706937	1	PLUG -(Not Illustrated)
0080	772354	1	PANEL, Front
0090	706938	1	PANEL, Muffler Guard
0100	703884	8	SCREW, #10-16 X 5/8
0110	772355	1	PANEL, Left Back
0140	84002199	1	ROOF
0150	772349	1	PANEL, Roof Divider
0190	703929	1	WASHER-FLAT, NYLON
0220	770011	1	DECAL
0230	770458	1	BADGE, Fortress
0240	316193GS	1	PLUG, Roof -(Not Illustrated)



0010



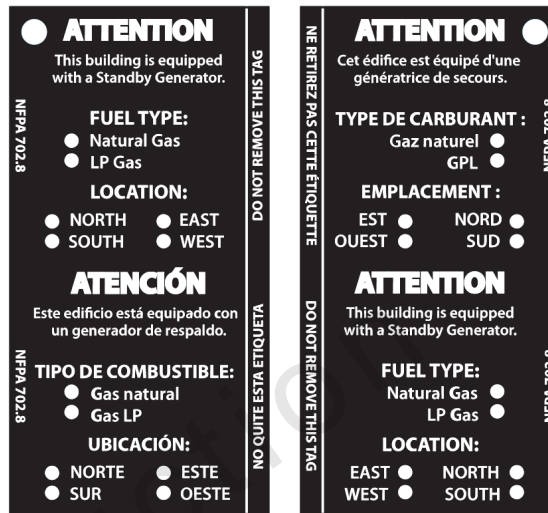
0020



0040



0060



0080

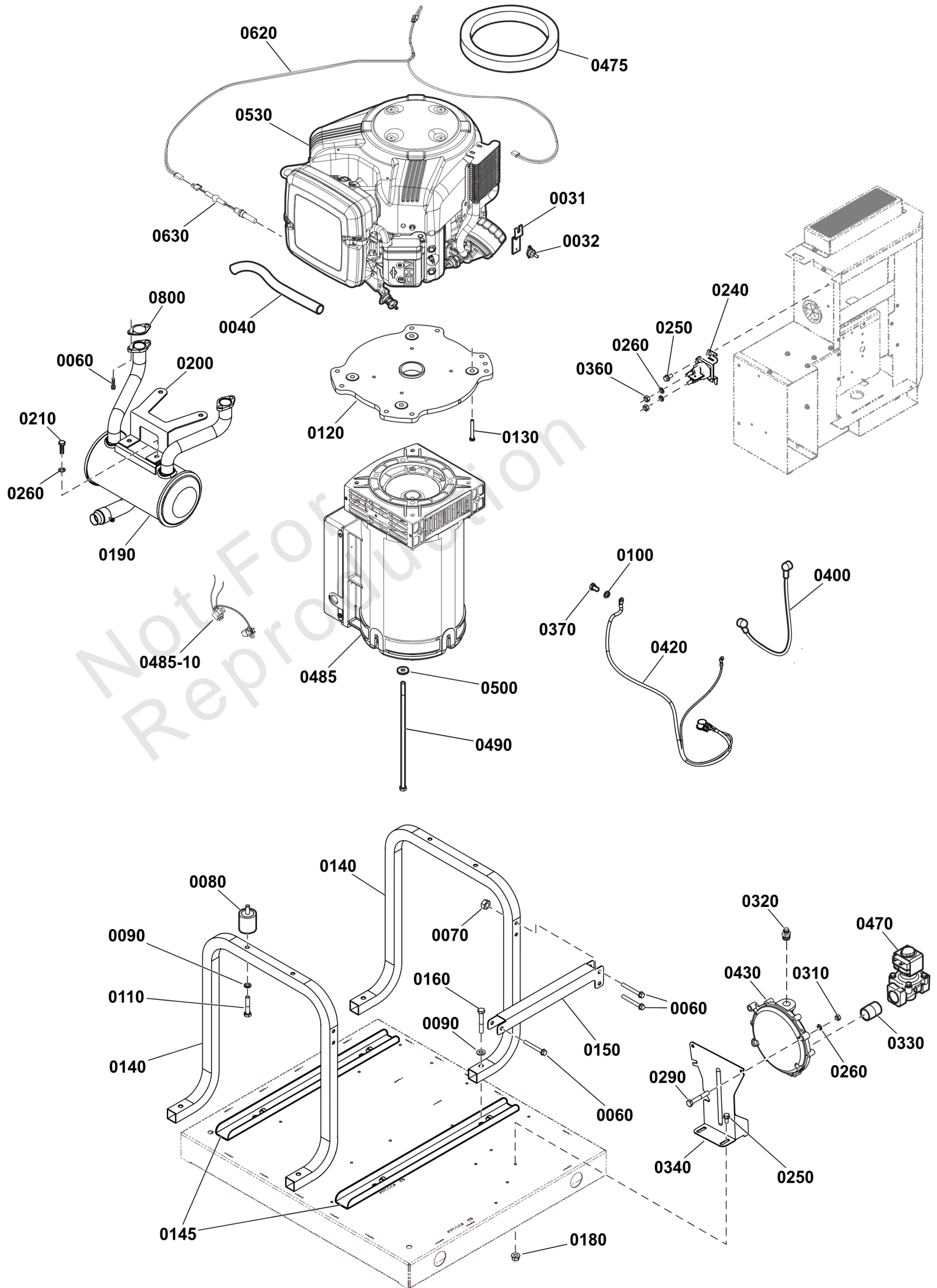


0090

Manuals & Accessories Group

REF NO	PART NO	QTY	DESCRIPTION
0010	202295GS	1	HOSE-FLEX NG/LPG
0020	207652GS	1	SET, Latch Key, Plain
0040	198573GS	2	FUSE, Auto Type, 15 Amp
0060	198460GS	4	PLUG, Dome
0080	706988	1	HANG TAG-ATTN. STANDBY EQUIPMENT
0090	704130	2	SCREW, HEX, 1/4-20X.5

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Power Group

REF NO	PART NO	QTY	DESCRIPTION
0031	195124GS	1	PLATE, Temp Switch
0032	204426GS	1	SWITCH, Temperature
0040	5048681SM	1	HOSE, OIL DRAIN
0060	94220	4	SCREW
0070	80003921	4	NUT,1/4-20,KEPS,CONICAL WSHR,ZC/CL
0080	189108GS	4	MOUNT, Vibration
0090	22145GS	8	WASHER, Flat, 5/16 - M8
0100	22129GS	10	WASHER, Lock
0110	57821GS	4	CAPSCREW, Hex Head, M8-1.25 x 40
0120	319353GS	1	ADAPTER-ENGINE
0130	80005605	4	SCREW 3/8-16X1.500 HEX WSHR HD TT ZC/CL
0140	BF319470GS	2	CRADLE
0145	706923	2	PLATE, CRADLE SUPPORT
0150	319471GS	1	BRACKET
0160	-----	4	SCREW, 5/16-18 X 2
0180	189160GS	3	NUT, 5/16 - 18, Flange Serrated
0190	706924	1	MUFFLER
0200	704682	1	BRACKET, Muffler
0210	43116GS	2	HHCS, M6 - 1.0 x 12
0240	772333	1	SOLENOID, Starter
0250	704130	2	SCREW, HEX, 1/4-20X.5
0260	22097GS	5	WASHER
0290	38750GS	2	HHCS, M6 - 1.0 x 30
0310	49813GS	2	NUT, Hex, M6 - 1.0
0320	202382GS	1	FITTING, 1/2 Flare 3/8 - 18 NPT
0330	206976GS	1	FITTING
0340	706379	1	BRACKET
0360	-----	1	NUT, Hex, 1/4-20
0370	-----	1	SCREW, M8-1.25 X 12 -(*See footnote)
0400	316814GS	1	WIRE, Starter Solenoid
0420	316817GS	1	WIRE, Battery, Negative
0430	706992	1	REGULATOR-FUEL
0470	318880GS	1	SOLENOID, Fuel
0475	316881GS	1	SEAL
0485	772334	1	ALTERNATOR
0485-10	84011102	1	BRUSH ASSEMBLY
0490	706941	1	BOLT
0500	96796GS	1	WASHER, Flat M8.4 x 22.2 x 3
0530	3895750003E1	1	ENGINE -(**See footnote)
0620	84003363	1	HARNESS, Cold Weather Kit
0630	84003361	1	HEATER, Oil, 55W 240V
0800	691613	2	GASKET, Exhaust

Footnotes:

** To verify your specific engine model, please reference the ID Tag located on your engine. See your local Briggs & Stratton distributor for parts and service.

* Items without part numbers are common fasteners and are available at your local hardware store.

6537-00 - Wireless Module

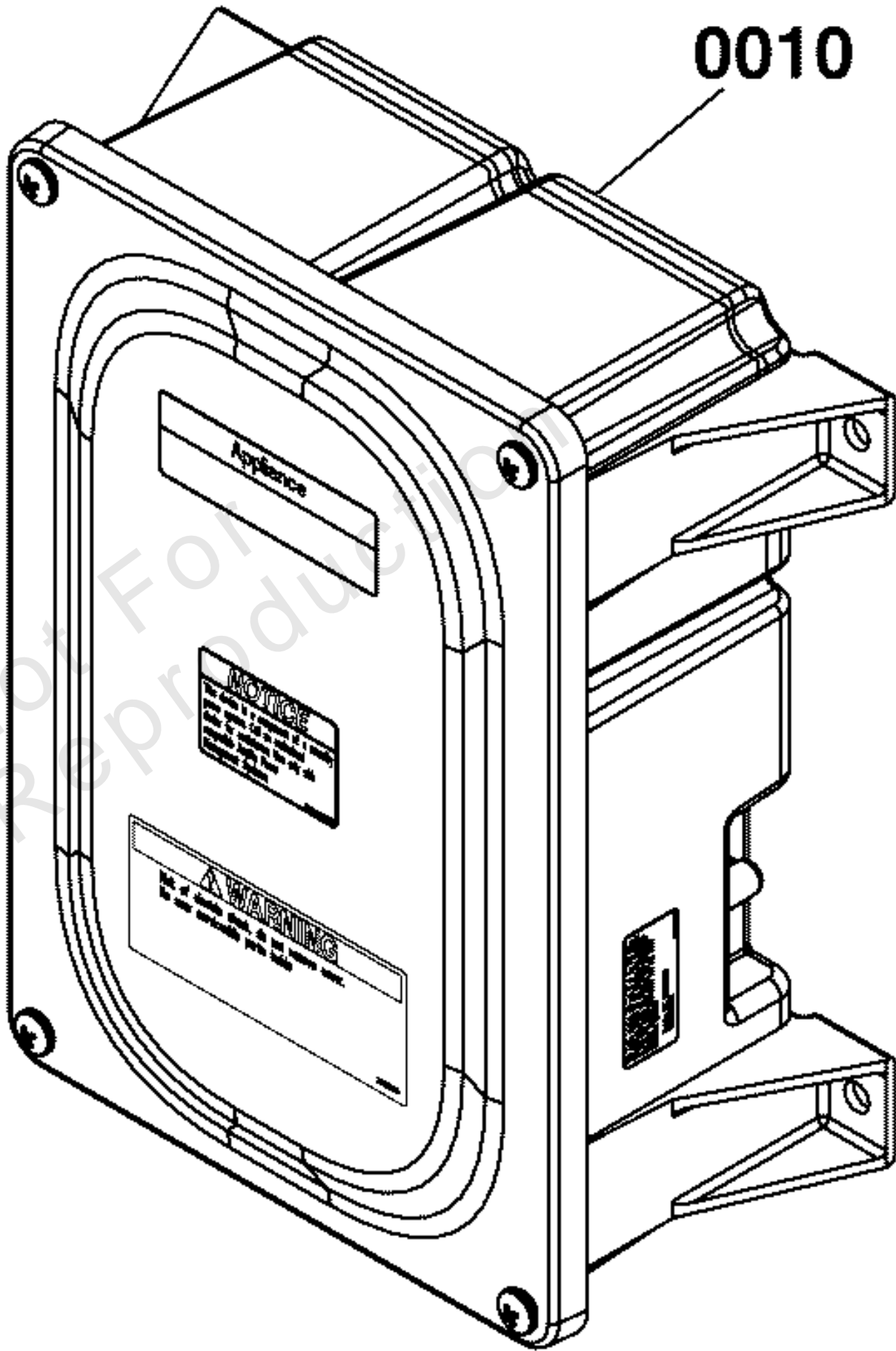


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Wireless Module

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6537-00



Wireless Module

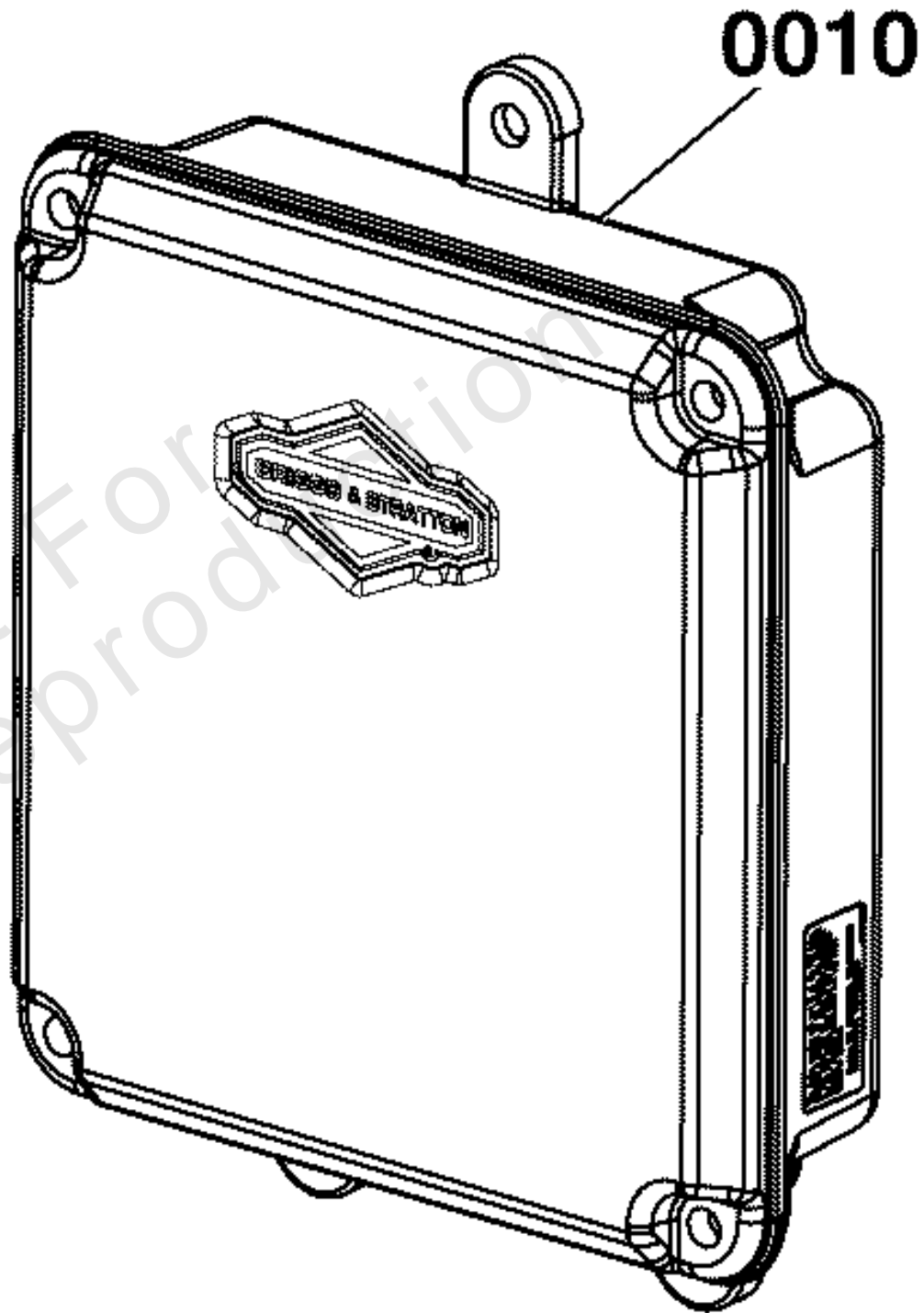
REF NO	PART NO	QTY	DESCRIPTION
0010	6537	1	ASSEMBLY, Module, Wireless 50A

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6520-00 - Wireless Gateway

Not For
Reproduction



Wireless Gateway

REF NO	PART NO	QTY	DESCRIPTION
0010	6520	1	ASSEMBLY, Wireless Gateway

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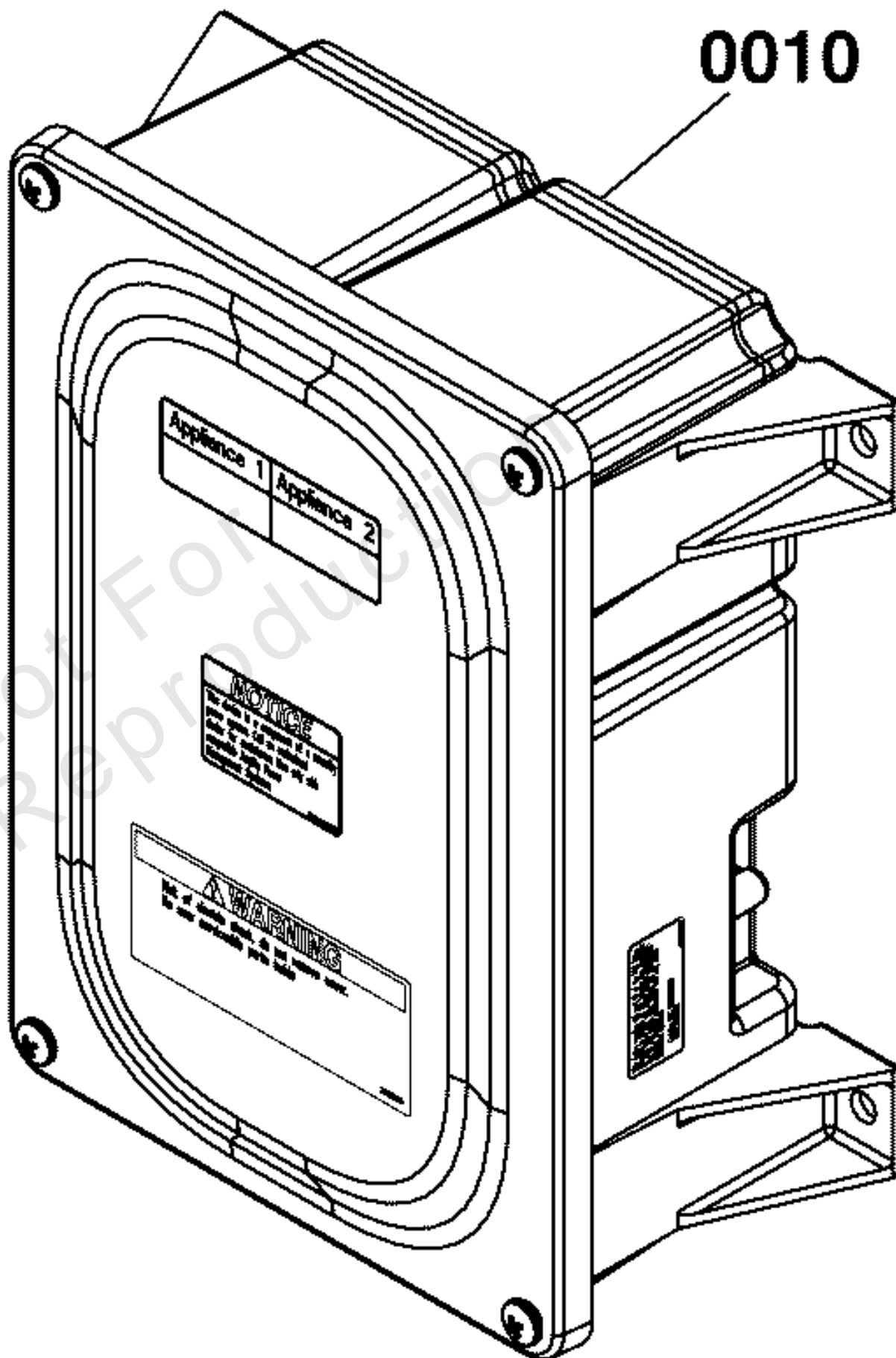
6536-00 - Low Voltage Module

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Low Voltage Module

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6536-00



Low Voltage Module

REF NO	PART NO	QTY	DESCRIPTION
0010	6536	1	ASSEMBLY, Module, Low Voltage

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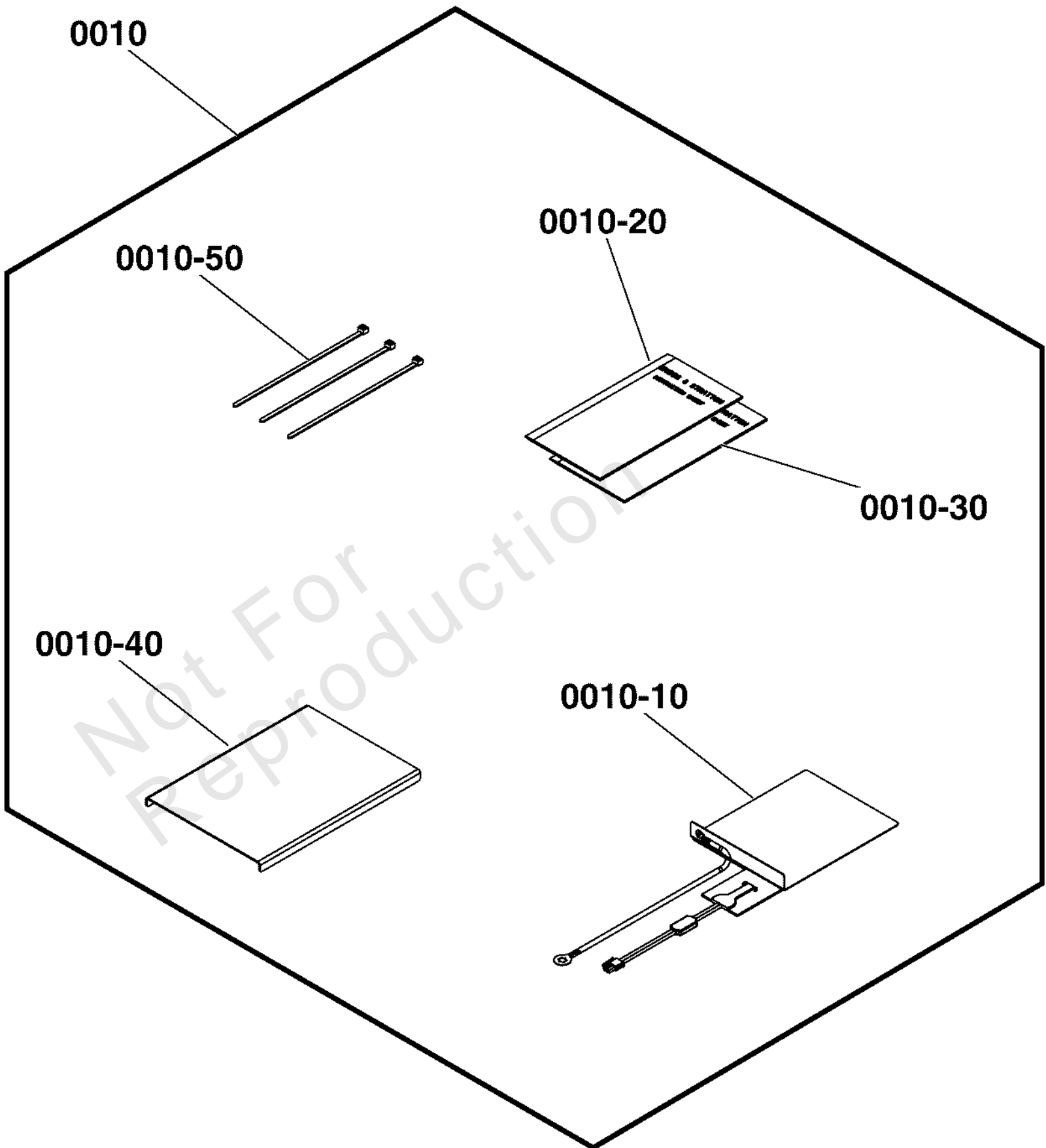
6578-00 - Cold Weather Kit

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Reproduction

Cold Weather Kit

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6578-00



Cold Weather Kit

REF NO	PART NO	QTY	DESCRIPTION
0010	6578	1	KIT, Cold Weather -(Incl. Ref. Nos. 0010-10, 0010-20, 0010-30, 0010-40, 0010-50)
0010-10	314941GS	1	PLATE, Warmer
0010-20	-----	1	INSTRUCTION SHEET, Cold Weather Engine
0010-30	-----	1	INSTRUCTION SHEET, Battery Warmer
0010-40	-----	1	BRACKET, Battery
0010-50	-----	3	TIEWRAP, 8" LG BLK

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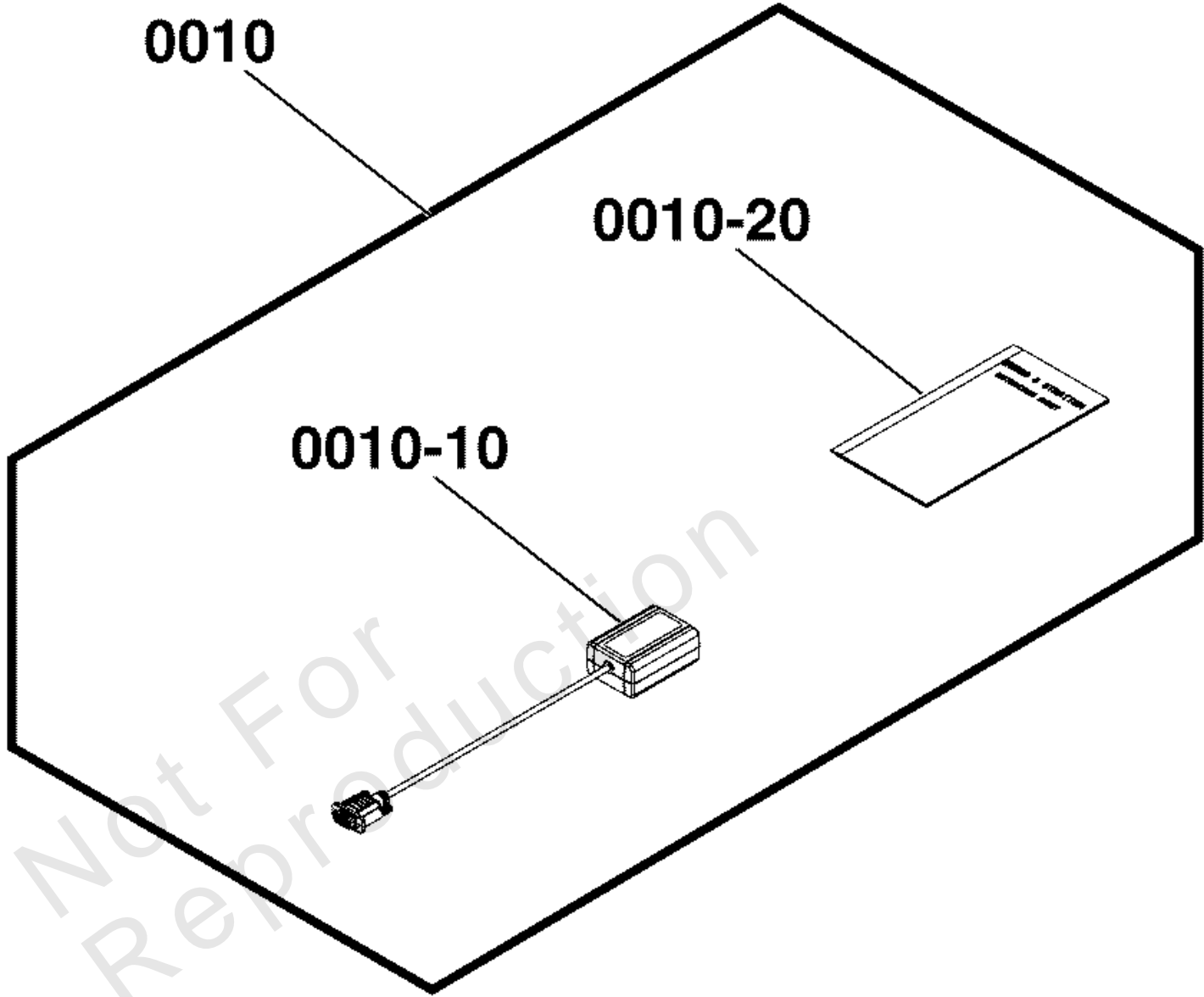
6538-00 - Bluetooth Service Dongle

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Bluetooth Service Dongle

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6538-00



Bluetooth Service Dongle

REF NO	PART NO	QTY	DESCRIPTION
0010	6538	1	KIT, Bluetooth Service Dongle -(Incl. Ref. Nos. 0010-10, 0010-20)
0010-10	-----	1	ASSEMBLY, Bluetooth Service Dongle
0010-20	-----	1	MANUAL, Operator

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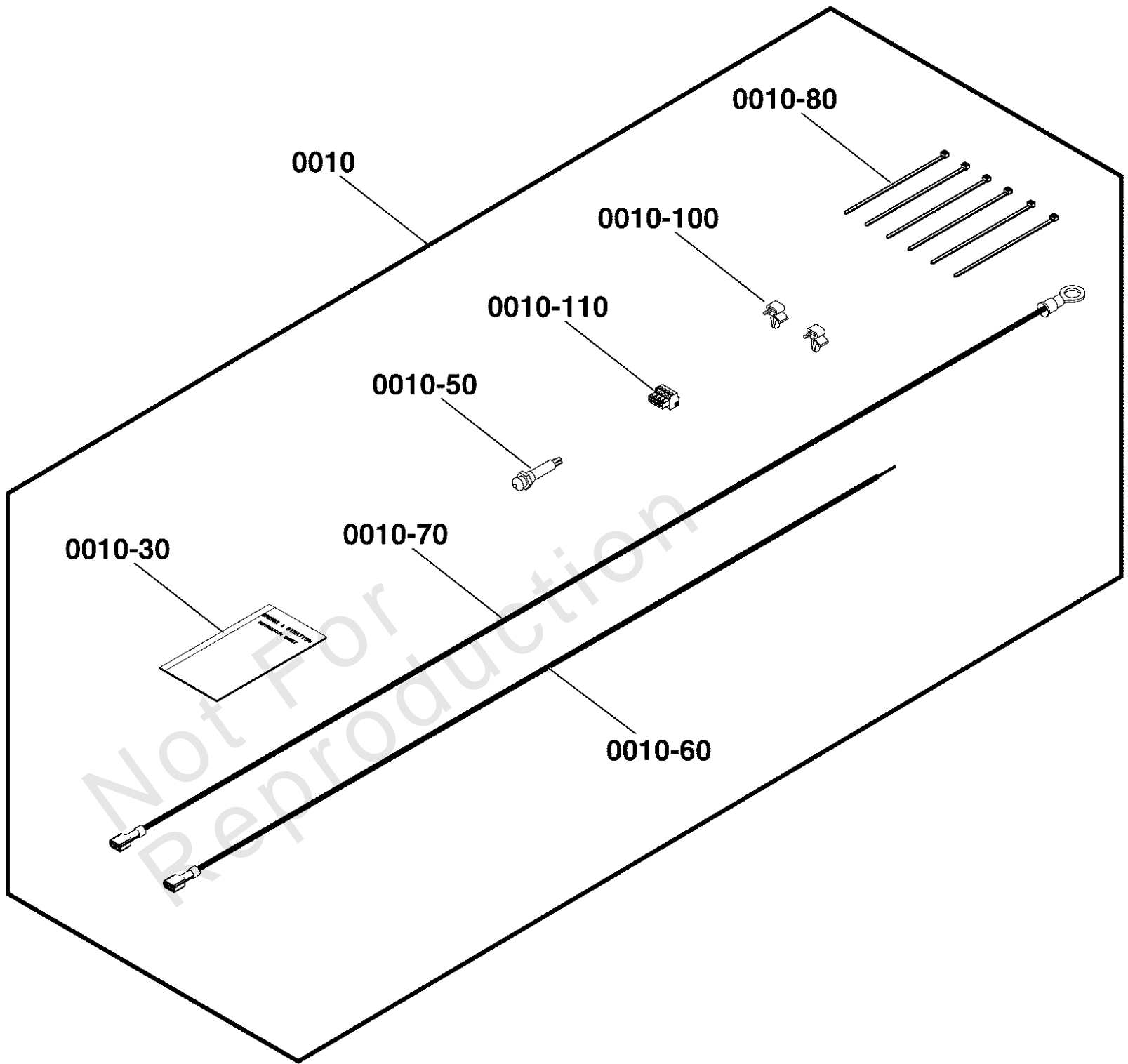
6535-00 - Generator Status LED Kit

Not For
Reproduction

6535-00 - Generator Status LED Kit

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6535-00



6535-00 - Generator Status LED Kit

REF NO	PART NO	QTY	DESCRIPTION
0010	6535	1	KIT, Generator Status LED
0010-30	-----	1	MANUAL, Operator
0010-50	-----	1	INDICATOR, LED, Blue
0010-60	-----	1	HARNESS, Generator Status, Positive
0010-70	-----	1	HARNESS, Generator Status, Negative
0010-80	29333AGS	6	TIEWRAP, 7 LG BLK
0010-100	195733GS	2	MOUNT, Tie Wrap
0010-110	-----	1	CONNECTOR, 4 Position

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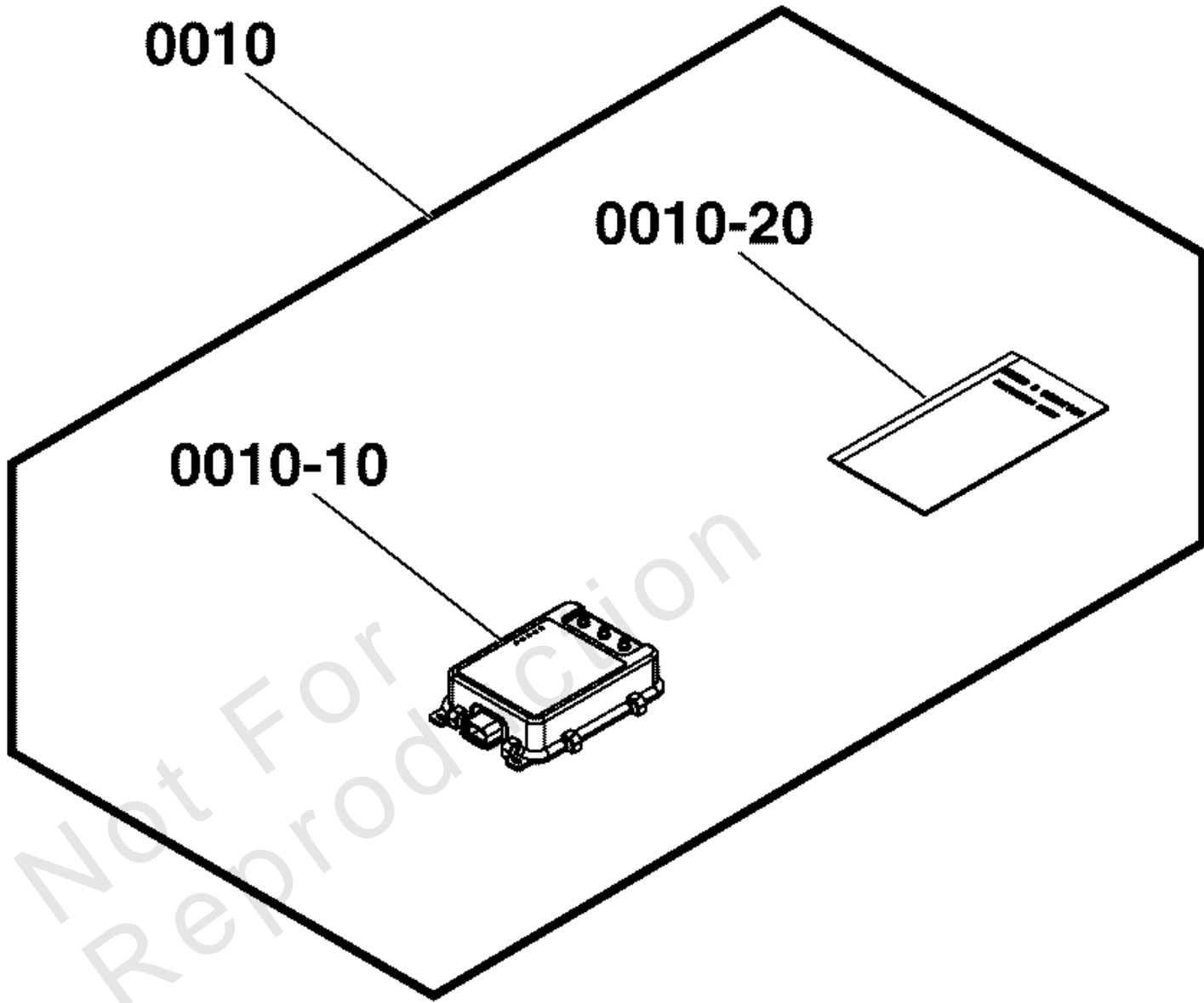
6519-00 - Cellular Communication Module

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Cellular Communication Module

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6519-00



Cellular Communication Module

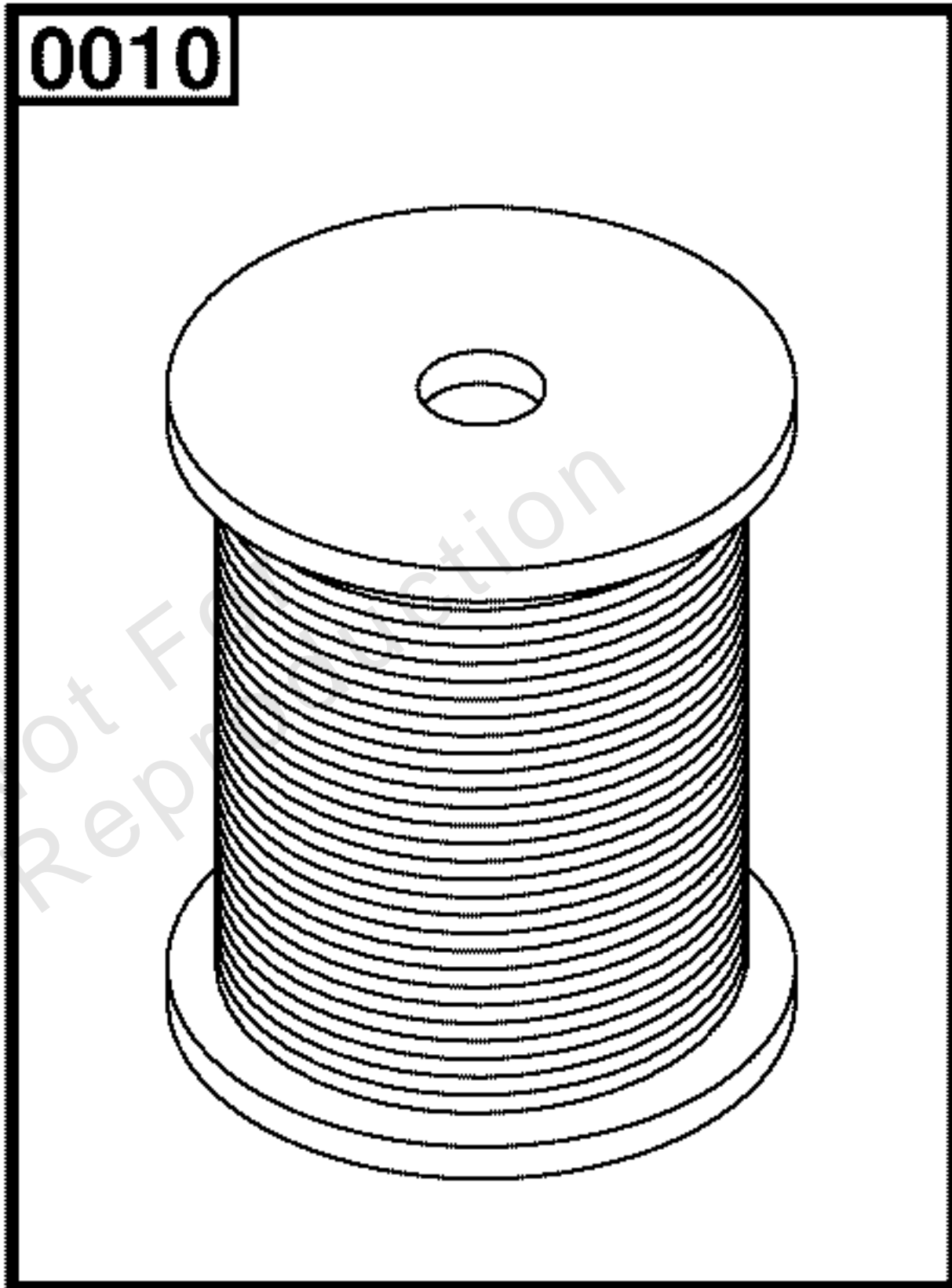
REF NO	PART NO	QTY	DESCRIPTION
0010	6519	1	KIT, Cellular Communication Module -(Incl. Ref. Nos. 0010-10, 0010-20)
0010-10	-----	1	MODULE, Cellular Communication
0010-20	-----	1	MANUAL, Operator

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6539-00 - Wire Spool Kit



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Wire Spool Kit

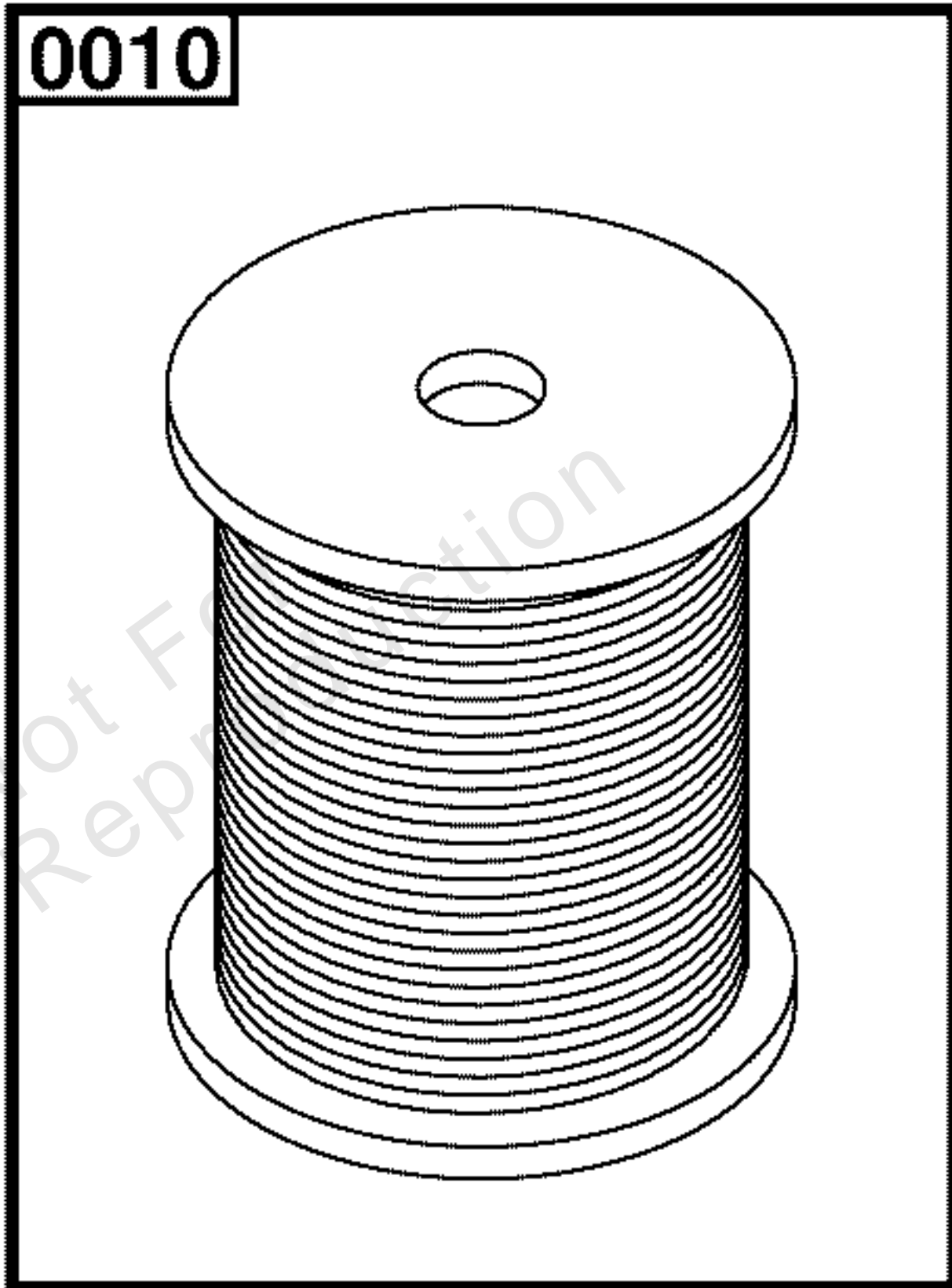
REF NO	PART NO	QTY	DESCRIPTION
0010	6539	1	SPOOL, Wire, Twisted Pair, 500 FT.

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6540-00 - Wire Spool Kit



Not For
Reproduction



Wire Spool Kit - WIP

REF NO	PART NO	QTY	DESCRIPTION
0010	6540	1	SPOOL, Wire, Twisted Pair, 200 FT.

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6541-00 - Wire Spool Kit

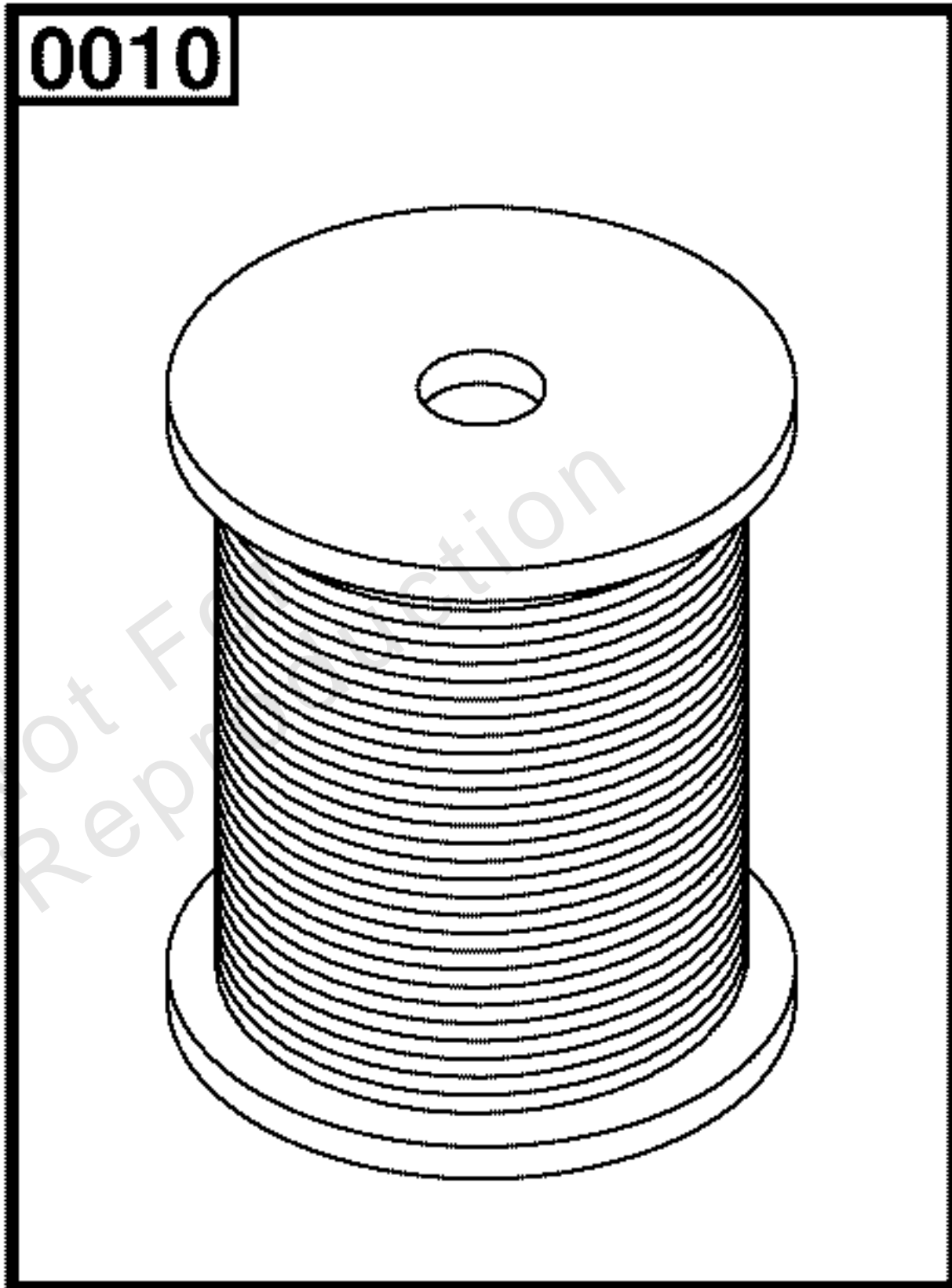


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Wire Spool Kit

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6541-00



Wire Spool Kit

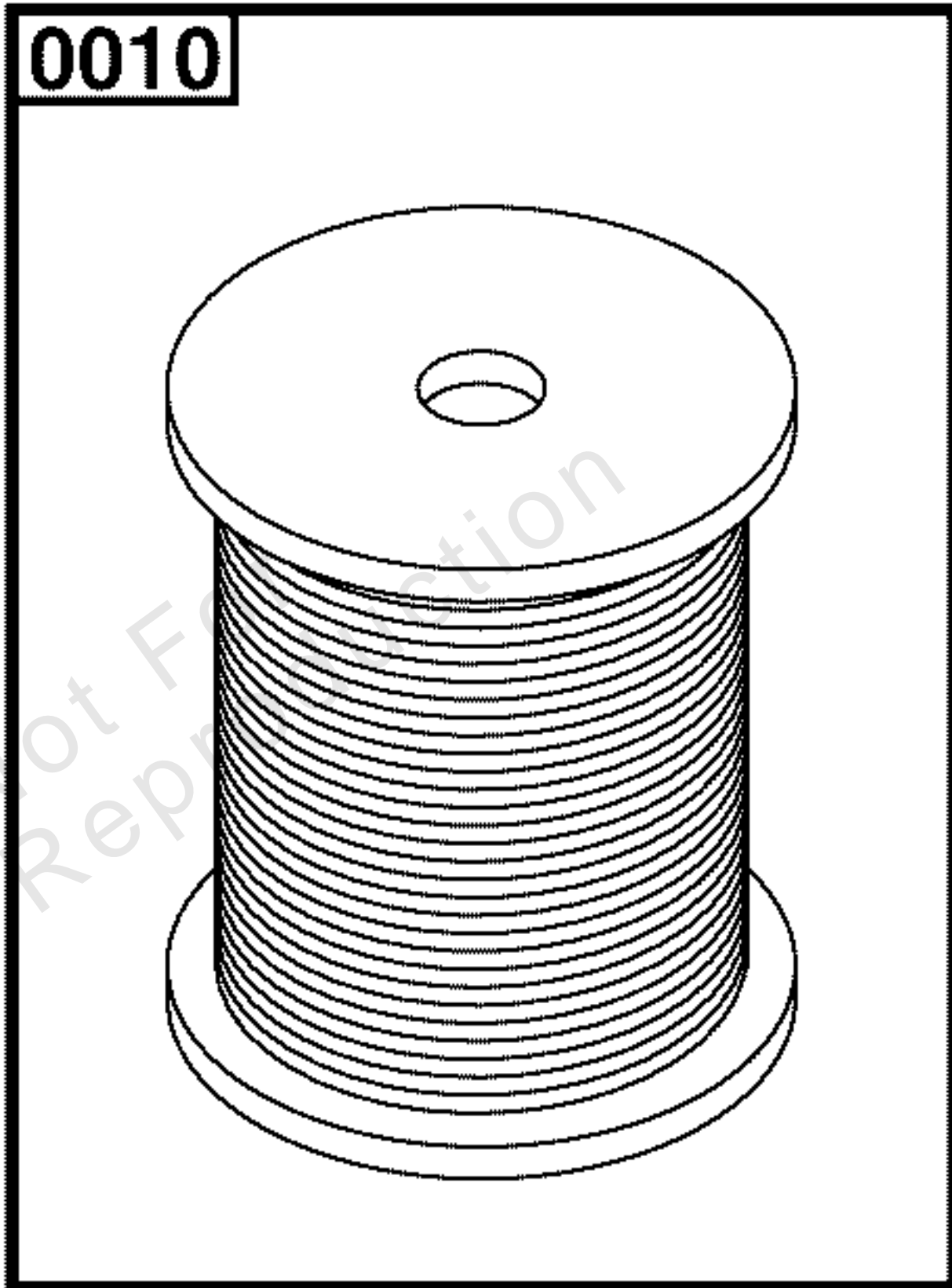
REF NO	PART NO	QTY	DESCRIPTION
0010	6541	1	SPOOL, Wire, Twisted Pair, 100 FT.

Not For Reproduction

6542-00 - Wire Spool Kit



Not For
Reproduction



Wire Spool Kit

REF NO	PART NO	QTY	DESCRIPTION
0010	6542	1	SPOOL, Wire, Twisted Pair, 1000 FT.

Not For Reproduction



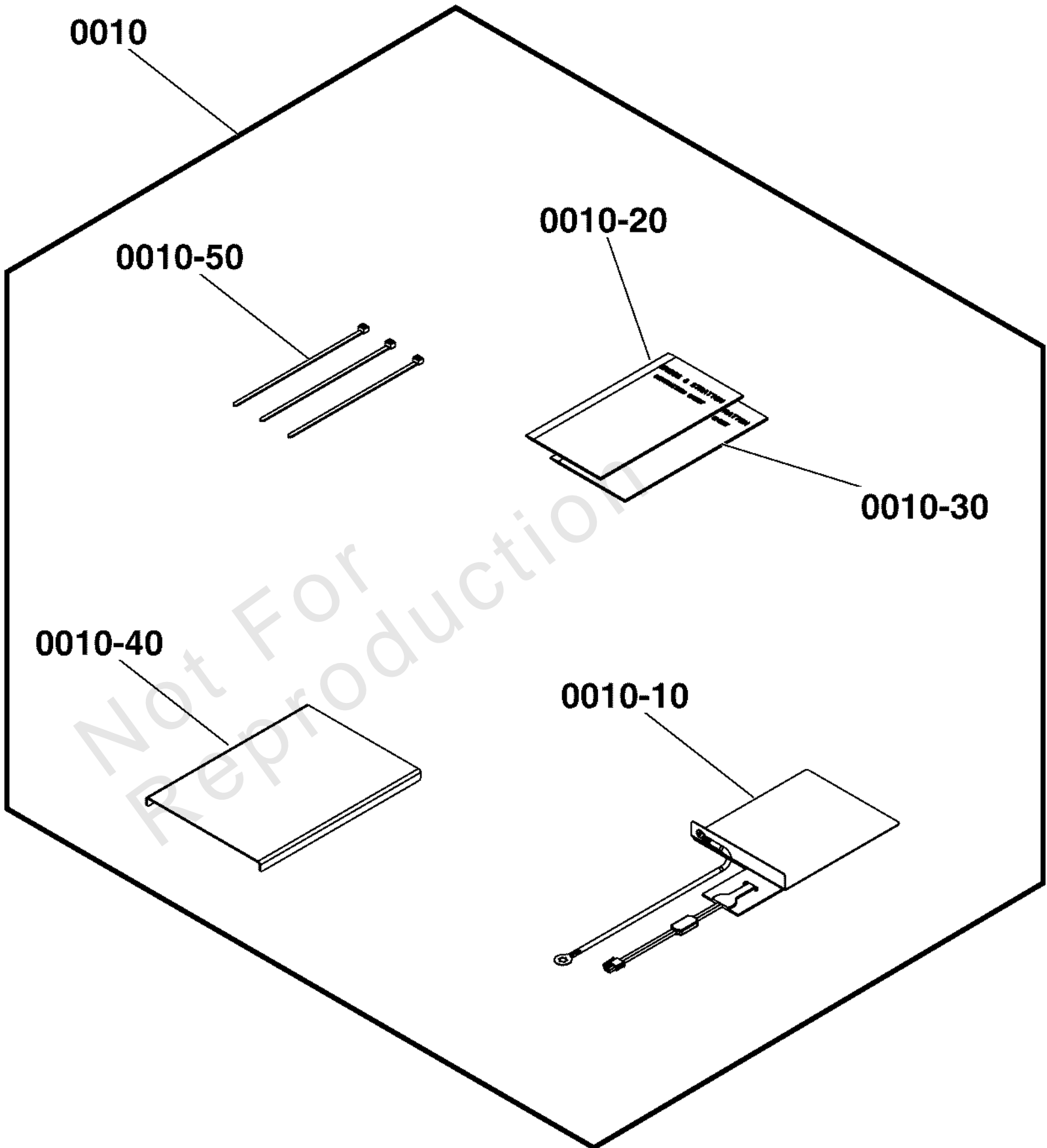
6578-01 - Cold Weather Kit

Not For
Reproduction

Cold Weather Kit

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 6578-01



Cold Weather Kit

REF NO	PART NO	QTY	DESCRIPTION
0010	6578	1	KIT, Cold Weather -(Incl. Ref. Nos. 0010-10, 0010-20, 0010-30, 0010-40, 0010-50)
0010-10	314941GS	1	PLATE, Warmer
0010-20	-----	1	INSTRUCTION SHEET, Cold Weather Engine
0010-30	-----	1	INSTRUCTION SHEET, Battery Warmer
0010-40	-----	1	BRACKET, Battery
0010-50	-----	3	TIEWRAP, 8" LG BLK

Not For Reproduction

Hardware Identification & Torque Specifications

Torque Specification Chart								
FOR STANDARD METRIC MACHINE HARDWARE (Tolerance ± 20%)								
Property Class	5.6		8.8		10.9		12.9	
	Class 5.6		Class 8.8		Class 10.9		Class 12.9	
Size Of Hardware	in/lbs	Nm.	in/lbs	Nm.	in/lbs	Nm.	in/lbs	Nm.
	ft/lbs		ft/lbs		ft/lbs		ft/lbs	
M3	5.88	.56	13.44	1.28	19.2	1.80	22.92	2.15
M4	13.44	1.28	30.72	2.90	43.44	4.10	52.56	4.95
M5	26.4	2.50	60.96	5.75	5.97	8.10	7.15	9.7
M6	44.64	4.3	7.3	9.9	10.3	14	12.1	16.5
M7	5.2	7.1	12.1	16.5	16.9	23	19.9	27
M8	7.7	10.5	17.7	24	25	34	29	40
M10	15	21	35	48	50	67	59	81
M12	26	36	61	83	86.2	117	103	140
M14	42	58	101	132	136	185	162	220
M16	64	88	147	200	210	285	250	340
M18	89	121	202	275	287	390	346	470
M20	126	171	290	390	405	550	486	660
M22	169	230	390	530	559	745	656	890
M24	217	295	497	375	708	960	840	1140
M27	320	435	733	995	1032	1400	1239	1680
M30	435	590	995	1350	1401	1900	1681	2280
M33	590	800	1349	1830	1902	2580	2278	3090
M36	759	1030	1740	2360	2441	3310	2935	3980
M39	988	1340	2249	3050	3163	4290	3798	5150

Torque Specification Chart						
FOR STANDARD MACHINE HARDWARE (Tolerance ± 20%)						
Hardware Grade	No Marks		SAE Grade 5		SAE Grade 8	
	SAE Grade 2		SAE Grade 5		SAE Grade 8	
Size Of Hardware	in/lbs	Nm.	in/lbs	Nm.	in/lbs	Nm.
	ft/lbs		ft/lbs		ft/lbs	
8-32	19	2.1	30	3.4	41	4.6
8-36	20	2.3	31	3.5	43	4.9
10-24	27	3.1	43	4.9	60	6.8
10-32	31	3.5	49	5.5	68	7.7
1/4-20	66	7.6	8	10.9	12	16.3
1/4-28	76	8.6	10	13.6	14	19.0
5/16-18	11	15.0	17	23.1	25	34.0
5/16-24	12	16.3	19	25.8	29	34.0
3/8-16	20	27.2	30	40.8	45	61.2
3/8-24	23	31.3	35	47.6	50	68.0
7/16-14	30	40.8	50	68.0	70	95.2
7/16-20	35	47.6	55	74.8	80	108.8
1/2-13	50	68.0	75	102.0	110	149.6
1/2-20	55	74.8	90	122.4	120	163.2
9/16-12	65	88.4	110	149.6	150	204.0
9/16-18	75	102.0	120	163.2	170	231.2
5/8-11	90	122.4	150	204.0	220	299.2
5/8-18	100	136	180	244.8	240	326.4
3/4-10	160	217.6	260	353.6	386	525.0
3/4-16	180	244.8	300	408.0	420	571.2
7/8-9	140	190.4	400	544.0	600	816.0
7/8-14	155	210.8	440	598.4	660	897.6
1-8	220	299.2	580	788.8	900	1,244.0
1-12	240	326.4	640	870.4	1,000	1,360.0

The guides and ruler furnished below are designed to help you select the appropriate hardware.



Nut, M8

Thread Diameter (mm)

Inside Diameter (in) Threads per inch

Nut, 1/2-16



Screw, M8- 1.25 x 25

Thread Diameter (mm) Distance between threads (mm) Body Length (mm)

Body Diameter Threads per inch Body Length (in)

Screw, 1/2- 16 x 2



Standard Hardware Sizing

When a washer or nut is identified as 1/2" (M8), this is the *Nominal size*, meaning the *inside diameter* is 1/2 inch (8mm metric thread diameter); if a second number is present it represents the *threads per inch* (distance between threads).

When bolt or capscrew is identified as 1/2 - 16 x 2" (M8 - 1.25 x 50), this means the *Nominal size*, or body diameter is 1/2 inch (8mm metric thread diameter), the second number, 16, represents the *threads per inch*, (*distance between threads*). The final number is the body length of the bolt or screw, 2 inches (50mm).

NOTES

- These torque values are to be used for all hardware excluding: locknuts, self-tapping screws, thread forming screws, sheet metal screws and socket head setscrews.
- Recommended seating torque values for locknuts:
 - for prevailing torque locknuts - use 65% of grade 5 torques.
 - for flange whizlock nuts and screws - use 135% of grade 5 torques.
- Unless otherwise noted on assembly drawings, all torque values must meet this specification.

Common Hardware Types

Hex Head Capscrew



Washer



Carriage Bolt



Hex Nut

Wrench & Fastener Size Guide

1/4" Bolt or Nut Wrench—7/16"	5/16" Bolt or Nut Wrench—1/2"	3/8" Bolt or Nut Wrench—9/16"	7/16" Bolt or Nut Wrench (Bolt)—5/8" Wrench (Nut)—11/16"	1/2" Bolt or Nut Wrench—3/4"
M6 Bolt or Nut Wrench—10mm	M8 Bolt or Nut Wrench—13mm	M10 Bolt or Nut Wrench—17mm	M12 Bolt or Nut Wrench—19mm	M14 Bolt or Nut Wrench—22mm

