



Cable to Board (Narrow Footprint)

.050"

9 thru 100 Contacts

Rugged Cable

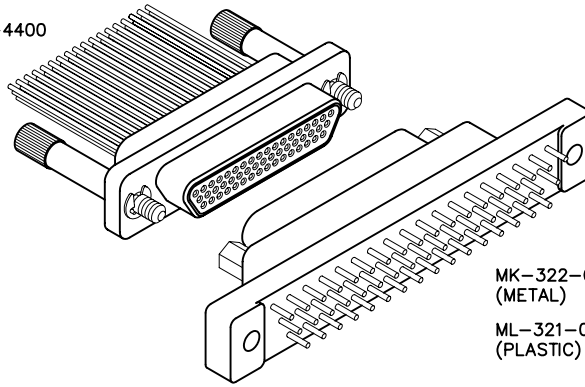
MM, MN

Rugged Board Mount

MK, ML

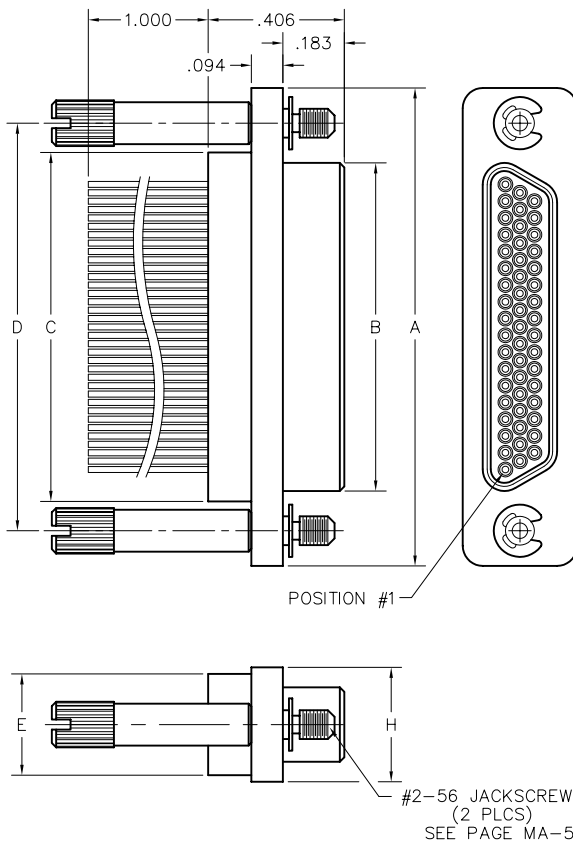
MM-312-051-153-4400
(METAL)

MN-311-051-153-4400
(PLASTIC)

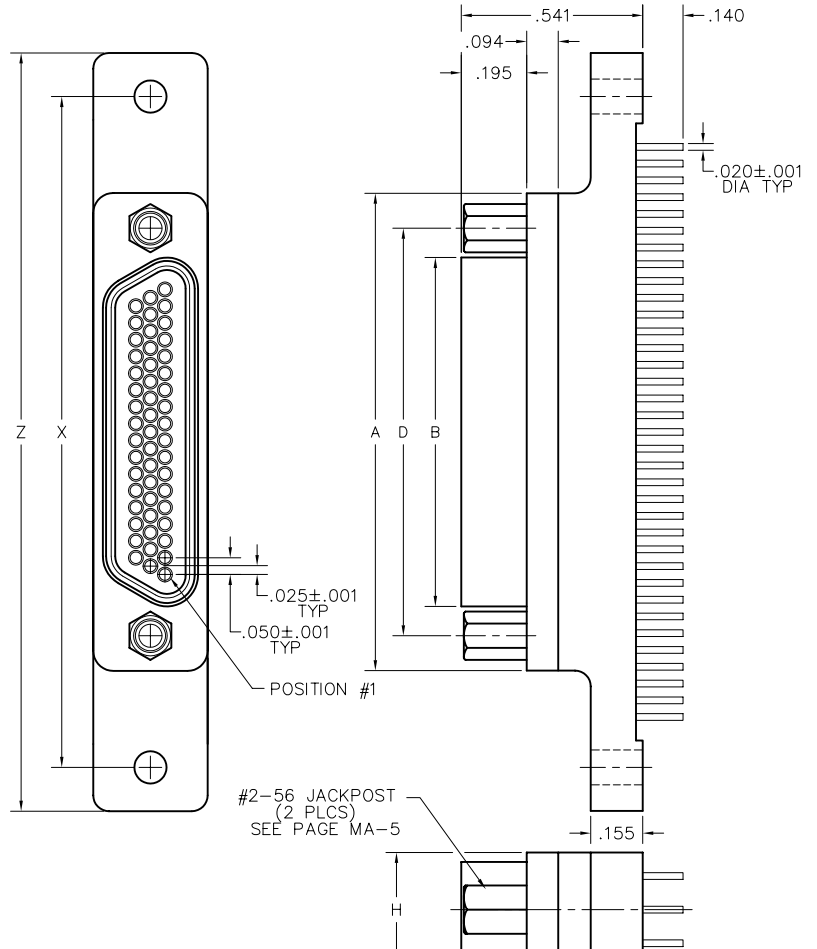


MK-322-051-235-2200
(METAL)

ML-321-051-235-2200
(PLASTIC)



PLUG



RECEPTACLE

DIMENSIONS													
SIZE	CONTACT ROWS	A	B		C	D	E		H	X	Z MAX	HARDWARE	MOUNTING HOLE
			PLUG MAX	RCPT MAX			POTTING	WELL MAX					
9	2	.775	.334	.400	.390	.565	.270	.298	1.150	1.390	#2-56 UNC THD (.092 DIA THRU)	.096 DIA OR #2-56 UNC THREADED INSERT	
15		.925	.484	.550	.540	.715							
21		1.075	.634	.700	.690	.865							
25		1.175	.734	.800	.790	.965							
31		1.325	.884	.950	.940	1.115							
37		1.475	1.034	1.100	1.090	1.265							
51	3	1.425	.984	1.050	1.040	1.215	.310	.341	2.000	2.270			
100	4	2.160	1.384	1.508	1.432	1.800	.360	.384	2.800	3.240	#4-40 UNC THD (.147 DIA THRU)	.125 DIA OR #2-56 UNC THREADED INSERT	

PLUG: MM-312-051-153-4400

RECEPTACLE: MK-322-051-235-2200

PLUG: MN-311-051-153-4400

RECEPTACLE: ML-321-051-235-2200

XX-XXX-XXX-XXX-XXXX-XXX

PLUG

RECEPTACLE

SERIES	
MM .050" Rugged Metal I/O Connector	MK .050" Rugged Metal PC Board Mount Connector
MN .050" Rugged Plastic I/O Connector	ML .050" Rugged Plastic PC Board Mount Connector
(MM & MN mate with MK, ML, MM, MN receptacles)	
(MK & ML mate with MK, ML, MM, MN plugs)	

BODY	
2 2-Row (Sizes 9 thru 37)	2 2-Row (Sizes 9 thru 37)
3 3-Row (Size 51)	3 3-Row (Size 51)
4 4-Row (Size 100)	4 4-Row (Size 100)
BODY STYLE: 1 Plug, straight, with ears	
BODY MATERIAL: 1 Polyphenylene Sulfide (MN only) 2 Polyphenylene Sulfide with electroless nickel shell 3 Polyphenylene Sulfide with electrodeposited cadmium shell ☒ 4 Polyphenylene Sulfide with hard anodized black shell 5 Polyphenylene Sulfide with stainless steel shell	
BODY STYLE: 2 Receptacle, straight, narrow footprint, w/ mtg holes	
BODY MATERIAL: 1 Polyphenylene Sulfide (ML only) 2 Polyphenylene Sulfide with electroless nickel shell 3 Polyphenylene Sulfide with electrodeposited cadmium shell ☒ 4 Polyphenylene Sulfide with hard anodized black shell 5 Polyphenylene Sulfide with stainless steel shell	

SIZE	
XXX 009, 015, 021, 025, 031, 037, 051, 100	XXX 009, 015, 021, 025, 031, 037, 051, 100

CONTACTS	
TYPE CONTACTS/TERMINATIONS: 11 Pin, straight, solder cup 14 Pin, straight, .500" pigtails (.018 dia) 15 Pin, straight, 1.000" pigtails (.018 dia) 16 Pin, straight, crimped wire	TYPE CONTACTS/TERMINATIONS: 22 Socket, straight, PCB leads, .109" 23 Socket, straight, PCB leads, .140" 24 Socket, straight, PCB leads, .172"
PLATING OPTIONS: 1 50 μ" Au contacts (crimp wire) 3 50 μ" Au contacts; 10 μ" Au terminations (solder cup, pigtail) 5 50 μ" Au contacts; Sn/Pb alloy terminations (pigtail) ☒ 7 50 μ" Au contacts; SAC305 terminations (pigtail)	PLATING OPTIONS: 3 50 μ" Au contacts; 10 μ" Au terminations 5 50 μ" Au contacts; Sn/Pb alloy terminations ☒ 7 50 μ" Au contacts; SAC305 terminations

HARDWARE	
STYLE OF HARDWARE: 00 None 22 Two fixed jacknut assemblies (62*) 41 Two turning jackscrews, allen head, retaining ring (81*) Two long turning jackscrews, allen head, retaining ring (82*) 43 Two turning jackscrews, slot head, retaining ring (83*) 44 Two long turning jackscrews, slot head, retaining ring (84*) 45 Two turning jackscrews, allen head, captivated** (85*) 99 Keying hardware, see options below (Body material 2, 3 and 4 only)	STYLE OF HARDWARE: 00 None 22 Two fixed jacknut assemblies (62*) 99 Keying hardware, see options below (Body material 2, 3 and 4 only)
POLARIZATION / WIRING: 00 None XX For wiring codes, see page MA-3 & MA-4	POLARIZATION / WIRING: 00 None

OPTIONS	
KSXX Two turning jackscrews. See page MA-6 for keying options (KJ*)	KPXX Two fixed jacknuts and interfacial sealing gasket. See page MA-6 for keying options (KN*)
	900 Interfacial sealing gasket
	0B7 Threaded inserts and interfacial sealing gasket

* = Use numbers or letters in parenthesis when ordering size 100.

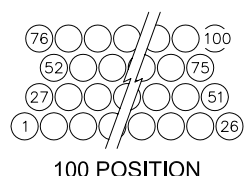
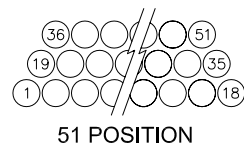
** = Captive hardware is factory installed and non-removable.

☒ = Option not RoHS compliant

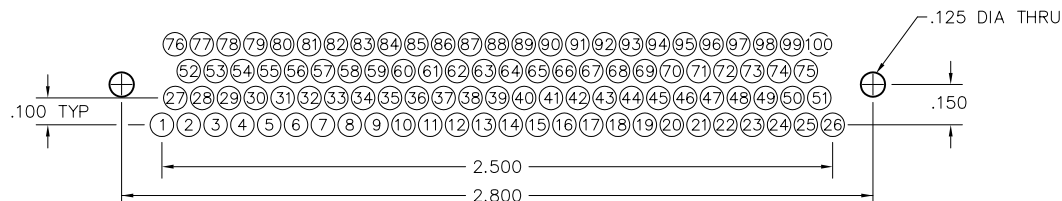
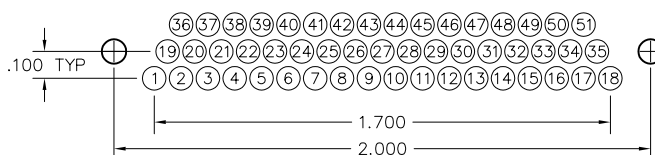
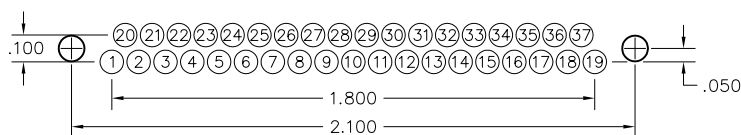
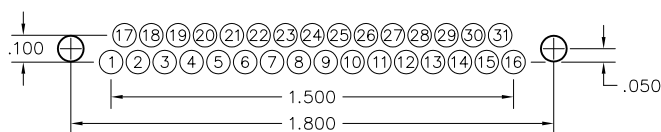
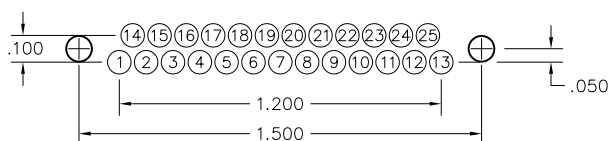
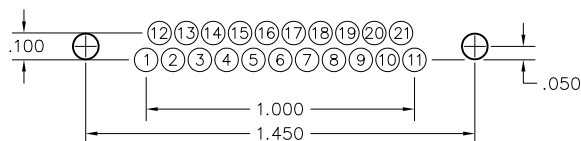
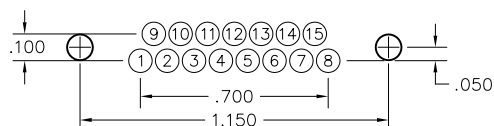
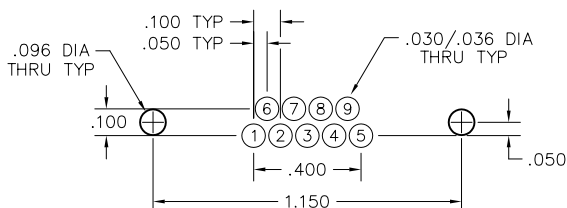
Recommended PC Board Layout

Straight, Narrow Footprint

CONNECTOR MATING FACE (RECEPTACLE)



RECEPTACLE PC BOARD LAYOUT COMPONENT SIDE



Specifications

Materials and Finishes *

Contacts:	Pins: BeCu alloy strip per ASTM B194 Sockets: Brass per ASTM B121 / B121M or ASTM B16 / B16M or ASTM B453
Contact Finish:**	Gold plate per ASTM B488
Shells:	Aluminum Alloy 6061-T6 per SAE AMS-QQ-A-250/11 or 6061-T6511 per SAE AMS-QQ-A-200/8 or Stainless Steel 300 series per ASTM A484 / A484M and ASTM A582 / A582M Passivated per SAE AMS2700
Aluminum Shell Finishes:**	Electroless Nickel per SAE AMS2404, Class 3, 500 μ " min Electrodeposited Cadmium per SAE AMS-QQ-P-416, Type II, Class 3 Black Anodized per MIL-A-8625, Type III, Class 2 Gold per MIL-DTL-45204, Type II, Grade C, Class 0
Molded Insulators:	Glass filled polyphenylene sulfide per MIL-M-24519
Embedment:	Frey Engineering Co. insulating compound CF3003-80 and L-II-49 or equivalent
Jackscrews, Jackposts and Nuts:	Corrosion resistant steel per ASTM A320 or ASTM A484 / A484M and ASTM A582 / A582M Passivated per SAE AMS2700
Clips and Washers:	Corrosion resistant steel per ASME 18.24 or NASM35333 or ASTM A484/A484M and ASTM A582/A582M (For reference only: ASME 18.24 CRS per ASTM A693 and NASM35333 CRS per ASTM A240) Passivated per ASME 18.24 or NASM35333 or SAE AMS2700 (For reference only: ASME 18.24 and NASM35333 passivated per SAE AMS2700)
Guide Pins	Corrosion resistant steel per ASTM A484 / A484M and ASTM A582 / A582M Passivated per SAE AMS2700
Latches	Beryllium copper in accordance with ASTM B194 Electroless Nickel plate per SAE AMS2404
Interfacial Seal Gaskets:	Fluorosilicone per SAE AMS-R-25988
Tolerances:**	Unless otherwise specified: Fractions = $\pm 1/64$ " Decimals = $\pm .010$ " Angles = $\pm 5^\circ$ Wire lengths: insulated/stranded = $+1.0"/-0.0$ " uninsulated/solid = $+0.2"/-0.0$ "

Note: AirBorn can manufacture special configurations for your exact specifications.

* = Reference the above listed specifications or an equivalent industry standard when applicable

** = When ordering to Mil Spec P/N, Mil Spec requirements apply



Performance

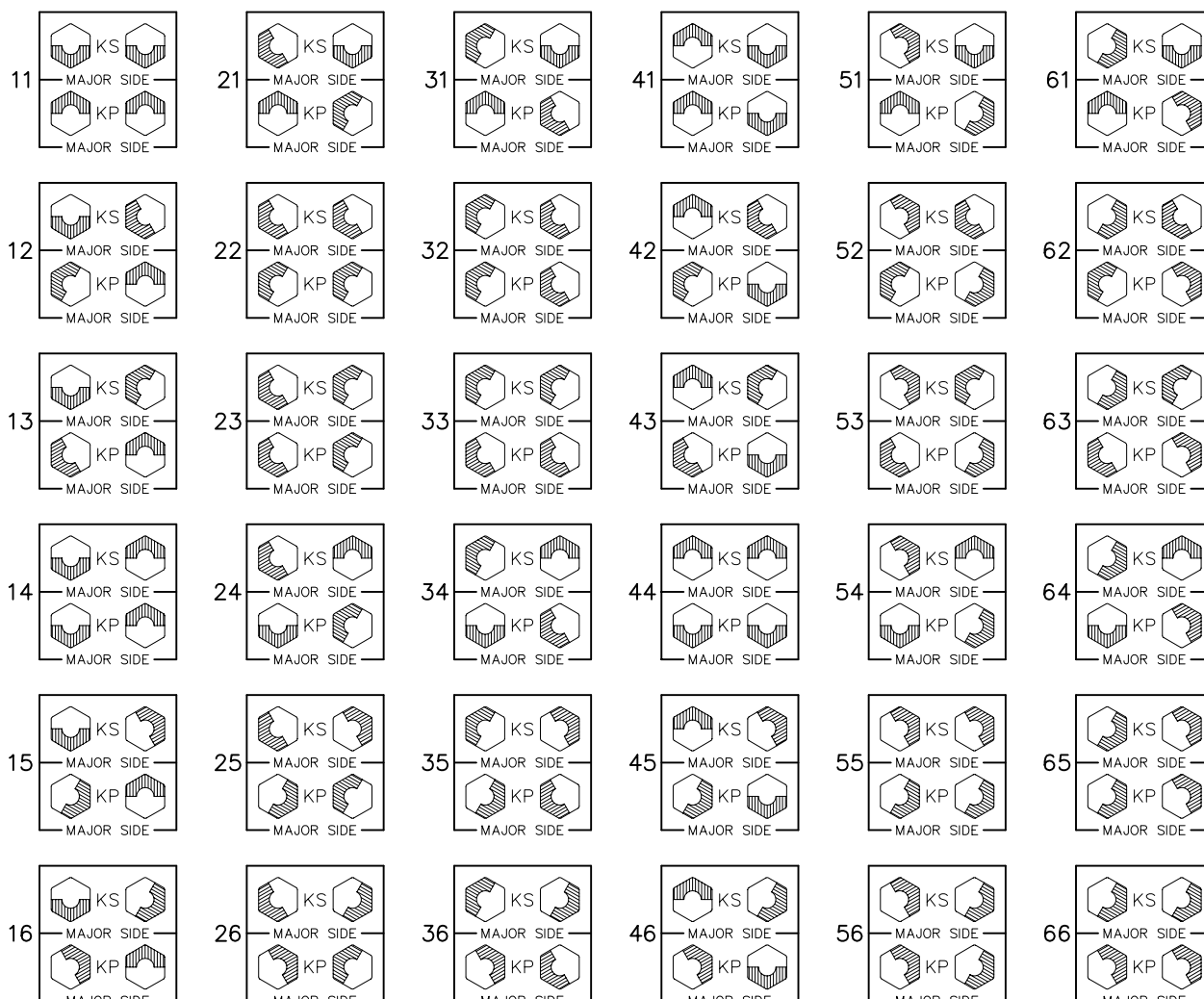
Reference MIL-DTL-83513

AirBorn "M" Series meets or exceeds MIL-DTL-83513 Performance Specifications

Contact Rating:	3-amperes maximum
Solderability:	Terminals (except crimp) tested in accordance with MIL-STD-202, Method 208
Wire Size:	Stranded #26 AWG or solid #25 AWG standard (consult factory for other sizes and types)
Test Voltage:	600 V, RMS, 60 Hz
Operating Temperature:	-55° C to +125° C
Insulation Resistance:	5,000 megohms minimum @ 500 VDC
Durability:	500 connector mating cycles
Vibration:	Tested in accordance with MIL-STD-1344, Method 2005, Condition IV, according to MIL-83513
Shock:	Tested in accordance with MIL-STD-1344, Method 2004, Condition E, according to MIL-83513
Salt Spray:	Mated connectors tested in accordance with MIL-STD-1344, Method 1001, Test Condition B
Humidity:	Mated connectors tested in accordance with MIL-STD-1344, Method 1002, Type II (except steps 7a and 7b)
Thermal Shock:	Tested to the temperature extremes of MIL-STD-1344, Method 1003, Test Condition A (except step 3, temperature shall be 125° C)
Contact Resistance:	0.065 volt maximum drop @ 2.5 amps (.026 ohms)
Contact Engaging Force:	6.0 ounce maximum, with .0221 diameter test sleeve per contact
Contact Separating Force:	0.5 ounce minimum, with .0230 diameter test sleeve per contact
Crimp Strength:	5 pound minimum tensile strength
Mating & Unmating Force:	10 ounces maximum per contact

Call (972) 931-3200 · Fax (972) 931-9305 · www.AirBorn.com

Polarized Keying Hardware

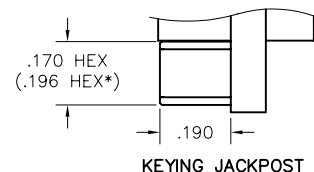
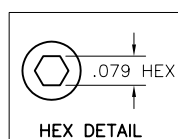
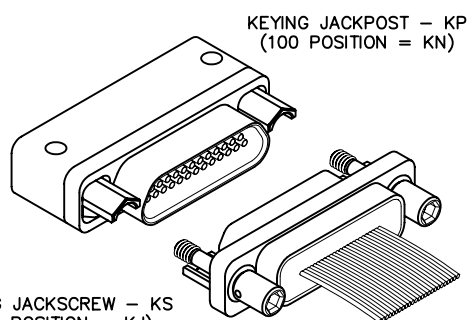


Select the appropriate two digit number above and include as the last two digits of the hardware code in the part number.
(Keying hardware is factory installed and non-removable).

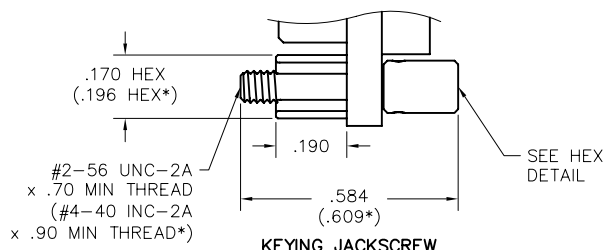
Example:

MM-213-025-161-99WA-KS11

MK-263-025-435-990S-KP11



KEYING JACKPOST



KEYING JACKSCREW

* = Dimensions for 100 position connectors

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

AirBorn:

MK-425-100-245-0000	MK-425-100-245-6200	MK-423-100-245-6200	MK-422-100-245-0000	MK-325-051-235-0000
MK-325-051-235-2200	MK-225-037-245-2200	MK-225-031-225-2200	MK-225-037-235-0000	MK-225-009-245-2200
MK-225-025-245-0000	MK-225-015-245-0000	MK-225-025-235-2200	MK-225-009-245-0000	MK-225-031-245-0000
MK-225-025-225-0000	MK-225-009-235-2200	MK-225-015-235-0000	MK-225-037-225-0000	MK-422-100-235-6200
MK-423-100-235-6200	MK-422-100-245-6200	MK-425-100-235-6200	MK-325-051-245-0000	MK-325-051-225-2200
MK-325-051-225-0000	MK-425-100-235-0000	MK-325-051-245-2200	MK-225-015-225-0000	MK-225-025-245-2200
MK-225-037-225-2200	MK-225-021-245-0000	MK-225-031-245-2200	MK-225-015-245-2200	MK-225-021-245-2200
MK-225-037-245-0000	MK-225-015-225-2200	MK-225-015-235-2200	MK-225-031-235-2200	MK-225-037-235-2200
MK-225-021-225-2200	MK-225-025-235-0000	MK-225-025-225-2200	MK-225-009-225-0000	MK-225-009-235-0000
MK-225-009-225-2200	MK-225-021-235-0000	MK-225-021-225-0000	MK-225-031-235-0000	MK-225-031-225-0000
MK-225-021-235-2200	ML-221-025-235-2200	ML-221-009-225-2200	MK-422-100-243-6200	ML-221-015-225-2200