




**WARRANTY**  
CAMPAIGN

**SNOWMOBILES**  
**WARRANTY**  
Bulletin



**CAUTION:** All involved customers must be notified, all involved units must be corrected as per instructions herein.

Campaign no.: 2012-0022

August 15, 2013

Subject: **800R E-TEC - Piston Replacement**

No. **2012-22**

**(For vehicles used at an Altitude Below  
1200m (4000ft))**

YEAR	MODEL	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2012	Freeride 800R E-TEC	137	VACA, VACB, VACC, VACD, VACE	See list attached
		146	VBCA, VBCB, VBCC, VBCE, VBCE	
		154	VCCA, VCCB, VCCC, VCCD, VCCE, VDCA (racing)	
	GSX 800R E-TEC	SE	DPCA, DPCB	
	MX Z 800R E-TEC	TNT	UCCB, UCCC	
		X	MZCB, MZCC, MZCD, MZCE, MZCF, MZCG, MZCH, MZCJ	
		X-RS	MXCA, MXCB, MXCC, MXCD, MXCE, MXCF, MXCH, MXCJ, MXCK	
	Renegade 800R E-TEC	Adrenaline	UFCA, UFCB	
		Back Country	UGCA, UGCB	
		Back Country X	UKCA, UKCB, UKCC, UKCE, UKCF, UKCG, UKCH, UKCJ	
		X	BACA, BACB, BACC, BACD	
	Summit 800R E-TEC	SP	CTCA, CTCC, CUCB, CUCD, CWCA, CWCC	
		X	UNCA, UNCB, UNCC, UNCD, UNCE, UPCA, UPCB, UPCC, UPCD, UPCE, URCA, URCB, URCC, URCD	

## PROBLEM

Under certain sea-level riding conditions, the piston ring groove may wear prematurely leading to performance loss and possible engine damage.

## SOLUTION

Replace pistons, if the vehicle meets both of the following requirements:

- Vehicle used generally at an altitude below 1 200 m (4,000 ft).
- Vehicle has reached 5 000 km (3,125 mi).

## REQUIRED PARTS

### Inside North America

DESCRIPTION	PART NUMBER	QTY
Piston Kit	415 129 844	1
Coolant	219 700 362	4 liters

### Outside North America

DESCRIPTION	PART NUMBER	QTY
Piston Kit	619 400 097	1
Coolant	619 590 183	4 liters

Parts need to be ordered through regular channels.

**NOTE:** The Piston Kit includes enough gaskets to repair the majority of vehicles. If different thickness are required, you need to order them separately.

GASKET THICKNESS	PART NUMBER	INCLUDED IN THE KIT
0.5 mm	420 430 080	NO
0.6 mm	420 430 081	NO
0.7 mm	420 430 082	YES
0.8 mm	420 430 083	YES
0.9 mm	420 430 084	YES
1.0 mm	420 430 085	YES
1.1 mm	420 430 086	NO
1.2 mm	420 430 087	NO

## PROCEDURE



PROCEDURE HIGHLIGHTS
Replace piston as described in the appropriate shop manual
Perform piston projection measurement
Perform a fuel system leak test
Erase fault codes
Re-initialization engine break-in B.U.D.S.

## Piston Replacement

For piston replacement procedure, refer to appropriate shop manual.

SHOP MANUAL	PART NUMBER
2012 Shop Manual REV-XP/REV-XR	(P/N 219 100 561)

## Piston Projection Measurement

REQUIRED TOOLS	
PISTON PROJECTION (P/N 529 036 215)	
TDC DIAL INDICATOR (P/N 295 000 143)	

1. Install the TDC dial indicator on the piston projection tool.
2. Place piston projection tool on a flat steel surface.
3. Rotate dial indicator face to position the **0** in line with needle.



SETTING THE ZERO

4. Install tool on PTO cylinder.

- Center tool with cylinder to ensure that dial indicator reads piston dome.



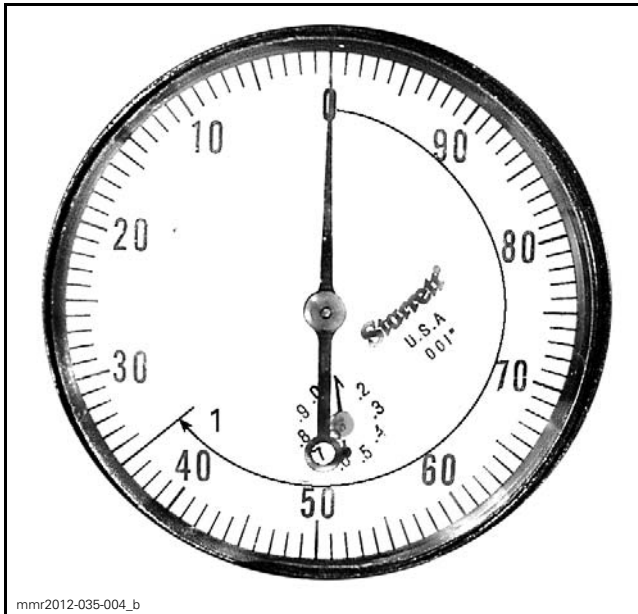
mnr2011-010-003

TOOL PROPERLY CENTERED

- Ensure that PTO piston is set to TDC.
- Read dial indicator as follows:
  - Calculate the number of notches the pointer traveled.
 

**NOTE:** The gauge pointer will move clockwise. Read the pointer travel, NOT the number where the pointer stops.
  - Note measurement.

Example:



mnr2012-035-004\_b

- Pointer travel: 64 notches, which means .064 inch

**NOTE:** In the example above, the correct measure is .064 inch, (NOT .036 inch).



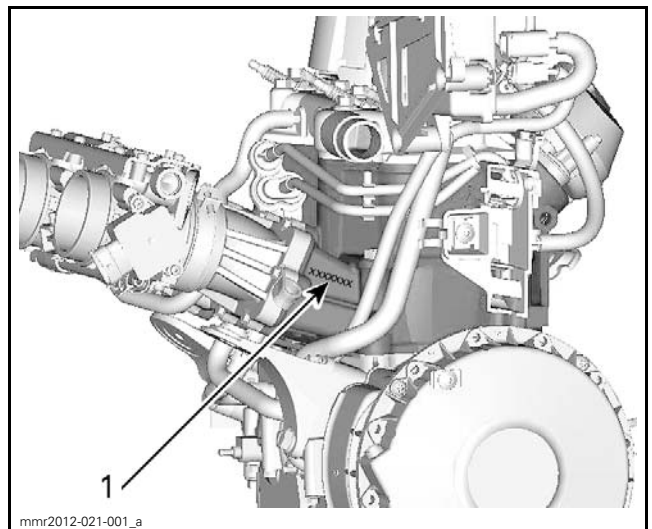
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TYPICAL

- Check if piston projection is according to specification.

PISTON PROJECTION SPECIFICATION		
MODEL	SERVICE LIMIT	ENGINE BLOCK IDENTIFICATION NUMBER
Freeride (CAN/USA) Summit (CAN/USA)	1.82 mm to 1.92 mm (.072 in to .076 in)	6413041
All Other	1.62 mm to 1.72 mm (.064 in to .068 in)	6413046

The cylinder block identification number is located on the intake flange of cylinder block.



mnr2012-021-001\_a

- Identification number

**NOTICE** Take care to use the proper specification according to the type of engine and the model of vehicle.



- If piston projection is out of specification, replace base gasket.

**NOTE:** A thicker base gasket will lower the piston projection measurement.

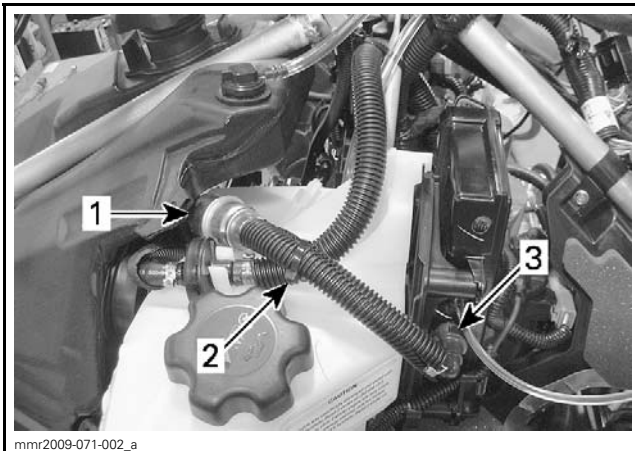
Refer to *CYLINDER BASE GASKET* table in *TOP END (800R ENGINES)* subsection of the *2012 SHOP MANUAL REV-XP/REV-XR*

10. Reinstall engine parts.

## Fuel System Leak Test

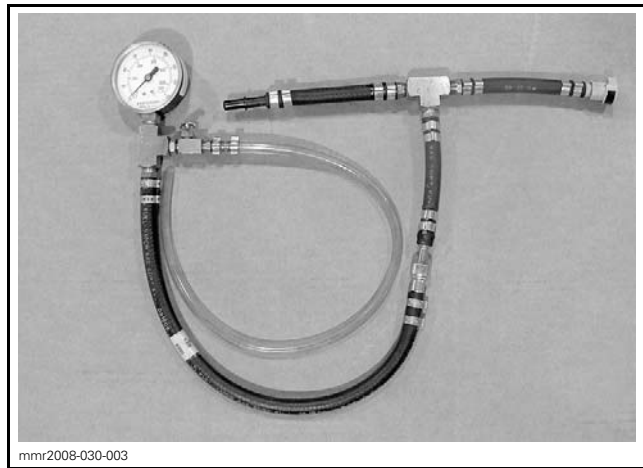
REQUIRED TOOLS	
FUEL HOSE ADAPTER (P/N 529 036 023)	
PRESSURE GAUGE (P/N 529 035 709)	

1. Ensure there is enough gas in fuel tank.
2. Install a rag under the ECM hose quick connect to catch fuel spillage.
3. Disconnect fuel supply hose from ECM.

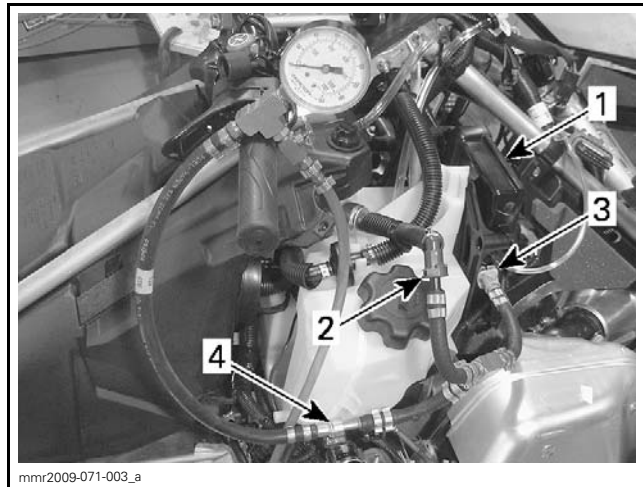


- TYPICAL**
1. ECM
  2. Fuel pressure hose
  3. Release button, quick disconnect fitting

4. Install the fuel hose adapter and the pressure gauge between fuel pressure hose and ECM.



**PRESSURE GAUGE WITH FUEL HOSE ADAPTER**



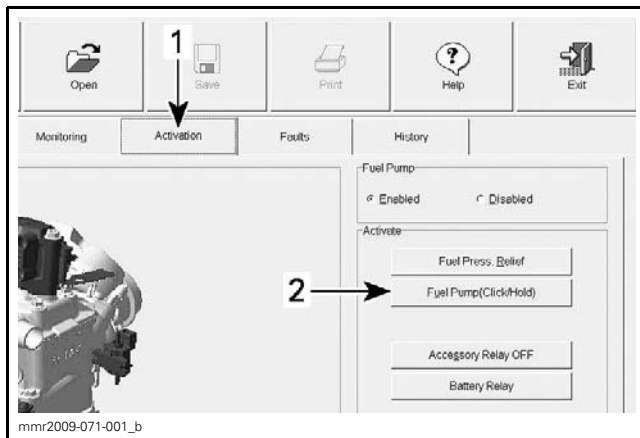
- TYPICAL**
1. ECM
  2. Fuel pressure hose fitting
  3. Fuel hose adapter to ECM fitting
  4. Fuel hose adapter to pressure gauge

### **⚠ WARNING**

**When carrying out this test, ensure fuel is not leaking from test equipment onto electrical components.**

**NOTE:** The pump should be activated for 15 seconds to ensure proper bleeding of the system.

5. Connect the emergency engine stop switch (D.E.S.S. post) to the vehicle.
6. Install the tether cord cap (D.E.S.S. key) on the emergency engine stop switch.
7. Connect vehicle to the latest version of B.U.D.S.
8. Perform calibration or software update if asked for.
9. Select the **ECM** and **Activation** tabs.
10. Click on the **Fuel Pump (Click/Hold)** button in the **Activate** field.



1. Activation tab
2. Fuel Pump (Click/Hold) button

**NOTE:** The fuel pump will run as long as you hold the **Fuel Pump (Click/Hold)** button in B.U.D.S.

11. Monitor the pressure gauge.

Fuel pressure should rise to approximately 303 kPa (44 PSI).

12. Release the **Fuel Pump (Click/Hold)** button

Fuel pressure should decrease and stabilize to approximately 210 kPa (30 PSI).

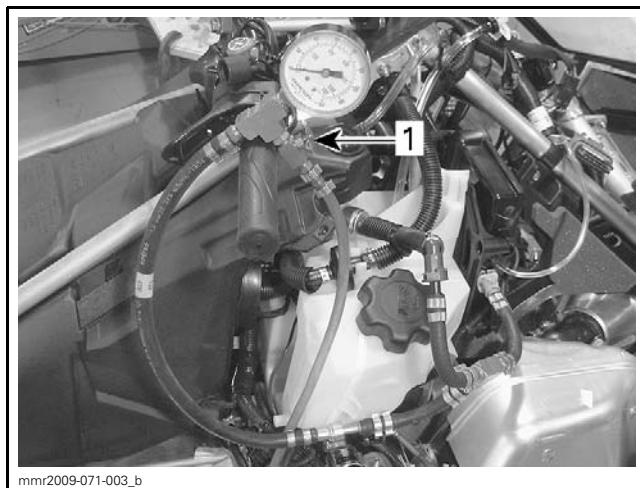
Fuel pressure should remain stable.

13. Check fuel system for leaks, especially around the injector hose fittings.

14. Remove tether cord cap (D.E.S.S. key).

15. Place the end of the adapter waste hose in the fuel tank filler neck.

16. Carefully bleed away fuel system using the bleed valve on the fuel hose adapter.



1. Pressure gauge bleed valve

**CAUTION** The fuel system is pressurized. Open valve slowly.

17. Remove pressure gauge and fuel hose adapter.

18. Reinstall the fuel pressure hose on ECM and gently but firmly pull on hose to ensure quick disconnect fitting is properly locked and secure on the ECM.

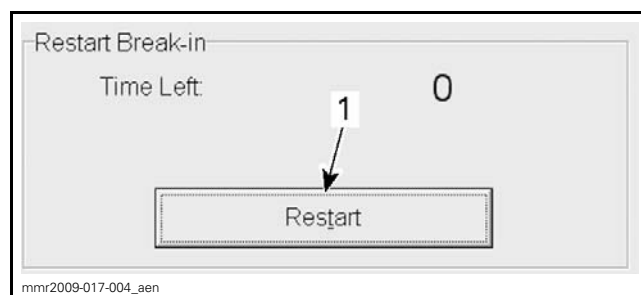
## Fault Codes Erasing

1. Connect vehicle to the latest applicable version of B.U.D.S., refer to the *COMMUNICATION TOOLS AND B.U.D.S.* subsection.
2. Select the **Faults** tab.
3. Click on **Clear Occurred Faults**.

## Engine Break-in Re-Initialization

**IMPORTANT:** Re-Initialize break-in period in B.U.D.S.

1. Select the **Setting** and **ECM** tabs.
2. Click on the **Restart** button in **Restart Break-in** box.



1. Click on **Restart**

**NOTE:** The oil consumption is purposely increased during break-in period.

3. Install all remaining parts.

## WARRANTY

### Piston Replacement

Submit a warranty claim using the following information.

For claiming procedure, refer to the *DEALER/DISTRIBUTOR WARRANTY GUIDE*.

The involved units for the piston replacement appear in the Campaign Monitoring and Unit History sections of BOSSWeb.

<b>CAMPAIGN NUMBER</b>	<b>2012-0022</b>
Claim Type	Campaign Claim
Action	Repair
Flat Rate Time	4.0 hour
Expiry Date	August 15, 2016

Click in the *REPAIR BOX* while completing your claim on BOSSWeb.



## Parts Return

Dealers and distributors are required to return removed parts to support their claims.

## Shipping Addresses

USA DEALERS	BRP c/o Warranty Department 7575 Bombardier Court Wausau, WI 54401
CANADIAN DEALERS	BRP Warranty Parts Inspection Center 565 de la Montagne Valcourt, QC, JOE 2L0
OTHERS COUNTRIES	Contact your local distributor or BRP Regional Office.

## Warranty Shipping Address Decals

Warranty shipping address decals can be ordered if needed.

COUNTRY	PART NUMBER
U.S.A.	480 901 601
Canada	484 500 001

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# SERIAL NUMBER LISTING OF 2012 INVOLVED VEHICLES

**Model: BACA**

From 000001 to 000202

**Model: BACB**

From 000001 to 000047

**Model: BACC**

From 000001 to 000309

**Model: BACD**

From 000001 to 000071

**Model: CTCA**

000005

000009

000011

000025

000028

000036

000047

000054

000067

000070

From 000072 to 000073

000080

000083

000088

From 000091 to 000092

000094

000102

000112

000120

000123

000127

000136

000142

000146

000148

000151

000154

000166

000169

From 000173 to 000174

000178

From 000181 to 000182

000192

From 000194 to 000195

From 000197 to 000198

000200

000207

000214

000219

From 000222 to 000228

000231

From 000233 to 000234

**Model: CTCA (cont'd)**

From 000238 to 000240

000245

000251

000256

000262

From 000268 to 000269

From 000271 to 000272

000274

000278

000280

000282

000289

000291

From 000293 to 000295

From 000297 to 000299

From 000302 to 000304

From 000306 to 000307

From 000310 to 000311

000313

From 000315 to 000317

From 000319 to 000327

000332

From 000336 to 000337

000339

000341

From 000344 to 000346

From 000353 to 000354

000356

From 000359 to 000360

000363

000368

000372

000390

From 000394 to 000396

000416

000419

From 000473 to 000474

000480

From 000482 to 000483

000488

000492

From 000499 to 000500

000509

From 000519 to 000520

000527

000535

000541

000546

000571

000578

000583

From 000585 to 000587

000608

**Model: CTCA (cont'd)**

000636

000640

From 000645 to 000646

000648

000655

000666

000669

000688

000713

000718

000739

000763

000771

000777

000789

000798

**Model: CTCC**

000006

000011

000013

000015

000018

000020

000022

From 000024 to 000025

From 000027 to 000030

From 000033 to 000034

000036

000038

000041

000044

From 000046 to 000049

From 000051 to 000054

000056

From 000059 to 000062

From 000064 to 000065

From 000069 to 000070

From 000072 to 000073

From 000075 to 000078

From 000080 to 000082

000084

000086

From 000088 to 000091

000093

From 000095 to 000099

From 000101 to 000103

From 000105 to 000111

000113

From 000115 to 000119

From 000122 to 000123

From 000125 to 000126

000128

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**Model: CTCC (cont'd)**  
000130  
000135  
000139  
000142  
From 000145 to 000146  
000148  
000150  
From 000152 to 000153  
000158  
000161  
From 000164 to 000167  
From 000170 to 000172  
From 000175 to 000176  
From 000179 to 000183  
From 000186 to 000188  
000193  
From 000195 to 000196  
From 000198 to 000199  
000201  
From 000203 to 000204  
000206  
000208  
From 000210 to 000211  
From 000214 to 000216  
000218  
From 000221 to 000222  
000224  
From 000231 to 000235  
000240  
From 000243 to 000244  
From 000246 to 000247  
000251  
000254  
From 000256 to 000261  
From 000264 to 000265  
From 000267 to 000271  
000273  
From 000278 to 000283  
From 000286 to 000287  
From 000291 to 000292  
000294  
000299  
From 000301 to 000302  
000307  
000310  
000313  
000335  
000363  
000367  
000373  
000393  
From 000395 to 000396  
From 000401 to 000403  
000410  
000415  
From 000424 to 000426

**Model: CTCC (cont'd)**  
000428  
From 000435 to 000436  
000442  
000444  
From 000449 to 000451  
000453  
000458  
000460  
From 000463 to 000464  
000466  
From 000471 to 000472  
000474  
000488  
000496  
000501  
From 000509 to 000511  
From 000513 to 000514  
000517  
000528  
000537  
From 000539 to 000542  
From 000546 to 000547  
000550  
000553  
000555  
000561  
000563

**Model: CUCB**  
From 000001 to 000002  
From 000004 to 000005  
From 000007 to 000011  
From 000016 to 000018  
From 000020 to 000024  
000026  
From 000029 to 000032  
000034  
From 000036 to 000038  
000040  
000043  
From 000046 to 000050  
From 000052 to 000055  
From 000057 to 000058  
From 000061 to 000062  
From 000067 to 000068  
000072  
000074  
From 000076 to 000080  
From 000085 to 000086  
From 000089 to 000090  
From 000092 to 000095  
From 000102 to 000103  
From 000108 to 000109  
From 000111 to 000113  
000121  
From 000129 to 000130

**Model: CUCB (cont'd)**  
000132  
From 000134 to 000135  
From 000137 to 000138  
000140  
000142  
000144  
From 000147 to 000150  
000155  
000158  
000162  
000168  
000170  
000176  
From 000182 to 000183  
From 000189 to 000190  
From 000192 to 000193  
From 000199 to 000200  
From 000205 to 000206  
000208  
From 000210 to 000215  
From 000217 to 000219  
000221  
000223  
From 000226 to 000228  
From 000230 to 000231  
000233  
000235  
000239  
000241  
000244  
000246  
From 000248 to 000249  
000251  
000253  
000255  
From 000262 to 000270  
From 000272 to 000273  
000275  
From 000277 to 000278  
000280  
000283  
From 000286 to 000288  
From 000290 to 000291  
000293  
000295  
000302  
From 000304 to 000305  
000308  
From 000310 to 000311  
000313

**Model: CUCD**  
From 000001 to 000004  
From 000006 to 000010  
From 000013 to 000016  
From 000018 to 000020



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**Model: CUCD (cont'd)**  
000022  
From 000024 to 000026  
From 000028 to 000030  
000032  
From 000039 to 000041  
From 000043 to 000046  
000048  
From 000053 to 000055  
000057  
From 000060 to 000061  
000063  
From 000065 to 000088  
From 000091 to 000094  
From 000098 to 000100  
000102  
000104  
From 000109 to 000112  
From 000114 to 000115  
From 000117 to 000120  
000122  
000124  
000126  
000128  
From 000130 to 000136  
000139  
From 000142 to 000146  
From 000148 to 000149  
000154  
000156  
From 000158 to 000159  
000162  
000164  
From 000166 to 000167  
From 000170 to 000171  
From 000173 to 000174  
000176  
000178  
From 000180 to 000181  
From 000183 to 000184  
From 000186 to 000187  
From 000189 to 000194  
From 000196 to 000199  
From 000201 to 000208  
From 000211 to 000214  
000216  
000218  
000221  
From 000227 to 000229  
From 000233 to 000237  
000239  
From 000247 to 000248  
From 000251 to 000254  
From 000258 to 000262  
From 000264 to 000266  
From 000268 to 000272

**Model: CUCD (cont'd)**  
From 000274 to 000276  
From 000278 to 000281  
From 000283 to 000284  
From 000290 to 000292

**Model: CWCA**  
From 000007 to 000008  
000013  
000033  
From 000038 to 000039  
000045  
000049  
From 000055 to 000056  
000065  
000118  
000125  
000139  
000153  
000180  
000228  
000247  
000270  
000316  
000354

**Model: CWCC**  
000007  
000018  
From 000031 to 000032  
000036  
From 000038 to 000039  
000045  
000057  
000066  
000068  
000081  
000115  
000118  
000135  
000138

**Model: DPCA**  
From 000001 to 000159

**Model: DPCB**  
From 000001 to 000249

**Model: MXCA**  
From 000001 to 000188

**Model: MXCB**  
From 000001 to 000035

**Model: MXCC**  
From 000001 to 000269

**Model: MXCD**  
From 000001 to 000432

**Model: MXCE**  
From 000001 to 000072

**Model: MXCF**  
From 000001 to 000190

**Model: MXCH**  
From 000001 to 000277

**Model: MXCJ**  
From 000001 to 000102

**Model: MXCK**  
From 000001 to 000028

**Model: MZCB**  
From 000001 to 000178

**Model: MZCC**  
From 000001 to 000037

**Model: MZCD**  
From 000001 to 000172

**Model: MZCE**  
From 000001 to 000096

**Model: MZCF**  
From 000001 to 000353

**Model: MZCG**  
From 000001 to 000068

**Model: MZCH**  
From 000001 to 000314

**Model: MZCJ**  
From 000001 to 000125

**Model: UCCB**  
From 000001 to 000197

**Model: UCCC**  
From 000001 to 001012

**Model: UFCA**  
From 000001 to 000143

**Model: UFCB**  
From 000001 to 000923

**Model: UGCA**  
From 000001 to 000176

**Model: UGCB**  
From 000001 to 000682

**Model: UKCA**  
From 000001 to 000029

**Model: UKCB**  
From 000001 to 000018

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**Model: UKCC**  
From 000001 to 000038

**Model: UKCE**  
From 000001 to 000190

**Model: UKCF**  
From 000001 to 000066

**Model: UKCG**  
From 000001 to 000213

**Model: UKCH**  
From 000001 to 000083

**Model: UKCJ**  
From 000001 to 000353

**Model: UNCA**  
000018  
000029  
000031  
000038  
000040  
000063  
000068  
000099  
000117

**Model: UNCB**  
000009  
000011  
000017  
000022  
000025  
000029  
000035  
000039  
000049  
000051  
000066

000072  
000076  
From 000082 to 000083  
000097  
000111  
From 000135 to 000136  
000172  
000189  
000193  
From 000210 to 000212  
000216  
000235  
000250  
000260  
000271  
000277

**Model: UNCB (cont'd)**  
000288  
From 000302 to 000303  
000307  
000319  
000323  
000326  
000329  
000334  
000352  
000379  
000384  
000388  
000391  
000393  
000399  
000408  
000414  
000443

**Model: UNCC**  
000024  
000038  
000053  
000055  
000059  
000066  
000071  
000073  
000075  
From 000079 to 000081  
000083  
From 000092 to 000095  
From 000097 to 000100  
From 000102 to 000105  
From 000107 to 000118  
From 000120 to 000121  
From 000123 to 000129  
000132  
000136  
000139  
000141  
From 000143 to 000144  
000149

**Model: UNCD**  
000017  
000042  
From 000069 to 000073  
000077  
000083  
000087  
000089  
From 000091 to 000094  
From 000096 to 000098  
From 000100 to 000109  
From 000111 to 000112  
From 000114 to 000130

**Model: UNCD (cont'd)**  
From 000132 to 000135  
From 000137 to 000141  
From 000144 to 000149  
From 000151 to 000155  
000160  
From 000162 to 000164  
From 000166 to 000167  
000169  
From 000172 to 000173  
From 000175 to 000177  
From 000180 to 000181  
000186  
From 000189 to 000190  
000195  
000198  
000200  
000202  
000204  
000206  
000230  
000232  
000236  
000244  
000247  
000249  
From 000255 to 000256  
000259  
From 000262 to 000263  
000271  
000277  
000281  
000304  
000307  
000310  
000312  
000326

**Model: UNCE**  
From 000001 to 000148

**Model: UPCA**  
000003  
From 000014 to 000015  
000023  
000027  
From 000029 to 000030  
000041  
From 000047 to 000049  
000054  
000066  
000068  
000070  
From 000074 to 000075  
000080  
000082  
000089  
000096

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**Model: UPCA (cont'd)**

000101  
000104  
From 000106 to 000107  
000123  
From 000126 to 000127  
From 000130 to 000131  
000143  
000145  
000155  
000158  
000160  
000163  
000166  
000174  
From 000176 to 000177  
000182  
000186  
000188  
000190  
000192  
From 000195 to 000196  
From 000200 to 000201  
000203  
000205  
000207  
From 000210 to 000212

**Model: UPCB**

From 000002 to 000004  
From 000007 to 000008  
From 000013 to 000015  
000024  
000027  
From 000034 to 000035  
From 000037 to 000038  
From 000041 to 000043  
From 000047 to 000048  
000051  
From 000059 to 000060  
From 000062 to 000063  
000065  
From 000067 to 000070  
From 000072 to 000075  
From 000077 to 000079  
From 000083 to 000084  
From 000086 to 000088  
000091  
From 000094 to 000097  
From 000099 to 000103  
From 000106 to 000107  
000111  
000113  
From 000115 to 000116  
From 000123 to 000124  
From 000128 to 000129  
000135

**Model: UPCB (cont'd)**

From 000139 to 000140  
000153  
From 000163 to 000164  
000174  
From 000178 to 000179  
000192  
000206  
000209  
000219  
000222  
000224  
000226  
000228  
From 000230 to 000232  
000234  
000246  
000248  
From 000250 to 000251  
From 000254 to 000255  
000260  
From 000264 to 000266  
From 000268 to 000271  
000273  
From 000280 to 000288  
000294  
From 000297 to 000298  
From 000303 to 000304  
From 000306 to 000310  
000312  
000324  
000326  
From 000328 to 000329  
000331  
From 000333 to 000335  
From 000340 to 000341  
000344  
From 000347 to 000348  
000351  
000360  
000369  
000374  
000377  
000394  
000400  
000403  
000408  
From 000423 to 000424  
000427  
000429  
From 000433 to 000434  
000438  
000449  
000452  
000468  
000472

**Model: UPCC**

From 000002 to 000003  
From 000014 to 000015  
000018  
From 000020 to 000021  
From 000023 to 000025  
000027  
000029  
000032  
000036  
000039  
From 000044 to 000045  
000047  
000050  
000052  
000056  
From 000058 to 000060  
000062  
From 000064 to 000067  
000071  
000075  
000081  
From 000085 to 000088  
From 000090 to 000091  
From 000095 to 000099  
From 000101 to 000102  
From 000104 to 000105  
000107  
000111  
From 000113 to 000114  
000121  
000124  
000128  
From 000130 to 000131  
000133  
000135  
From 000137 to 000140  
000142  
From 000145 to 000147  
From 000149 to 000151  
From 000154 to 000155  
000161  
From 000163 to 000164  
000167  
From 000169 to 000171  
From 000173 to 000174  
From 000176 to 000178  
000184  
From 000189 to 000191

**Model: UPCD**

From 000002 to 000004  
From 000007 to 000011  
From 000016 to 000017  
From 000020 to 000021  
000024  
000029

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**Model: UPCD (cont'd)**

000031  
From 000039 to 000040  
000044  
000047  
000050  
From 000052 to 000055  
000057  
From 000059 to 000061  
000065  
From 000068 to 000069  
000071  
From 000074 to 000076  
From 000082 to 000083  
From 000086 to 000087  
000091  
000093  
From 000104 to 000105  
From 000107 to 000113  
From 000116 to 000118  
000123  
000126  
000129  
000133  
000135  
From 000137 to 000138  
000140  
From 000145 to 000148  
From 000151 to 000152  
000156  
From 000159 to 000160  
From 000166 to 000167  
000169  
000171  
From 000173 to 000175  
000178  
000184  
000187  
From 000192 to 000193  
From 000200 to 000201  
000203  
000205  
000208  
000210  
000218  
From 000220 to 000221  
000228  
000230  
From 000232 to 000233  
000235  
000240  
000244  
From 000250 to 000251  
000259  
000264  
000269  
000284

**Model: UPCD (cont'd)**

000286  
000288  
000290  
000292  
From 000298 to 000301  
From 000305 to 000307  
From 000312 to 000314  
000317  
From 000319 to 000320  
000322  
From 000325 to 000326  
000329  
000339  
000341  
000344  
From 000346 to 000348  
000352  
From 000359 to 000360  
From 000363 to 000364  
000373  
000377  
From 000379 to 000380

**Model: UPCE**

From 000001 to 000340  
From 000342 to 000354  
From 000356 to 000513

**Model: URCA**

From 000002 to 000004  
From 000006 to 000011  
000013  
000016  
000019  
From 000021 to 000022  
000024  
From 000027 to 000033  
000037  
From 000040 to 000042  
000045  
From 000047 to 000050  
000052  
From 000054 to 000056  
000058  
From 000060 to 000064

**Model: URCB**

From 000001 to 000003  
000005  
From 000007 to 000009  
From 000011 to 000016  
From 000018 to 000022  
From 000025 to 000034  
000036  
From 000039 to 000047  
From 000051 to 000053  
From 000055 to 000057

**Model: URCB (cont'd)**

From 000060 to 000062  
From 000064 to 000065  
From 000069 to 000070  
000074  
From 000078 to 000081  
000086  
From 000088 to 000090  
000094  
From 000097 to 000100  
From 000103 to 000106  
From 000109 to 000110  
000114  
000117  
From 000119 to 000120  
000126  
000128  
From 000130 to 000131

**Model: URCC**

From 000001 to 000010  
From 000012 to 000014  
From 000016 to 000022  
000024  
From 000027 to 000028  
000030  
000032  
000034  
000036  
000039  
From 000041 to 000051  
From 000054 to 000056  
From 000058 to 000062  
000064  
From 000067 to 000075  
From 000077 to 000095

**Model: URCD**

000001  
From 000003 to 000004  
From 000007 to 000009  
000011  
000013  
000015  
From 000017 to 000028  
From 000030 to 000035  
From 000037 to 000038  
000041  
From 000045 to 000047  
From 000049 to 000052  
From 000056 to 000059  
From 000062 to 000066  
000069  
From 000072 to 000077  
From 000079 to 000080  
From 000082 to 000084  
From 000086 to 000088  
From 000090 to 000094

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**Model: URCD (cont'd)**

From 000096 to 000100  
000102  
From 000108 to 000112  
From 000114 to 000115  
000117  
From 000119 to 000132  
000134

**Model: VACA**

From 000001 to 000016  
From 000018 to 000036  
From 000038 to 000094

**Model: VACB**

From 000001 to 000003  
From 000005 to 000006  
From 000008 to 000010  
From 000012 to 000014  
From 000016 to 000021  
From 000023 to 000033  
From 000035 to 000039  
From 000041 to 000049  
000051  
From 000054 to 000055  
From 000057 to 000061  
From 000064 to 000068  
From 000070 to 000071  
From 000073 to 000083  
From 000086 to 000087  
From 000089 to 000096  
From 000099 to 000100

**Model: VACC**

From 000001 to 000353

**Model: VACD**

From 000001 to 000011  
From 000013 to 000032  
From 000034 to 000036  
From 000038 to 000069  
From 000071 to 000092  
From 000094 to 000111  
From 000114 to 000125  
From 000127 to 000148  
From 000150 to 000158

**Model: VACE**

From 000001 to 000003  
From 000006 to 000007  
From 000010 to 000014  
From 000017 to 000023  
000025  
From 000028 to 000035  
From 000037 to 000038  
From 000040 to 000041  
000043  
From 000045 to 000047  
000051

**Model: VACE (cont'd)**

From 000053 to 000056  
From 000058 to 000060  
From 000062 to 000064

**Model: VBCA**

From 000001 to 000006  
From 000009 to 000016  
From 000018 to 000020  
From 000023 to 000026  
000029  
From 000031 to 000040  
From 000042 to 000048

**Model: VBCB**

000001  
000003  
From 000005 to 000006  
From 000010 to 000012  
000014  
000017  
000019  
From 000023 to 000024  
From 000027 to 000028  
000033  
From 000036 to 000037  
From 000039 to 000040  
From 000042 to 000044  
From 000046 to 000047  
000050  
From 000053 to 000057  
000060  
000063  
From 000065 to 000067  
From 000070 to 000073  
000079  
From 000082 to 000083  
000085  
000087  
000092  
From 000094 to 000096  
000103  
000107  
000109  
000113

**Model: VBCC**

From 000001 to 000475

**Model: VBCD**

From 000001 to 000003  
From 000005 to 000008  
From 000010 to 000012  
From 000014 to 000017  
000021  
From 000023 to 000029  
From 000031 to 000033  
From 000035 to 000041

**Model: VBCD (cont'd)**

From 000043 to 000046  
000048  
From 000050 to 000056  
From 000058 to 000069  
From 000072 to 000080  
From 000082 to 000084  
From 000086 to 000106  
From 000109 to 000111

**Model: VBCE**

From 000001 to 000002  
000006  
000008  
From 000010 to 000014  
000017  
From 000019 to 000024  
000027  
From 000029 to 000035  
From 000037 to 000039  
From 000041 to 000048  
From 000050 to 000052

**Model: VCCA**

000002  
From 000005 to 000006  
000008  
From 000010 to 000012

**Model: VCCB**

000005  
000010  
000013  
From 000018 to 000019  
000022  
000027  
000029  
000038  
000040  
From 000045 to 000046  
000050  
From 000054 to 000055  
000059  
000076  
From 000080 to 000081  
000083  
000085  
000089  
000092  
000095  
From 000098 to 000099  
000103  
000105  
000112  
000117  
From 000120 to 000121  
000128  
000130

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**Model: VCCB (cont'd)**

000136  
000141  
000145  
000148  
000156  
From 000160 to 000161  
000163  
000166  
From 000170 to 000171  
000173  
000175  
000179  
000181  
From 000192 to 000193  
From 000197 to 000198  
000200  
000203  
000213  
000219  
000238  
000240  
From 000243 to 000244  
From 000251 to 000252  
000255  
000258

**Model: VCCC**

From 000001 to 000243

**Model: VCCD**

From 000001 to 000009  
From 000011 to 000016  
From 000018 to 000020  
From 000022 to 000041

**Model: VCCE**

From 000001 to 000002  
From 000004 to 000006  
000009  
000011  
000013  
000015  
000017  
From 000023 to 000024  
000029  
000033  
000035  
000037  
000039  
From 000042 to 000044  
000046  
From 000048 to 000049  
000051  
000055  
From 000060 to 000061  
From 000063 to 000064  
000068

**Model: VCCE (cont'd)**

000070  
000072  
000078  
From 000080 to 000081  
000083  
From 000085 to 000086  
000088  
From 000092 to 000093  
000095  
From 000099 to 000102  
000105  
000107  
000111  
000115  
From 000119 to 000124  
000127  
000129  
000132  
000135  
000138  
000140  
From 000143 to 000144  
From 000146 to 000148

**Model: VDCA**

From 000001 to 000024  
From 000026 to 000027  
From 000030 to 000032  
From 000034 to 000041  
000043  
From 000045 to 000049  
From 000051 to 000055  
From 000057 to 000066  
From 000068 to 000071  
From 000074 to 000075  
From 000080 to 000082