

CRANKSHAFT/CAMSHAFT POSITION SENSORS

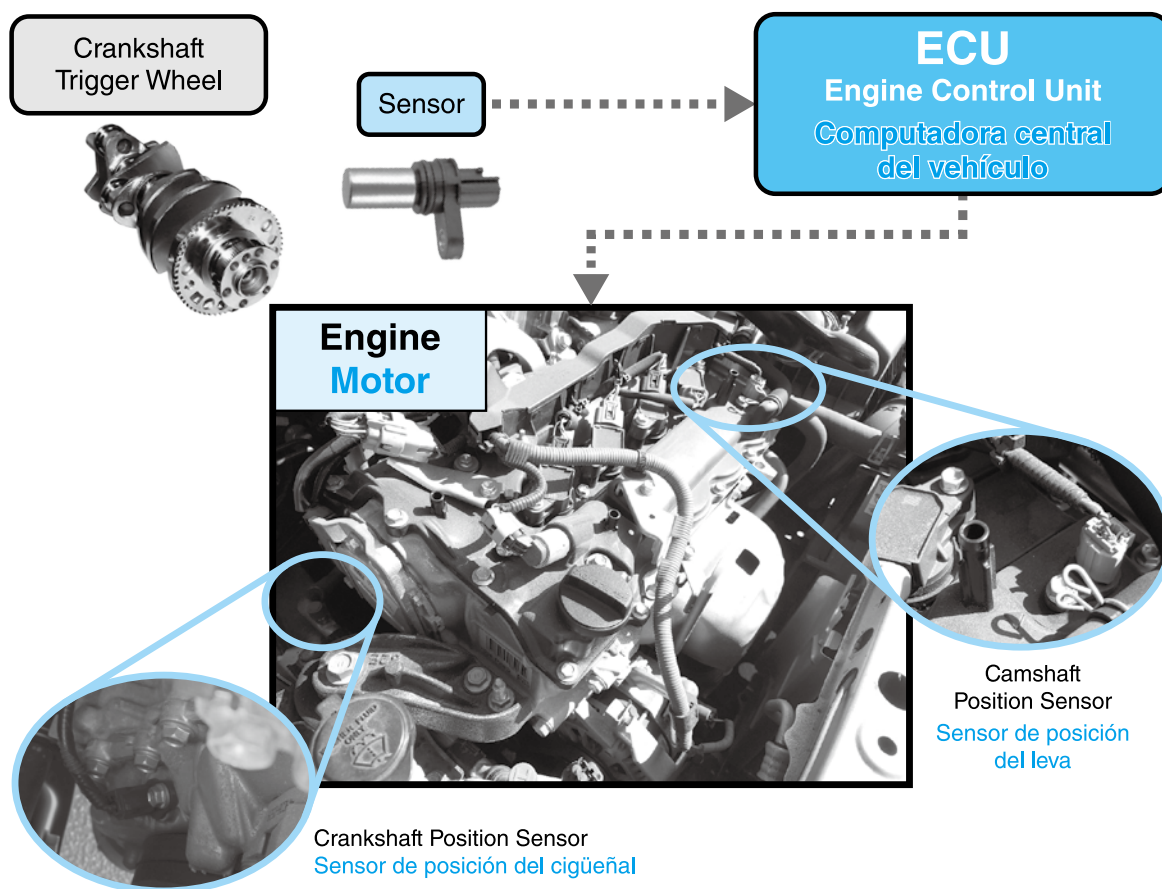
Crankshaft / Camshaft Position Sensor Sensor de posición del cigüeñal / árbol de leva

Function / Función

The crankshaft / camshaft position sensor is one of the most critical aspects of your car. It monitors the rotational speed (RPM) and position of the crankshaft / camshaft in the engine, reporting this information to the engine control unit (ECU) to govern fuel injection, ignition system timing, and other engine characteristics.

El sensor de posición de cigüeñal / leva es uno de los aspectos más críticos de su vehículo.

La función principal del sensor de posición de cigüeñal / leva es detectar la velocidad de rotación (RPM) y posición de cigüeñal / leva en el motor y transmitir estas informaciones a la computadora central del vehículo (ECU : Engine Control Unit), lo que permite que la ECU pueda controlar la inyección de combustible y la ignición de la chispa en el momento adecuado etc.



Troubleshooting / Solución de problemas

The crankshaft/camshaft position sensor continuously interacts with the ECU. Therefore, if a problem occurs with the sensor, such as sending incorrect information to the ECU, the 'Check Engine' light on the dashboard will turn on. Look for an error code (such as P0335, P0385, etc...) using the on-board diagnostics (OBD).

El sensor de posición de cigüeñal/leva interactúa continuamente con la ECU. Por lo tanto, si ocurre un problema con el sensor, se transmite la información incorrecta a la ECU y la luz de alerta "Check Engine" se encenderá en el tablero. Podemos ver el código de error (tal como P0335, P0385, etc...) utilizando un sistema de diagnóstico vehicular (OBD : on-board diagnostics).



Symptoms / Síntomas

- Starting Trouble / Problema de arranque
- Rough Idling / Ralentí inestable
- Engine Stalling / Calado de motor
- Poor Gas Mileage / Bajo rendimiento en el consumo de combustible
- Uneven Acceleration / Aceleración irregular

CRANKSHAFT/CAMSHAFT POSITION SENSORS

REFERENCE

Ref No.	New-Era No.
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NISSAN/INFINITI

23731-4M500	NCS-N001
23731-4M502	NCS-N001
23731-4M505	NCS-N001
23731-4M506	NCS-N001
23731-4M50A	NCS-N001
23731-4M50B	NCS-N001
23731-4M50C	NCS-N001
23731-5M001	NCS-N001
23731-6J902	NCS-N002
23731-6J905	NCS-N002
23731-6J906	NCS-N002
23731-6J90A	NCS-N002
23731-6J90B	NCS-N002
23731-6J90C	NCS-N002
23731-7Y000	NCS-N003
23731-7Y001	NCS-N003
23731-AL615	NCS-N003
23731-AL616	NCS-N003
23731-AL61A	NCS-N003
23731-AL60A	NCS-N004
23731-AL60C	NCS-N004
23731-6N206	NCS-N005
23731-6N202	NCS-N005
23731-6N20A	NCS-N005
23731-6N20B	NCS-N005
23731-6N20C	NCS-N005
23731-6N20D	NCS-N005
23731-6N21A	NCS-N005
23731-8J005	NCS-N005
23731-8J006	NCS-N005
23731-6N21A	NCS-N005
23731-1VA0A	NCS-N006
23731-EN20A	NCS-N006
23731-31U10	NCS-N007
23731-31U11	NCS-N007
23731-ED02A	NCS-N008
23731-ED02B	NCS-N008
23731-ED02C	NCS-N008
23731-AW410	NCS-N009
23731-EC00A	NCS-N009

Ref No.	New-Era No.
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TOYOTA/LEXUS

90919-05050	NCS-T001
90919-05070	NCS-T002
90919-A5004	NCS-T002
90919-05047	NCS-T003
90919-05007	NCS-T004
90919-05071	NCS-T005
90919-05021	NCS-T006
029600-0371	NCS-T006
029600-0372	NCS-T006
90080-19014	NCS-T007
90919-05026	NCS-T007
90919-05045	NCS-T008
90919-05081	NCS-T008
90919-05087	NCS-T008

MITSUBISHI

MR420734	NCS-M001
J005T26273	NCS-M001
J5T26273	NCS-M001
ME226858	NCS-M002
0 281 002 929	NCS-M002
ME225366	NCS-M003
0 281 002 807	NCS-M003
MD327107	NCS-M004
MR985041	NCS-M005
J5T3147	NCS-M005

MAZDA

FSD-18-221	NCS-Z001
ZL01-18-221	NCS-Z001
ZL01-18-221A	NCS-Z001
J005T27072	NCS-Z001
J5T27072	NCS-Z001
FSD7-18-221B	NCS-Z002
FSD7-71-1621	NCS-Z002
PE01-18-221	NCS-Z003

HONDA/ACURA

37840-RJH-006	NCS-H001
37840-PLC-006	NCS-H001
37840-PLC-000	NCS-H001

SUZUKI/SUBARU

33220-70E00	NCS-S001
J5T10771	NCS-S001

Ref No.	New-Era No.
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HYUNDAI/KIA

96183235	NCS-X001
39180-22600	NCS-X002
25182450	NCS-X003
96253544	NCS-X004
39180-2B000	NCS-X005
39180-25200	NCS-X006
39180-25300	NCS-X006
39180-26900	NCS-X007
0K30A-18891	NCS-X008
39310-38070	NCS-X009
39318-39800	NCS-X010
96325867	NCS-X011
96325868	NCS-X012
39350-2B000	NCS-X013
39350-2B010	NCS-X013
39350-2B030	NCS-X013
39350-02710	NCS-X014
39350-02800	NCS-X014

CRANKSHAFT/CAMSHAFT POSITION SENSORS

NISSAN / INFINITI

New-Era No.	Ref.No.	Application			
NCS-N001	12V		23731-4M500 23731-4M502 23731-4M505 23731-4M506 23731-4M50A 23731-4M50B 23731-4M50C 23731-5M001	NISSAN INFINITY MARCH K12 CR10/12/14 02~ (MICRA) CUBE Z11 CR14 02~ WINGROAD Y11 QG13/15/18 99~08 SUNNY B15 QG13/15/18 98~ TINO V10 QG18 98~03 PRIMERA P11/P12 QG18 98~ BLUEBIRD U14 QG18 98~ SYLPHY G10 QG15/18 00~ CIMA F50 VK45 01~10 FUGA Y50 VK45 05~ PRESIDENT PF50 VK45 03~ AD VAN Y12 CR12 06~13	
NCS-N002	12V		23731-6J902 23731-6J905 23731-6J906 23731-6J90A 23731-6J90B 23731-6J90C	NISSAN INFINITY MARCH K12 CR10/12/14 03~ (MICRA) CUBE Z11 CR14 02~ WINGROAD Y11 QG18 03~ SUNNY B15 QG18 03~ TINO V10 VQ23/35 03~ PRIMERA P11/P12 VQ35 03~07 BLUEBIRD U14 VQ25/35 03~ SYLPHY G10 VQ35 03~ CIMA F50 VQ25/35 04~07 FUGA Y50 VQ35 03~07 PRESIDENT PF50 VQ25 04~10 AD VAN Y12 VQ35 04~ CR12 06~13	
NCS-N003	12V		23731-7Y000 23731-7Y001 23731-AL615 23731-AL616 23731-AL61A	NISSAN ARMADA (5.6L) 02~06 FRONTIER (4.0L) 05~17 ALTIMA (3.5L) 02~06 XTRERRA (4.0L) 05~14 TEANA J31 (VQ23,VQ35) INFINITI FX35 VQ35 (3.5L) 03~08	
NCS-N004	12V		23731-AL60A 23731-AL60C	NISSAN 350Z VQ35DE 03~06 ALTIMA VQ35DE 02~06 MAXIMA VQ35DE 02~08 MURANO VQ35DE 03~08 PATHFINDER VQ35DE 03~04 QUEST VQ35DE 04~06 INFINITI F35 VQ35DE 03~08 GX35 VQ35DE 03~07 I35 VQ35DE 02~04 M35 VQ35DE 06~08	

CRANKSHAFT/CAMSHAFT POSITION SENSORS

NISSAN / INFINITI

New-Era No.	Ref.No.	Application		
NCS-N005	12V		23731-6N202 23731-6N206 23731-6N20A 23731-6N20B 23731-6N20C 23731-6N20D 23731-8J005 23731-8J006	NISSAN ALTIMA QR25DE 06~ PRIMERA QR20DE 02~ X-TRAIL QR20DE 01~13
NCS-N006	12V		23731-1VA0A 23731-EN20A	NISSAN TIIDA MR18DE 07~12 X-TRAIL MR20DE 07~12 QASHQUAI MR20DE, HR16DE 07~13 NV200 HR16DE 13~20 SENTRA MR20DE 07~12
NCS-N007	12V		23731-31U10 23731-31U11	NISSAN MAXIMA VQ20DE 00~03 VQ30DE 95~01 VQ35DE 02 PATHFINDER VQ35DE 01~02 CEDRIC VQ30DE 92~95 INFINITI I30 VQ30DE 96~01 QX4 VQ20DE, VQ30DE 95~00 VQ35DE 01~03
NCS-N008	12V		23731-ED02A 23731-ED02B 23731-ED02C	NISSAN CUBE HR16DE 10 JUKE HR16DE 18 MICRA HR16DE 05~10 NOTE HR16DE, HR12DE 06~13 NV200 HR16DE 10 QASHQAI HR16DE 07~13 TIIDA HR16DE 07~12
NCS-N009	12V		23731-AW410 23731-EC00A	NISSAN ALMERA YD22DDT (i) 03~06 CABSTAR YD25DDTi 06~14 MURANO YD25DDTi 10~14 NAVARA YD25DDTi 02~10 NT400 YDE5K3KD-5LD 14 PATHFINDER YD25DDTi 05 PRIMERA YD22DDT 02~07 X-TRAIL YD22DDT (i) 01~13

CRANKSHAFT/CAMSHAFT POSITION SENSORS

TOYOTA / LEXUS

New-Era No.	Ref.No.	Application		
NCS-T001 	12V 90919-05050	TOYOTA		
		HILUX HIACE INNOVA DYNA LAND CRUISER	1KD-FTV, 2KD-FTV 2KD-FTV 2KD-FTV 1KD-FTV 2KD-FTV 1KD-FTV	01~ 01~12 03~ 06~ 01~ 02~10
NCS-T002 	12V 90919-05070 90919-A5004	TOYOTA		
		AURIS AVENSIS PRIUS RAV4 CAMRY COROLLA YARIS / VITZ	1ZR-FAE/FE, 2ZR-FXE/FE 1ZR/2ZR-FAE, 3ZR-FAE/FE 2ZR-FXE 2AR-FE, 3ZR-FAE/FE 2AR-FXE/FE 1ZR-FAE/FE, 2ZR-FBE/FE 2ZR-FE	06~18 09~18 08~21 08~13 10~20 06~14 07~11
NCS-T003 	12V 90919-05047	LEXUS		
		GS CT RC NX	2AR-FSE 2ZR-FXE 2AR-FSE 2AR-FXE	10~20 14~18 14~18 13~18
NCS-T004 	12V 90919-05007	TOYOTA		
		ALPHARD AVENSIS CAMRY COROLLA HARRIER RAV4	2AZ-FE 1AZ-FSE, 2AZ-SFE 3S-FE 1CD-FTV 2AZ-FE 3S-FE 1AZ-FE	03~14 00~08 86~91 00~07 00~12 97~00 00~06
NCS-T005 	12V 90919-05071	TOYOTA		
		CELICA COUPE COROLLA SUPRA	2ZZ-GE 2ZZ-GE 2JZ-GTE	99~05 02~07 93~02
NCS-T006 	12V 90919-05071	LEXUS		
		GS300 IS300	2JZ-GE 2JZ-GE	97~04 01~05
NCS-T007 	12V 90919-05071	TOYOTA		
		LAND CRUISER	1UR-FE	10~18
NCS-T008 	12V 90919-05071	LEXUS		
		GS ISC, LC LS LX RX	1UR-FE, 2UR-GSE 2UR-GSE 1UR-FE, 1UR-FSE 3UR-FE 2GR-FX5	07~18 07~18 06~18 07~18 15~18

CRANKSHAFT/CAMSHAFT POSITION SENSORS

TOYOTA / LEXUS

New-Era No.		Ref.No.	Application		
NCS-T006	12V	029600-0371 029600-0372 90919-05021	TOYOTA LAND CRUISER 4RUNNER T100 TACOMA TUNDRA	5VZ-FE 5VZ-FE 5VZ-FE 5VZ-FE 5VZ-FE	96~02 95~02 94~98 95~04 99~04
NCS-T007	12V	90080-19014 90919-05026	TOYOTA CAMRY COROLLA TACOMA SIENNA CELICA MATRIX HIGHLANDER LEXUS ES300 ES330 HS350h RX300	1AZ, 2AZ 3ZZ 2RZ, 3RZ 1MZ, 3MZ 1ZZ 2AZ 2AZ, 3MZ 1MZ, 3MZ 1MZ, 3MZ 2AZ-FXZ 1MZ	02~11 98~10 95~04 01~06 00~05 03~13 00~04 98~03 04~06 10~12 99~03
NCS-T008	12V	90919-05045 90919-05081 90919-05087	TOYOTA AURIS PRIUS WILL CYPHA YARIS VERSO YARIS/VITZ	1NZ-FE 1NZ-FXE 1NZ-FE, 2NZ-FE 1NZ-FE, 2NZ-FE 1NZ-FE 2NZ-FE 1NZ-FXE	06~12 03~09 01~05 99~05 01~05 99~05 12



CRANKSHAFT/CAMSHAFT POSITION SENSORS

mitsubishi

New-Era No.	Ref.No.	Application		
NCS-M001 	12V MR420734 J005T26273 J5T26273	mitsubishi LANCER SPACE STAR CARISMA COLT MIRAGE	4G13, 4G92 4G18 4G13, 4G18 4G92 4G13, 4G92 4G13	90~03 03~08 98~01 95~06 88~03 95~03
NCS-M002 	12V ME226858 0 281 002 929	mitsubishi CANTER	4M42	06~
NCS-M003 	12V ME225366 0 281 002 807	mitsubishi EXCAVATOR CANTER ROSA	4M50	05~10 01~19
NCS-M004 	12V MD327107	mitsubishi LANCER MK LANCER MK IV LANCER SALOON	4G15 4G15 4G63 TURBO	83~90 88~92 98~01 04 06
NCS-M005 	12V MR985041 J5T3147	mitsubishi COLT COLT VI LANCER VII SMART FORFOUR	4A91 3A91, 4A91 4A91 M 134.910/911 M 135.950	06~09 04~12 08, 10 04~06 04~06

CRANKSHAFT/CAMSHAFT POSITION SENSORS

MAZDA / HONDA / SUZUKI / SUBARU

New-Era No.		Ref.No.	Application		
NCS-Z001	12V	FSD-18-221 ZL01-18-221 ZL01-18-221A J005T27072 J5T27072	MAZDA MAZDA 323 DEMIO MX-5 / MIATA	FP55, ZL05;ZL06, RF3F, RF1G, ZM B3ME, B5E	98~04 98~03 98~05
NCS-Z002	12V	FSD7-18-221B FSD7-71-1621	MAZDA 626 323 MPV PREMACY	FP, FP9A, FPY3, FS, RF3F B3ME, FP, RF1G, RF3F, ZL05 FS, FSDS FP, FS7G, RF3F	97~02 98~04 99~02 99~05
NCS-Z003	12V	PE01-18-221	MAZDA MAZDA2 MAZDA3 MAZDA6 CX-3 CX-5 MX-5	P5-, S5- P5-, PE-, SH- S5-, S8-, HF- PR-, PY-, SH- S5-, S8-, PE- PE-, PY-, SH- P5-, PE-	14~18 13~14 16~19 12~18 15~18 11~18 15~18
NCS-H001	12V	37840-RJH-006 37840-PLC-006 37840-PLC-000	HONDA CIVIC VII COUPE FR-V STREAM ACURA EL	D17A1/2/5/6/7/8 D17A2 D17A2 D17A2	01~05 04 01 04~05
NCS-S001	12V	33220-70E00 J5T10771	SUZUKI BALENO SWIFT VITARA X-90 WAGON R SUBARU JUSTY	G16B G13A/B G16B G16B G13BB EF13 G13BB	95~02 85~01 98~02 95~97 06~21 95~10 01~13

CRANKSHAFT/CAMSHAFT POSITION SENSORS

DAEWOO / CHEVROLET / HYUNDAI / KIA

New-Era No.	Ref.No.	Application		
NCS-X001 	12V	96183235	DAEWOO LANOS NUBIRA	LANOS NUBIRA 97~02 99~05
NCS-X002 	12V	39180-22600	HYUNDAI ACCENT COUPE ELANTRA GETZ MATRIX KIA RIO	G4EH G4ED-G G4ED-G G4EA, G4ED-G, G4EE G4ED-G 94~00 06~09 00~06 02~09 01~06 06~11
NCS-X003 	12V	25182450	CHEVROLET AVEO CRUZE OPTRA VIVANT DAEWOO KALOS LACETTI NUBIRA TACUMA	F14D3 / F15S3 F16D3, LXT, LXV LXT F14D3 F16D3 A16DMS F14D3, F16D3 F18D2, F18S2 05~06 09 03~08 00 03~05 04~05 99~02 02~04 00
NCS-X004 	12V	96253544	CHEVROLET AVEO LACETTI DAEWOO TACUMA	F12S3, F14D3 F16D3, T18SED A16DMS, A18DMS X20SED 06 05 00 01
NCS-X005 	12V	39180-2B000	HYUNDAI ELANTRA ACCENT VELOSTER SONATA KIA RIO SOUL FORTE FORTE KOUP	G4NB-B, G4FG, G4FC G4FA, G4FC (1.6L) G4KD, G4NA (1.6L) (1.6L) (1.8L, 2.0L) (2.0L) 10~16 10- 12~15 09~14 12~14 09~15 14~15 14~15

CRANKSHAFT/CAMSHAFT POSITION SENSORS

DAEWOO / CHEVROLET / HYUNDAI / KIA

New-Era No.	Ref.No.	Application
NCS-X006 12V 	39180-25200 39180-25300	HYUNDAI IX35 G4KD 10 SANTA FE G4KE 10~12 SONATA G4KC, G4KD 06~14 SANTA G4KC 10~14 TUCSON G4KC 10~13 KIA FORTE G4KC 10~13 OPTIMA G4KC 06~14 RONDO G4KC 07~10 SORENTO G4KC 11~14 SPORTAGE G4KC 11~14
NCS-X007 12V 	39180-26900	HYUNDAI ACCENT G4EA/B/C/D/E/H/K, G4ER 00~11 COUPE G4ED-G, G4GR 98~09 ELANTRA G4ED-G, G4GR 00~06 GETZ G4EA, G4ED-G, G4EE 02~10 MATRIX G4ED-G 01~10 KIA CERATO G4ED 04~ RIO G4ED/E 05~
NCS-X008 12V 	0K30A-18891	KIA RIO A3E, A5D 01~05 SEDONA K5, KV6 01~06
NCS-X009 12V 	39310-38070	HYUNDAI SANTA FE G4JS-G, G4BP, G4JP 01~06 SONATA G4JS 99~05 KIA OPTIMA GS4JS 01~06 SORENTO GS4JS 02~
NCS-X010 12V 	39318-39800	KIA SORENTO G6AU 03~06 G6CU 02~

CRANKSHAFT/CAMSHAFT POSITION SENSORS

DAEWOO / CHEVROLET / HYUNDAI / KIA

New-Era No.	Ref.No.	Application		
NCS-X011 	12V	96325867	CHEVROLET AVEO SPARK (MATIZ)	F12S3, LY4 F8CV, B10S, LA2 06~07 05
			DAEWOO KALOS MATIZ	B12S1, F12S3 F8CV 03 98
NCS-X012 	12V	96325868	CHEVROLET AVEO SPARK (MATIZ) NUBIRA	F12S3, LY4, F14D3, L14 F8CV, B10S1, LA2 F14D3 06~07 05 06
			DAEWOO KALOS LACETTI MATIZ TICO	B12S1, F12S3, F14D3 F14D3 F8CV F8CV 03 04 98 96~00
NCS-X013 	12V	39350-2B000 39350-2B010 39350-2B030	HYUNDAI I10 I20 I30 IX20 VELOSTER	G3LA, G4LA G4FA, G4FC, G4LA G4FA, G4FC, G4FD G4FA, G4FC G4FD 08~13 08~15 07~12 10 11
			KIA CARENS CEE'D CERATO PICANTO RIO SOUL SPORTAGE	G4FC / G4FD G4FC, G4FD G4FC G3LA, G4LA G4LA G4FC G4FD 09~10/13 06~12 06 11 11 11 11
NCS-X014 	12V	39350-02710 39350-02800	HYUNDAI AMICA GETZ I10	G4HD, G4HG G4HG G4HG 03~10 05~09 07~13
			KIA PICANTO	G4HE, G4HG 04

New-Era®
INFORMATION

New-Era No.	Ref. No.	Car Maker	Car Model	Engine Model	Model Year
NCS-T009 	90919-05036 90919-A5002	TOYOTA	INNOVA DYNA FORTUNER HIACE HILUX TACOMA 4RUNNER COASTER LAND CRUISER SEQUOIA MAJESTA CROWN CELSIOR	1TR-FE 2TR-FE 2TR-FE 2TR-FE 2TR-FE 2TR-FE 2TR-FE 3TR-FE 2UZ-FE 2UZ-FE 3UZ-FE 3UZ-FE 3UZ-FE	'12-'15 '11-'16 '14-'17 '13-'15 '12-'15 '10-'15 '10-'11 '13-'19 '07-'12 '04-'07 '09-'13 '09-'12 '03-'06
		LEXUS	GS400 GS430 GX470 LS400 LS430 LX470 SC400 SC430		'98-'00 '01-'07 '05-'09 '98-'00 '02-'10 '05-'07 '98-'00 '02-'10
NCS-M006 	MR507743	MITSUBISHI	L200 L200 SPORTERO L300 PAJERO SPORT TRITON		'07-'15 '05-'15 '86-'13 '13-'17 '06-'15
NCS-X015 	39350-03040	KIA	RIO IV ACCENT GRAND I10 REINA VENUE VERNA I10 I20		'17- '14-'23 '13-'22 '18-'21 '19-'22 '17-'20 '16-'19 '14-'20

New-Era®

INFORMATION

New-Era No.	Ref. No.	Car Maker	Car Model	ENGINE / Model No.	Model Year
NCS-T010  CRANKSHAFT POSITION SENSOR	90919-05043 029600-21000 029600-1000	TOYOTA	BELTA PLATZ RACTIS VITZ YARIS ECHO	2SZ-FE SCP92 1SZ-FE SCP11 2SZ-FE SCP100R 2SZ-FE SCP13 2SZ-FE SCP90 1SZ-FE SCP10R	'05-'12 '99-'05 '09-'10 '02-'05 '06-'08 '99-'05
NCS-T011  CRANKSHAFT POSITION SENSOR	90919-05057 90919-A5003	TOYOTA	4RUNNER AVALON CAMRY CAMRY HYBRID FJ CRUISER AVALON HILUX SURF LAND CRUISER LAND CRUISER PRADO RAV4/VANGUARD TACOMA TUNDRA	1GR-FE GRN285L 2GR-FE GSX30L 2GR-FE GSV40L 2GR-FE GSV50L 1GR-FE GSJ15W 1GR-FE GGN125R 1GR-FE GGN125R 1GR-FE GRJ200R 1GR-FE GRJ121W 2GR-FE GSA33W 1GR-FE GRN270 1GR-FE GSK51L	'09-'05 '07-'11 '11-'18 '10-'18 '20-'21 '20-'21 '15-'17 '05-'09 '07-'12 '04-'15 '13-'14
NCS-T012  CRANKSHAFT POSITION SENSOR	90919-05059	TOYOTA	4RUNNER TACOMA	2TR-FE GRN280L 1GR-FE GRN225L	'10-'12 '05-'23
NCS-M007  CRANKSHAFT POSITION SENSOR	MD357274 J005T25099 MD187066	MITSUBISHI	L200 MONTERO PAJERO TRITON	KA9T V65W V77W	'05-'15 '00-'06 '00-'06 '06-'10
NCS-S002  CAMSHAFT POSITION SENSOR	33220-50G02 33220-50G00 33220-50G01 J005T23191	SUZUKI	AERIO BALENO EVERY CULTUS GRAND VITARA IGNIS SWIFT WAGON R	RB21S SY416 DA52T GC21S TA02W RG41S HT51S MA64S	'04-'05 '03-'06-'07
NCS-S003  CRANKSHAFT POSITION SENSOR	33220-80G00 J005T23891	SUZUKI	AERIO IGNIS JIMNY SWIFT LIANA WAGON R	RB21S RG41S JB43W HT51S RH416F MA64S	'04-'05 '03-'02-'03