



SERVICE BULLETIN

GLOBAL AFTER SALES OFFICE, MITSUBISHI MOTORS CORPORATION

PURPOSE : Change	ISSUE NO. : MSB-19EXL11-002	DATE : 2019-07-29
SUBJECT : Change of the description contents due to change the Drive Belt for the vehicles which equipped with 4N1 series Engine		<DESTINATION/MODEL> <M/Y> (EU/RUSSIA/G.EXP/GCC/ARGENTINA/ 11-20 BRAZIL/NEW ZEALAND/MMAL SOUTH AFRICA//PEUGEOT/CITROEN) LANCER(CY0A)/LANCER SPORTBACK(CX0A)/ OUTLANDER(CW0W)/OUTLANDER(GF0W)/ ASX(GA0W)/ECLIPSE CROSS(GK0W)/ 4008(PEUGEOT)/C4 AIR CROSS(CITROEN)
GROUP : Gr:11 (ENGINE)		

1. Description :

Please refer to the attached documents for the information about the mention in the applicable service manual.

The descriptions of following contents were added due to change of the supplier of Water Pump Drive Belt.

- Service Specifications
- Special Tools
- Standard value for Removal and Installation

Regarding the drive belt of New (MITSUBOSHI) and Old (UNITTA) version, the both parts are interchangeable without any problem.

2. Affected service manuals :

Please refer to the attached documents (Attached sheet 1)

3. About the details :

Please refer to the attached documents (Attached sheet 14-29)

4. Application and implementation timing :

- Applied from initial production of each vehicles which equipped with 4N1 series Engine.
- Regarding the service parts of new Water pump drive belt (made by MITSUBOSHI), it has been available from middle of July, '19.

Applicable manual	Pub. No.	Applicable title (INFO-ID/SIE No.)	Contents
2011 OUTLANDER Workshop Manual	<EU> CGXE11E1-CD(English) CGXF11E1-CD(French) CGXG11E1-CD(German) CGXS11E1-CD(Spanish) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-04400-01)	Attached sheet 14
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-07800-01)	Attached sheet 15
		SPECIAL TOOLS (M111-00-062-70000-01)	Attached sheet 22
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-53100-01)	Attached sheet 23
		SPECIAL TOOLS (M113-00-063-40800-01)	Attached sheet 24
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-66200-01)	Attached sheet 25
2012 OUTLANDER Workshop Manual	<EU> CGXE12E1-CD(English) CGXF12E1-CD(French) CGXG12E1-CD(German) CGXS12E1-CD(Spanish) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-04400-01)	Attached sheet 14
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-07800-01)	Attached sheet 15
		SPECIAL TOOLS (M111-00-062-70000-01)	Attached sheet 22
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-53100-01)	Attached sheet 23
		SPECIAL TOOLS (M113-00-063-40800-01)	Attached sheet 24
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-66200-01)	Attached sheet 25
2013 OUTLANDER Workshop Manual	<EU> CGFE13E1-CD(English) CGFF13E1-CD(French) CGFG13E1-CD(German) CGFS13E1-CD(Spanish) CGFI13E1-CD(Italian) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-20400-01)	Attached sheet 16
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-10800-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-83000-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84300-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2014 OUTLANDER/ OUTLANDER PHEV Workshop Manual	<EU> CGFE14E2-CD(English) CGFF14E2-CD(French) CGFG14E2-CD(German) CGFS14E2-CD(Spanish) CGFI14E2-CD(Italian) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-20400-01)	Attached sheet 16
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-10800-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-83000-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29

EU / RUSSIA / SOUTH AFRICA / ARGENTINA
<OUTLANDER / LANCER / LANCER SPORTBACK>

Attached sheet 1 (2/10)

Applicable manual	Pub. No.	Applicable title (INFO-ID/SIE No.)	Contents
2014.5 OUTLANDER/ OUTLANDER PHEV Workshop Manual	<EU> CGFE14E3-CD(English) CGFF14E3-CD(French) CGFG14E3-CD(German) CGFS14E3-CD(Spanish) CGFI14E3-CD(Italian) <ARGENTINA/ SOUTH AFRICA> DRAFT	WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-10800-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-83000-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2016 OUTLANDER/ OUTLANDER PHEV Workshop Manual	<EU> CGFE16E1-CD(English) CGFF16E1-CD(French) CGFG16E1-CD(German) CGFS16E1-CD(Spanish) CGFI16E1-CD(Italian) <ARGENTINA/ SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-20400-01)	Attached sheet 16
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-10800-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-83001-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52701-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2017 OUTLANDER Workshop Manual	<EU> CGFE17E1-CD(English) CGFF17E1-CD(French) CGFG17E1-CD(German) CGFS17E1-CD(Spanish) CGFI17E1-CD(Italian) <ARGENTINA/RUSSIA/ SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-38900-01)	Attached sheet 16
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-13100-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-83002-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84302-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52701-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2012 LANCER/ LANCER SPORTBACK Workshop Manual	<EU> CGSE12E1-CD(English) CGSF12E1-CD(French) CGSG12E1-CD(German) CGSS12E1-CD(Spanish) CGSI12E1-CD(Italian) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-15200-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-08900-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-82900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-67200-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-48600-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-67300-01)	Attached sheet 29

Applicable manual	Pub. No.	Applicable title (INFO-ID/SIE No.)	Contents
2013 LANCER/ LANCER SPORTBACK Workshop Manual	<EU> CCAE13E1-CD(English) CCAF13E1-CD(French) CCAG13E1-CD(German) CCAS13E1-CD(Spanish) CCAI13E1-CD(Italian) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-15200-01)	Attached sheet 18
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		SPECIAL TOOLS (M111-00-062-82900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-165-04000-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-48600-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-73600-01)	Attached sheet 29
2015 LANCER/ LANCER SPORTBACK Workshop Manual	<EU> CCAE15E1-CD(English) CCAF15E1-CD(French) CCAG15E1-CD(German) CCAS15E1-CD(Spanish) CCAI15E1-CD(Italian) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-15200-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-08900-01)	Attached sheet 19
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		SPECIAL TOOLS (M113-00-063-48600-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-73600-01)	Attached sheet 29
2011 ASX Workshop Manual *1	<EU> CGWE11E2-CD(English) CGWF11E2-CD(French) CGWG11E2-CD(German) CGWS11E2-CD(Spanish) CGWI11E2-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-031-98800-01)	Attached sheet 14
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-04500-01)	Attached sheet 15
		SPECIAL TOOLS (M111-00-062-62500-01)	Attached sheet 22
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-21800-01)	Attached sheet 23
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 24
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 25
2012 ASX Workshop Manual	<EU> CGWE12E1-CD(English) CGWF12E1-CD(French) CGWG12E1-CD(German) CGWS12E1-CD(Spanish) CGWI12E1-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-14100-01)	Attached sheet 18
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		SPECIAL TOOLS (M111-00-062-80700-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-69400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-48600-01)	Attached sheet 16
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-67300-01)	Attached sheet 29

***1:** Regarding 4008(PEUGEOT) and C4 AIRCROSS(CITROEN), please refer 2011 ASX in the above table.

Applicable manual	Pub. No.	Applicable title (INFO-ID/SIE No.)	Contents
2013 ASX Workshop Manual	<EU> CGAE13E2-CD(English) CGAF13E2-CD(French) CGAG13E2-CD(German) CGAS13E2-CD(Spanish) CGAI13E2-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-25900-01)	Attached sheet 18
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		SPECIAL TOOLS (M111-00-062-85200-01)	Attached sheet 26
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		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-72500-01)	Attached sheet 29
2014 ASX Workshop Manual	<EU> CGAE14E1-CD(English) CGAF14E1-CD(French) CGAG14E1-CD(German) CGAS14E1-CD(Spanish) CGAI14E1-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-25900-01)	Attached sheet 18
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		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-165-16900-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2015 ASX Workshop Manual	<EU> CGAE15E1-CD(English) CGAF15E1-CD(French) CGAG15E1-CD(German) CGAS15E1-CD(Spanish) CGAI15E1-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-25900-01)	Attached sheet 18
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2015.5 ASX Workshop Manual	<EU> CGAE15E2-CD(English) CGAF15E2-CD(French) CGAG15E2-CD(German) CGAS15E2-CD(Spanish) CGAI15E2-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-36700-01)	Attached sheet 18
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		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-165-26600-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-83900-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29

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2017 ASX Workshop Manual	<EU> CGAE17E1-CD(English) CGAF17E1-CD(French) CGAG17E1-CD(German) CGAS17E1-CD(Spanish) CGAI17E1-CD(Italian) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-36700-01)	Attached sheet 18
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		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-165-26600-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-83900-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2018 ASX Workshop Manual	<EU> CGAE18E1-CD(English) CGAF18E1-CD(French) CGAG18E1-CD(German) CGAI18E1-CD(Italian) CGAS18E1-CD(Spanish) <RUSSIA/SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-36700-01)	Attached sheet 18
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		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-165-26600-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-83900-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2019 ECLIPSE CROSS Workshop Manual	<EU> CGKE19E2-CD(English) CGKF19E2-CD(French) CGKG19E2-CD(German) CGKI19E2-CD(Italian) CGKS19E2-CD(Spanish) <RUSSIA> DRAFT	SERVICE SPECIFICATIONS (M11110003A000300)	Attached sheet 16
		WATER PUMP DRIVE BELT TENSION CHECK (M11110059A000200)	Attached sheet 17
		SPECIAL TOOLS (M11110006A000300)	Attached sheet 26
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2020 ECLIPSE CROSS Workshop Manual	<EU> CGKE20E1-CD(English) CGKF20E1-CD(French) CGKG20E1-CD(German) CGKS20E1-CD(Spanish) CGKI20E1-CD(Italian) <ARGENTINA/RUSSIA/ SOUTH AFRICA> DRAFT	SERVICE SPECIFICATIONS (M11110003A000300)	Attached sheet 16
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2016 OUTLANDER Workshop Manual	<G.EXP/GCC> PWRE1504R(English) PWRS1505R(Spanish) <BRAZIL> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-33400-01)	Attached sheet 20
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-12000-01)	Attached sheet 21
		SPECIAL TOOLS (M111-00-062-92600-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-78700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2017 OUTLANDER Workshop Manual	<G.EXP/GCC> PWRE1607R(English) PWRS1608R(Spanish) <BRAZIL> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-33400-01)	Attached sheet 20
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-12000-01)	Attached sheet 21
		SPECIAL TOOLS (M111-00-062-92600-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-78700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2019 OUTLANDER Workshop Manual	<G.EXP/GCC> PWRE1803R(English) PWRS1804R(Spanish) <BRAZIL> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-33400-01)	Attached sheet 20
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-12000-01)	Attached sheet 21
		SPECIAL TOOLS (M111-00-062-92600-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
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2020 OUTLANDER Workshop Manual	<G.EXP/GCC> PWPE1911R(English) PWPS1912R(Spanish) <BRAZIL> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-33400-01)	Attached sheet 20
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-12000-01)	Attached sheet 21
		SPECIAL TOOLS (M111-00-062-92600-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-78700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29

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2013 OUTLANDER Workshop Manual	<AUSTRALIA> AU900304 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-20400-01)	Attached sheet 16
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-10800-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-86300-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52700-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2014 OUTLANDER Workshop Manual	<AUSTRALIA> AU900408 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-20400-01)	Attached sheet 16
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		SPECIAL TOOLS (M111-00-062-86300-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
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2014.5 OUTLANDER Workshop Manual	<AUSTRALIA> AU900428 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-20400-01)	Attached sheet 16
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		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-10800-01)	Attached sheet 17
		SPECIAL TOOLS (M111-00-062-86300-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84301-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-52700-01)	Attached sheet 28
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		SPECIAL TOOLS (M113-00-064-06900-01)	Attached sheet 28
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		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84302-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-064-06900-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29
2020 OUTLANDER Workshop Manual	<AUSTRALIA> AU901242 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-38900-01)	Attached sheet 20
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-13100-01)	Attached sheet 21
		SPECIAL TOOLS (M111-00-063-01500-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-84302-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-064-06900-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-70300-01)	Attached sheet 29

Applicable manual	Pub. No.	Applicable title (INFO-ID/SIE No.)	Contents
2013 ASX Workshop Manual	<AUSTRALIA> AU900409 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 29
2014 ASX Workshop Manual	<AUSTRALIA> AU900410 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 29
2015 ASX Workshop Manual	<AUSTRALIA> AU900418 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 29
2016 ASX Workshop Manual	<AUSTRALIA> AU900479 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 29

Applicable manual	Pub. No.	Applicable title (INFO-ID/SIE No.)	Contents
2017 ASX Workshop Manual	<AUSTRALIA> AU900573 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 29
2018 ASX Workshop Manual	<AUSTRALIA> AU900628 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
2019 ASX Workshop Manual	<AUSTRALIA> AU900934 <NEW ZEALAND> DRAFT	SERVICE SPECIFICATIONS (M111-00-032-01100-01)	Attached sheet 18
		WATER PUMP DRIVE BELT TENSION CHECK (M111-00-590-06700-01)	Attached sheet 19
		SPECIAL TOOLS (M111-00-062-66900-01)	Attached sheet 26
		CRANKSHAFT PULLEY REMOVAL AND INSTALLATION (M112-00-164-43400-01)	Attached sheet 27
		SPECIAL TOOLS (M113-00-063-21500-01)	Attached sheet 28
		ALTERNATOR REMOVAL AND INSTALLATION (M113-02-760-61700-01)	Attached sheet 29

**ENGINE MECHANICAL <4N1>
GENERAL INFORMATION**

GENERAL INFORMATION

M1111000102017

Item			Specification
Total displacement mL			2,268
Bore × Stroke mm			86.0 × 97.6
Compression ratio			14.9
Compression chamber			Direct injection type
Camshaft arrangement			DOHC
Number of valve	Intake		8
	Exhaust		8
Valve timing	Intake valve	Open (BTDC)	8° <low speed cam> 18° <High speed cam>
		Close (ABDC)	16° <low speed cam> 34° <High speed cam>
		Exhaust valve	Open (BBDC)
	Close (ATDC)		16°
	Fuel system		
Rocker arm			Roller type
Auto-lash adjuster			Not equipped

SERVICE SPECIFICATIONS

< Added >

<In case of UNITTA>

M1111000302044

Item		Standard value	Limit
Drive belt tension	Vibration frequency Hz (Reference)	79 – 236	–
	Tension N (Reference)	117 – 1054	–
Water pump drive belt	Vibration frequency Hz (Reference)	113 – 264	–
	Deflection mm (Reference)	Less than 20	–
Valve clearance (at cold) [indicates clearance between cam and roller] mm	Intake valve	0.08 ± 0.03	–
	Exhaust valve	0.16 ± 0.03	–
Idle speed r/min		650 ± 50	–
Compression pressure kPa (at engine speed of 200 r/min)		2,440	Minimum 1,700
Compression pressure difference of all cylinder (at engine speed of 200 r/min) kPa		–	Maximum 300

< Added >

Water pump drive belt <In case of MITSUBOSHI>	Vibration frequency Hz (Reference)	130 – 256	–
	Deflection mm (Reference)	Less than 21.9	–

ENGINE MECHANICAL <4N1> ON-VEHICLE SERVICE

5. Hold the special tool MB992080 to the middle of the drive belt between the pulleys (at the place indicated by arrow), approximately 10 – 15 mm away from the rear surface of the drive belt so that it is perpendicular to the drive belt (within an angle of $\pm 15^\circ$).
6. Press the "MEASURE" button.
7. Gently tap the middle of the drive belt between the pulleys (the place indicated by the arrow) with your finger as shown in the illustration, and measure that the vibration frequency of the drive belt is within the standard value. < Old >

Standard value (Reference): ~~113 – 264 Hz~~ ←

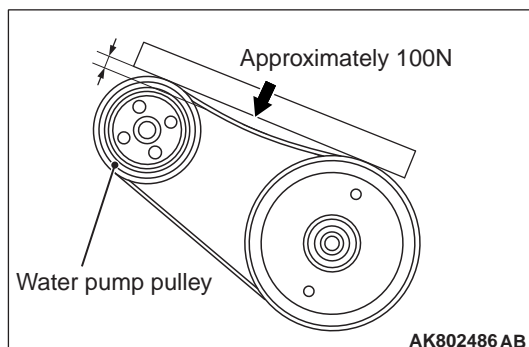
NOTE: To take the measurement repeatedly, flip the water pump drive belt again.

8. After the completion of the measurement, press and hold the "POWER" button to turn off the power supply.
9. If not within the standard value, replace the water pump drive belt.

<When the deflection is measured>

⚠ CAUTION

- When measuring the deflection, make sure that the engine is cold.
- Measure the deflection after turning the crankshaft clockwise one turn or more.



1. Apply approximately 100 N of force to the middle of the water pump drive belt between the pulleys (at the place indicated by the arrow) and check that the amount of deflection is within the standard value.

Standard value: ~~Less than 20 mm~~ ←

2. If not within the standard value, replace the water pump drive belt.

WATER PUMP DRIVE BELT CHECK

M1111051100064

1. Check the every part of water pump drive belt for damage including cracks or delamination in detail by a visual inspection or touching.
2. If there is the damage, replace the water pump drive belt with a new one.

< New >

113 – 264 Hz <In case of UNITTA>
130 – 256 Hz <In case of MITSUBOSHI>

< New >

Less than 20 mm <In case of UNITTA>
Less than 21.9 mm <In case of MITSUBOSHI>

**ENGINE MECHANICAL <4N1>
GENERAL INFORMATION**

< Added > <In case of UNITTA>

SERVICE SPECIFICATIONS

M1111000302204

Item			Standard value	Limit
Drive belt tension	Vibration frequency Hz (Reference)		57 – 185	–
	Tension N (Reference)		91 – 989	–
Water pump drive belt	Vibration frequency Hz (Reference)	M/T	113 – 264	–
		A/T	141 – 249	–
	Tension N (Reference)	M/T	100 – 550	–
		A/T	158 – 496	–
Valve clearance (at cold) [*: indicates clearance between cam and roller] mm	Intake valve		0.14 ± 0.03	–
	Exhaust valve		0.16 ± 0.03*	–
Idle speed r/min			650 ± 50	–
Compression pressure kPa (at engine speed of 200 r/min)			2,440	Minimum 1,700
Compression pressure difference of all cylinder (at engine speed of 200 r/min) kPa			–	Maximum 300

< Added >

Water pump drive belt <In case of MITSUBOSHI>	Vibration frequency Hz (Reference)	M/T	130 – 256	–
		A/T	129 – 253	–
	Tension N (Reference)		135 – 520	–

ENGINE MECHANICAL <4N1> ON-VEHICLE SERVICE

5. Hold the special tool MB992080 to the middle of the drive belt between the pulleys (at the place indicated by arrow), approximately 10 – 15 mm away from the rear surface of the drive belt so that it is perpendicular to the drive belt (within an angle of $\pm 15^\circ$).
6. Press the "MEASURE" button.
7. Gently tap the middle of the drive belt between the pulleys (the place indicated by the arrow) with your finger as shown in the illustration, and measure that the vibration frequency of the drive belt is within the standard value.

Standard value (Reference):

113 – 264 Hz <M/T>

141 – 249 Hz <A/T>

NOTE: To take the measurement repeatedly, flip the water pump drive belt again.

8. After the completion of the measurement, press and hold the "POWER" button to turn off the power supply.
9. If not within the standard value, replace the water pump drive belt.

<In case of UNITTA>

< Added >

< Added >

<In case of MITSUBOSHI>

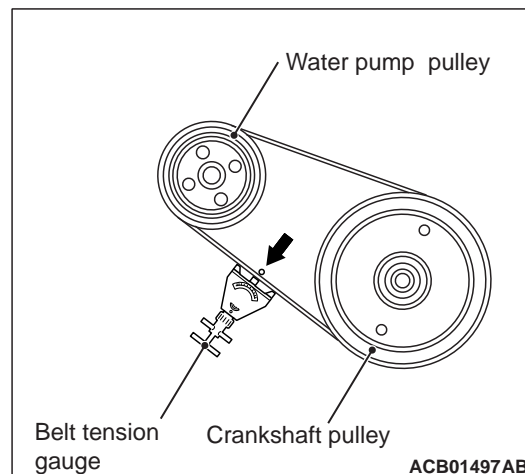
130 – 256 Hz <M/T>

129 – 253 Hz <A/T>

<When the tension is measured>

CAUTION

- When measuring the tension, make sure that the engine is cold.
- Measure the tension after turning the crankshaft clockwise one turn or more.



1. Use a belt tension gauge in the middle of the drive belt between the pulleys shown in the figure (at the place indicated by the arrow) to check that the drive belt tension is within the standard value.

Standard value (Reference):

100 – 550 N <M/T>

158 – 496 N <A/T>

2. If not within the standard value, replace the water pump drive belt.

< Added >

<In case of MITSUBOSHI>

135 – 520 N

**ENGINE MECHANICAL <4N1>
SERVICE SPECIFICATIONS**

< Added > <In case of UNITTA>

SERVICE SPECIFICATIONS

M1111000302152

Item				Standard value	Limit
Drive belt tension	Vibration frequency Hz (Reference)			57 – 185	–
	Tension N (Reference)			91 – 989	–
Water pump drive belt	Vibration frequency Hz (Reference)	MIVEC		113 – 264	–
		Except MIVEC		141 – 249	–
	Tension N (Reference)	MIVEC		100 – 550	–
		Except MIVEC		158 – 496	–
Valve clearance (at cold) [*: indicates clearance between cam and roller] mm	Intake valve	with MIVEC		0.08 ± 0.03*	–
		without MIVEC		0.14 ± 0.03	
	Exhaust valve			0.16 ± 0.03*	–
Idle speed r/min				650 ± 50	–
Compression pressure kPa (at engine speed of 200 r/min)				2,260	Minimum 1,550
Compression pressure difference of all cylinder (at engine speed of 200 r/min) kPa				–	Maximum 300

< Added >

Water pump drive belt <In case of MITSUBOSHI>	Vibration frequency Hz (Reference)	MIVEC	130 – 256	–
		Except MIVEC	129 – 253	–
	Tension N (Reference)		135 – 520	–

<In case of MITSUBOSHI>

- MIVEC: 130 – 256 Hz
- Except MIVEC: 129 – 253 Hz

Attached sheet 19

< Added >

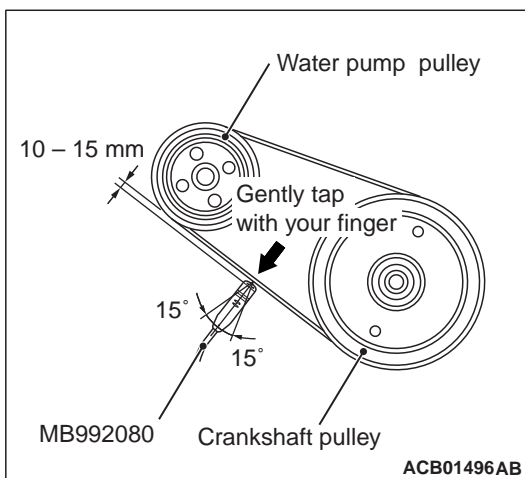
<In case of UNITTA>

< Added >

ENGINE MECHANICAL <4N1> ON-VEHICLE SERVICE

⚠ CAUTION

- Do not allow any contaminants such as water or oil to get onto the microphone.
- If strong gusts of wind blow against the microphone or if there are any loud sources of noise nearby, the values measured by the microphone may not correspond to actual values.
- If the microphone is touching the belt while the measurement is being made, the values measured by the microphone may not correspond to actual values.
- Do not take the measurement while the vehicle's engine is running.



5. Hold the special tool MB992080 to the middle of the drive belt between the pulleys (at the place indicated by arrow), approximately 10 – 15 mm away from the rear surface of the drive belt so that it is perpendicular to the drive belt (within an angle of $\pm 15^\circ$).
6. Press the "MEASURE" button.
7. Gently tap the middle of the drive belt between the pulleys (the place indicated by the arrow) with your finger as shown in the illustration, and measure that the vibration frequency of the drive belt is within the standard value.

Standard value (Reference):

- MIVEC: 113 – 264 Hz
- Except MIVEC: 141 – 249 Hz

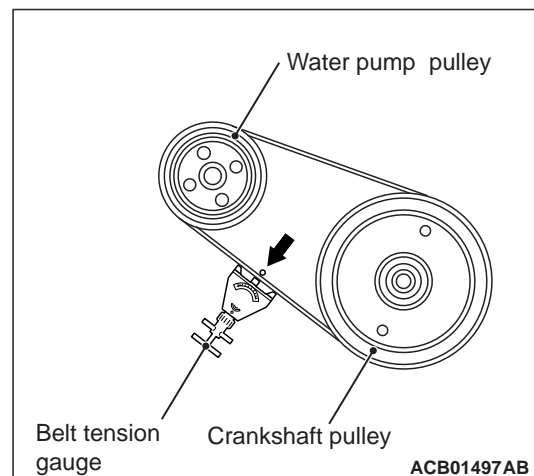
NOTE: To take the measurement repeatedly, fillip the water pump drive belt again.

8. After the completion of the measurement, press and hold the "POWER" button to turn off the power supply.
9. If not within the standard value, replace the water pump drive belt.

<When the tension is measured>

⚠ CAUTION

- When measuring the tension, make sure that the engine is cold.
- Measure the tension after turning the crankshaft clockwise one turn or more.



1. Use a belt tension gauge in the middle of the drive belt between the pulleys shown in the figure (at the place indicated by the arrow) to check that the drive belt tension is within the standard value.

Standard value (Reference):

- MIVEC: 100 – 550 N
- Except MIVEC: 158 – 496 N

< Added >
<In case of UNITTA>

2. If not within the standard value, replace the water pump drive belt.

< Added >

<In case of MITSUBOSHI>
135 – 520 N

ENGINE MECHANICAL <4N1> SERVICE SPECIFICATIONS

< Added > <In case of UNITTA>

SERVICE SPECIFICATIONS

M1111000302334

Item		Standard value	Limit
Drive belt tension	Vibration frequency Hz (Reference)	57 – 185	–
	Tension N (Reference)	91 – 989	–
Water pump drive belt	Vibration frequency Hz (Reference)	141 – 249	–
	Tension N (Reference)	158 – 496	–
Valve clearance (at cold) [*: indicates clearance between cam and roller] mm	Intake valve	0.14 ± 0.03	–
	Exhaust valve	$0.16 \pm 0.03^*$	–
Idle speed r/min		650 ± 50	–
Compression pressure kPa (at engine speed of 200 r/min)		2,440	Minimum 1,700
Compression pressure difference of all cylinder (at engine speed of 200 r/min) kPa		–	Maximum 300

< Added >

Water pump drive belt <In case of MITSUBOSHI>	Vibration frequency Hz (Reference)	129 – 253	–
	Tension N (Reference)	135 – 520	–

<In case of MITSUBOSHI>
Standard value (Reference): 129 – 253 Hz

Attached sheet 21

< Added >

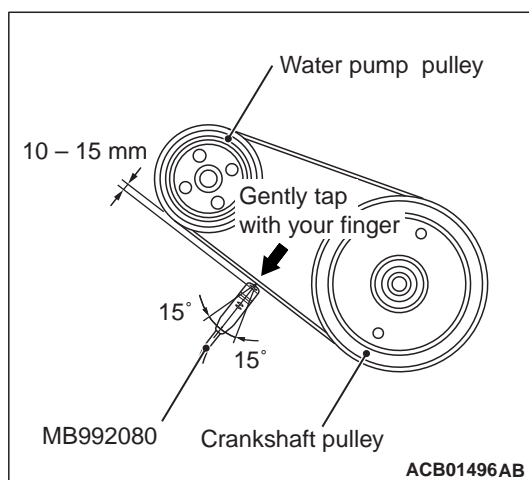
ENGINE MECHANICAL <4N1> ON-VEHICLE SERVICE

< Added >

<In case of UNITTA>

⚠ CAUTION

- Do not allow any contaminants such as water or oil to get onto the microphone.
- If strong gusts of wind blow against the microphone or if there are any loud sources of noise nearby, the values measured by the microphone may not correspond to actual values.
- If the microphone is touching the belt while the measurement is being made, the values measured by the microphone may not correspond to actual values.
- Do not take the measurement while the vehicle's engine is running.



5. Hold the special tool MB992080 to the middle of the drive belt between the pulleys (at the place indicated by arrow), approximately 10 – 15 mm away from the rear surface of the drive belt so that it is perpendicular to the drive belt (within an angle of $\pm 15^\circ$).
6. Press the "MEASURE" button.
7. Gently tap the middle of the drive belt between the pulleys (the place indicated by the arrow) with your finger as shown in the illustration, and measure that the vibration frequency of the drive belt is within the standard value.

Standard value (Reference): 141 – 249 Hz

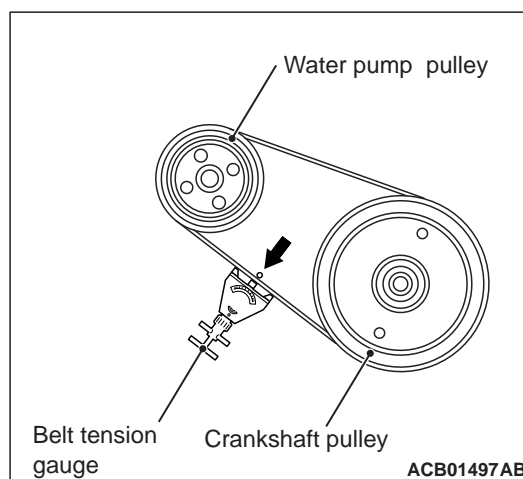
NOTE: To take the measurement repeatedly, fillip the water pump drive belt again.

8. After the completion of the measurement, press and hold the "POWER" button to turn off the power supply.
9. If not within the standard value, replace the water pump drive belt.

<When the tension is measured>

⚠ CAUTION

- When measuring the tension, make sure that the engine is cold.
- Measure the tension after turning the crankshaft clockwise one turn or more.



1. Use a belt tension gauge in the middle of the drive belt between the pulleys shown in the figure (at the place indicated by the arrow) to check that the drive belt tension is within the standard value.

Standard value (Reference): 158 – 496 N

2. If not within the standard value, replace the water pump drive belt.

< Added >

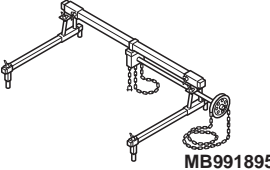
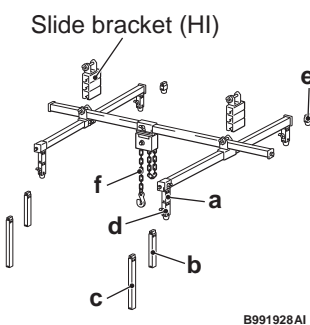
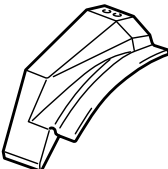
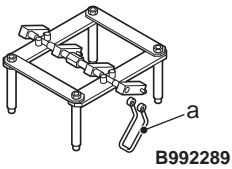
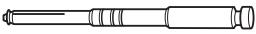
<In case of UNITTA>

< Added >

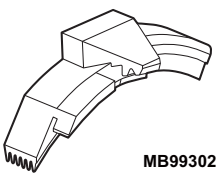
<In case of MITSUBOSHI>

Standard value (Reference): 135 – 520 N

ENGINE MECHANICAL <4N1> SPECIAL TOOLS

Tool	Number	Name	Use
 MB991895	MB991895	Engine hanger	When the engine hanger is used: Supporting the engine assembly during removal and installation of the timing chain case assembly or transmission assembly
 Slide bracket (HI) B991928AI	MB991928 a: MB991929 b: MB991930 c: MB991931 d: MB991932 e: MB991933 f: MB991934	Engine hanger a: Joint (50) × 2 b: Joint (90) × 2 c: Joint (140) × 2 d: Foot (standard) × 4 e: Foot (short) × 2 f: Chain and hook assembly	
 MB992288	MB992288	Drive belt installer	Water pump drive belt installation < Added > <In case of UNITTA>
 B992289	MB992289 a: MB992675	Injector and fuel pipe remover a: Hanger set	Fuel injector and common rail assembly removal
 MB992333	MB992333	Nozzle gasket remover	Fuel injection nozzle gasket removal

< Added >

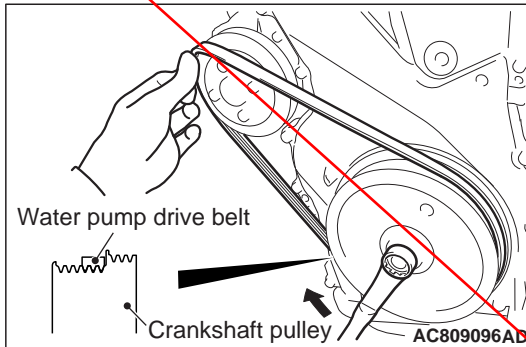
 MB993021HA	MB993021	Drive belt installer	Water pump drive belt installation <In case of MITSUBOSHI>
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ENGINE MECHANICAL <4N1> CRANKSHAFT PULLEY

>>C<< WATER PUMP DRIVE BELT INSTALLATION

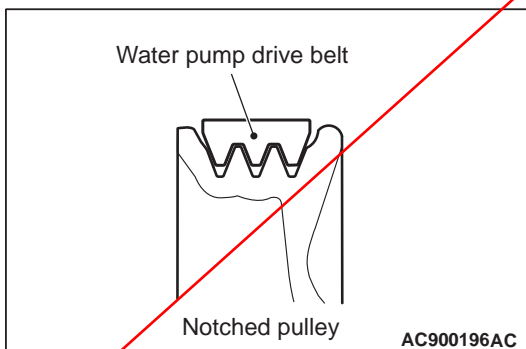
⚠ CAUTION

Be careful not to pinch your fingers when holding the water pump drive belt.



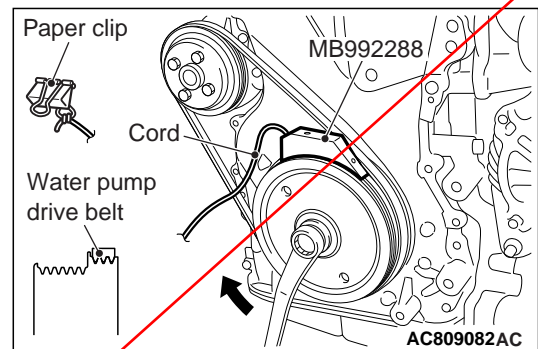
1. Fit the water pump drive belt on the front step (rear three ribs) of the crankshaft pulley, and then push the water pump drive belt at the water pump pulley side with your finger as shown.

⚠ CAUTION



Check that the notches of the notched pulley and the notches of the water pump drive belt are fit correctly.

2. Rotate the crankshaft pulley clockwise slowly to fit the water pump drive belt around the water pump pulley.



3. Set the special tool drive belt installer (MB992288) on the front side of the crankshaft pulley. Then slide it by hand until it touches the water pump drive belt.

NOTE: Hang the special tool drive belt installer (MB992288) on the vehicle components (including front sidemembers) using a cord and paper clip to prevent from falling.

4. Release the special tool. Then rotate crankshaft pulley clockwise slightly until special tool MB992288 is engaged between the water pump drive belt and the crankshaft pulley.
5. Rotate the crankshaft pulley clockwise further to fit the water pump drive belt around the rear side of the crankshaft pulley.
6. Remove special tool MB992288.
7. Turn the crankshaft pulley clockwise on several times and check that the water pump drive belt is installed in the water pump pulley and the crankshaft pulley securely.

< Old >

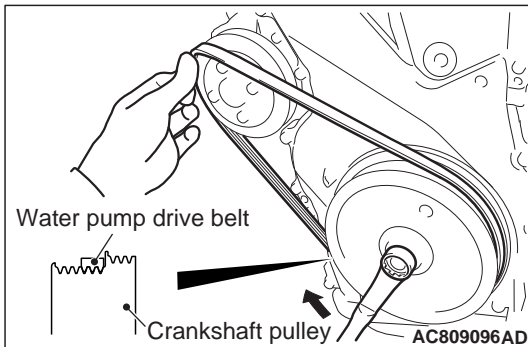
< New >

Attached sheet 23(2/2)

>>C<< WATER PUMP DRIVE BELT INSTALLATION

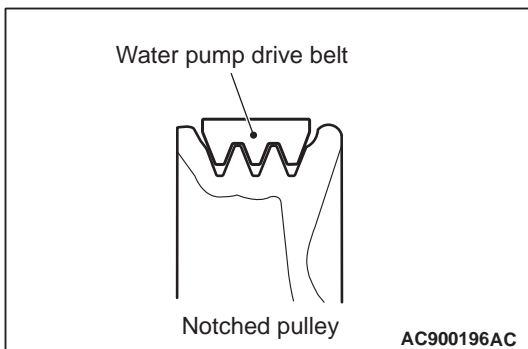
CAUTION

Be careful not to pinch your fingers when holding the water pump drive belt.



1. Fit the water pump drive belt on the front step (rear three ribs) of the crankshaft pulley, and then push the water pump drive belt at the water pump pulley side with your finger as shown.

CAUTION

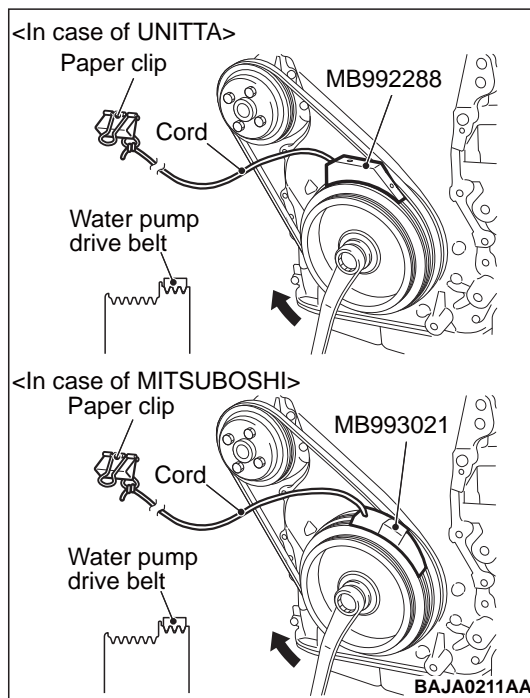


Check that the notches of the notched pulley and the notches of the water pump drive belt are fit correctly.

2. Rotate the crankshaft pulley clockwise slowly to fit the water pump drive belt around the water pump pulley.

CAUTION

Use a specified combination of special tool and belt, or the water pump drive belt may be damaged.



3. Set the special tool drive belt installer (MB992288) on the front side of the crankshaft pulley. Then slide it by hand until it touches the water pump drive belt.

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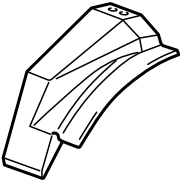
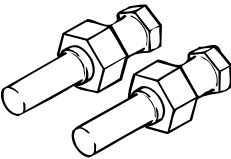
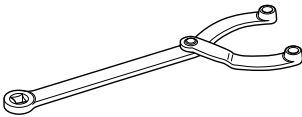
- Hang the special tool drive belt installer (MB992288) on the vehicle components (including front sidemembers) using a cord and paperclip to prevent from falling.

4. Release the special tool. Then rotate crankshaft pulley clockwise slightly until special tool MB992288 is engaged between the water pump drive belt and the crankshaft pulley.
5. Rotate the crankshaft pulley clockwise further to fit the water pump drive belt around the rear side of the crankshaft pulley.
6. Remove special tool MB992288.
7. Turn the crankshaft pulley clockwise on several times and check that the water pump drive belt is installed in the water pump pulley and the crankshaft pulley securely.

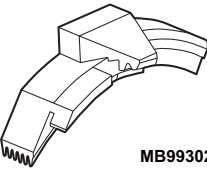
**ENGINE OVERHAUL <4N1>
SPECIAL TOOLS**

SPECIAL TOOLS

M1113000603408

Tool	Part No.	Tool name	Application
 B992276	MB992276	Drive belt remover	Removal of drive belt
	MB992288	Drive belt installer	Installation of drive belt
 MD998754	MD998754	Pin	Holding the crankshaft pulley
 B990767	MB990767	Front hub and flange yoke holder	

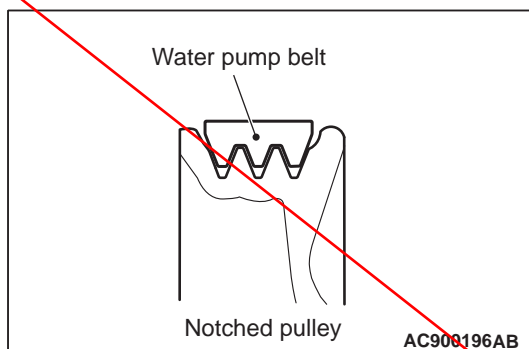
< Added >

 MB993021HA	MB993021	Drive belt installer	Installation of drive belt <In case of MITSUBOSHI>
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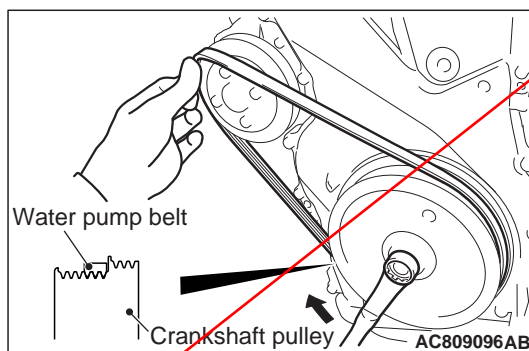
ENGINE OVERHAUL <4N1> ALTERNATOR

>>B<< WATER PUMP BELT INSTALLATION

⚠ CAUTION



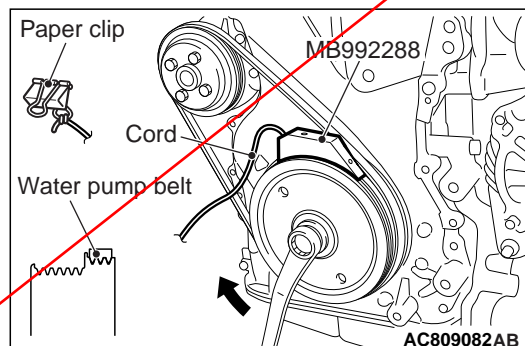
Check that the notches of the notched pulley and the notches of the water pump belt are fit correctly.



1. Place the water pump belt onto the front step (rear 3 ribs area) of crankshaft pulley, slowly turn the crankshaft pulley clockwise with the water pump belt on the water pump pulley side held with your fingers to install the water pump belt.

⚠ CAUTION

Hang the special tool drive belt installer (MB992288) on the vehicle components (including front sidemembers) using a cord and paper clip to prevent from falling.



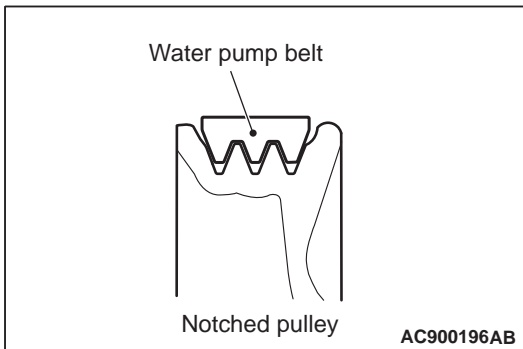
2. Set the special tool drive belt installer (MB992288) to the crankshaft pulley.
NOTE: Slightly turn the crankshaft pulley clockwise until the special tool drive belt installer (MB992288) is pinched and held between the water pump belt and the crankshaft pulley.
3. Slowly turn the crankshaft pulley clockwise and install the water pump belt.
4. Turn the crankshaft pulley clockwise on several times and check that the water pump belt is installed in the water pump pulley and the crankshaft pulley securely.

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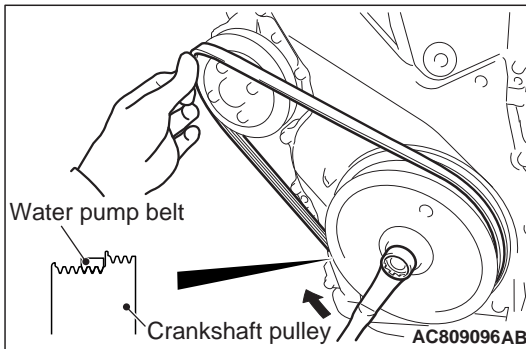
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Attached sheet 25(2/2)

>>B<< WATER PUMP BELT INSTALLATION

⚠ CAUTION

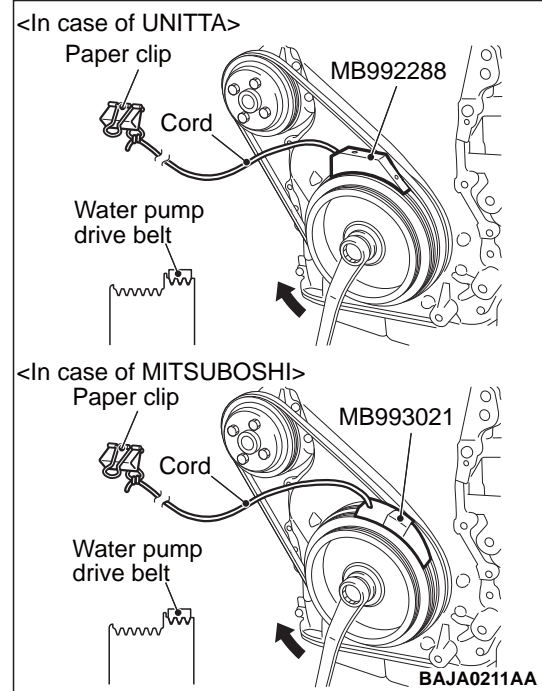
Check that the notches of the notched pulley and the notches of the water pump belt are fit correctly.



1. Place the water pump belt onto the front step (rear 3 ribs area) of crankshaft pulley, slowly turn the crankshaft pulley clockwise with the water pump belt on the water pump pulley side held with your fingers to install the water pump belt.

⚠ CAUTION

Use a specified combination of special tool and belt, or the water pump drive belt may be damaged.



2. Set the special tool drive belt installer (MB992288 or MB993021) to the crankshaft pulley.

NOTE:

- The special tool used for installation of the water pump drive belt differs depending on the part. Therefore, check the supplier name printed on the backside of the belt before installing it.

<In case of UNITTA>

Special tool: Drive belt installer MB992288

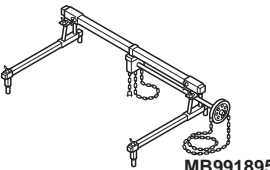
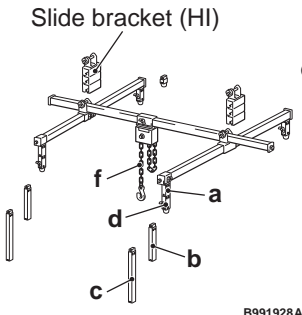
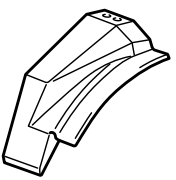
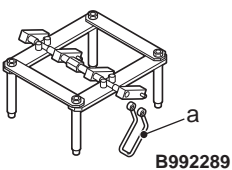

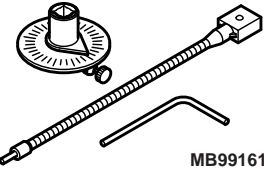
<In case of MITSUBOSHI>

Special tool: Drive belt installer MB993021

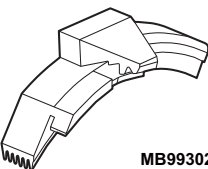
- Hang the special tool drive belt installer (MB992288 or MB993021) on the vehicle components (including front sidemembers) using a cord and paper clip to prevent from falling.

3. Slowly turn the crankshaft pulley clockwise and install the water pump belt.
4. Turn the crankshaft pulley clockwise on several times and check that the water pump belt is installed in the water pump pulley and the crankshaft pulley securely.

ENGINE MECHANICAL <4N1> SPECIAL TOOLS

Tool	Number	Name	Use
 MB991895	MB991895	Engine hanger	When the engine hanger is used: Supporting the engine assembly during removal and installation of the crankshaft pulley, timing chain case assembly or transmission assembly
 Slide bracket (HI) B991928AI	MB991928 a: MB991929 b: MB991930 c: MB991931 d: MB991932 e: MB991933 f: MB991934	Engine hanger a: Joint (50) × 2 b: Joint (90) × 2 c: Joint (140) × 2 d: Foot (standard) × 4 e: Foot (short) × 2 f: Chain and hook assembly	
	MB992288	Drive belt installer	Water pump drive belt installation < Added > <In case of UNITTA>
 B992289	MB992289 a: MB992675	Injector and fuel pipe remover a: Hanger set	Fuel injector and common rail assembly removal
	MB992333	Nozzle gasket remover	Fuel injection nozzle gasket removal
 MB991614	MB991614	Angle gauge	<ul style="list-style-type: none"> Fuel injector holder bolt installation Flywheel bolt installation

< Added >

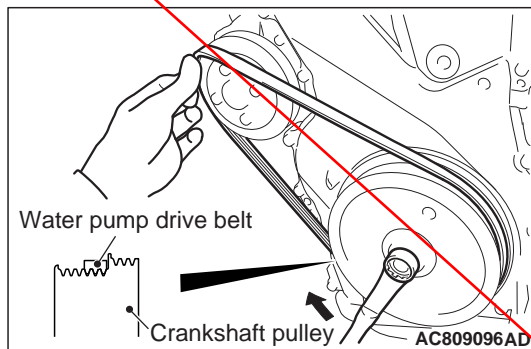
 MB993021HA	MB993021	Drive belt installer	Water pump drive belt installation <In case of MITSUBOSHI>
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ENGINE MECHANICAL <4N1> CRANKSHAFT PULLEY

>>C<< WATER PUMP DRIVE BELT INSTALLATION

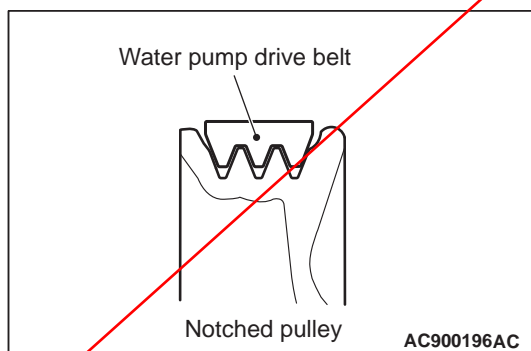
⚠ CAUTION

Be careful not to pinch your fingers when holding the water pump drive belt.



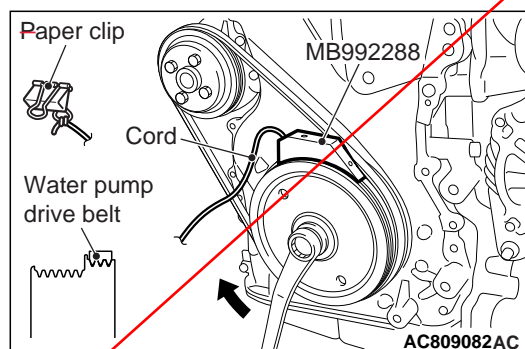
1. Fit the water pump drive belt on the front step (rear three ribs) of the crankshaft pulley, and then push the water pump drive belt at the water pump pulley side with your finger as shown.

⚠ CAUTION



Check that the notches of the notched pulley and the notches of the water pump drive belt are fit correctly.

2. Rotate the crankshaft pulley clockwise slowly to fit the water pump drive belt around the water pump pulley.



3. Set the special tool drive belt installer (MB992288) on the front side of the crankshaft pulley. Then slide it by hand until it touches the water pump drive belt.

NOTE: Hang the special tool drive belt installer (MB992288) on the vehicle components (including front sidemembers) using a cord and paper clip to prevent from falling.

4. Release the special tool. Then rotate crankshaft pulley clockwise slightly until special tool MB992288 is engaged between the water pump drive belt and the crankshaft pulley.
5. Rotate the crankshaft pulley clockwise further to fit the water pump drive belt around the rear side of the crankshaft pulley.
6. Remove special tool MB992288.
7. Turn the crankshaft pulley clockwise on several times and check that the water pump drive belt is installed in the water pump pulley and the crankshaft pulley securely.

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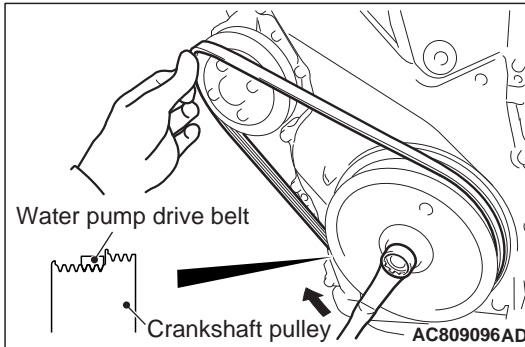
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Attached sheet 27(2/2)

>>C<< WATER PUMP DRIVE BELT INSTALLATION

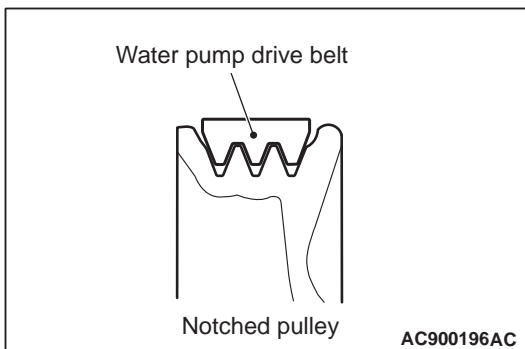
⚠ CAUTION

Be careful not to pinch your fingers when holding the water pump drive belt.



1. Fit the water pump drive belt on the front step (rear three ribs) of the crankshaft pulley, and then push the water pump drive belt at the water pump pulley side with your finger as shown.

⚠ CAUTION

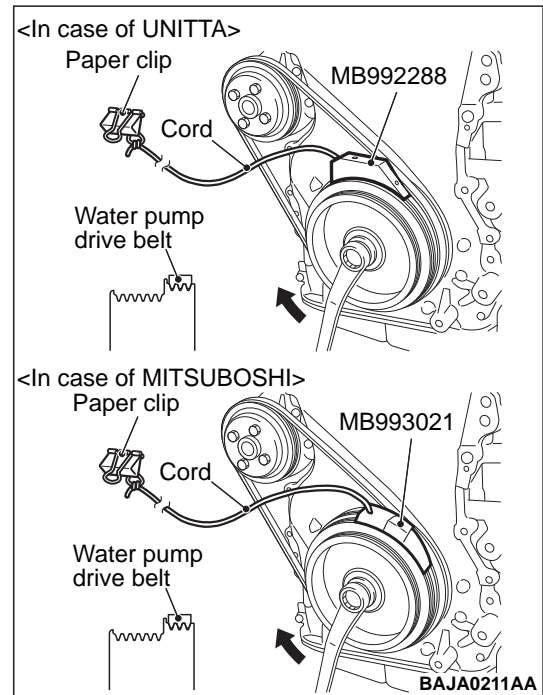


Check that the notches of the notched pulley and the notches of the water pump drive belt are fit correctly.

2. Rotate the crankshaft pulley clockwise slowly to fit the water pump drive belt around the water pump pulley.

CAUTION

Use a specified combination of special tool and belt, or the water pump drive belt may be damaged.


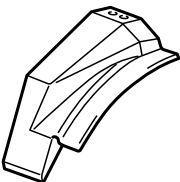
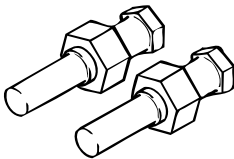
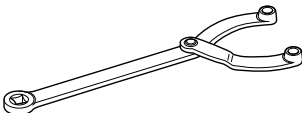


3. Set the special tool drive belt installer (MB992288) on the front side of the crankshaft pulley. Then slide it by hand until it touches the water pump drive belt.
4. Release the special tool. Then rotate crankshaft pulley clockwise slightly until special tool MB992288 is engaged between the water pump drive belt and the crankshaft pulley.
5. Rotate the crankshaft pulley clockwise further to fit the water pump drive belt around the rear side of the crankshaft pulley.
6. Remove special tool MB992288.
7. Turn the crankshaft pulley clockwise on several times and check that the water pump drive belt is installed in the water pump pulley and the crankshaft pulley securely.

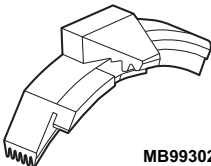
**ENGINE OVERHAUL <4N1>
SPECIAL TOOLS**

SPECIAL TOOLS

M1113000603527

Tool	Part No.	Tool name	Application
 B992276	MB992276	Drive belt remover	Removal of drive belt
 MB992288	MB992288	Drive belt installer	Installation of drive belt
 MD998754	MD998754	Pin	Holding the crankshaft pulley
 B990767	MB990767	Front hub and flange yoke holder	

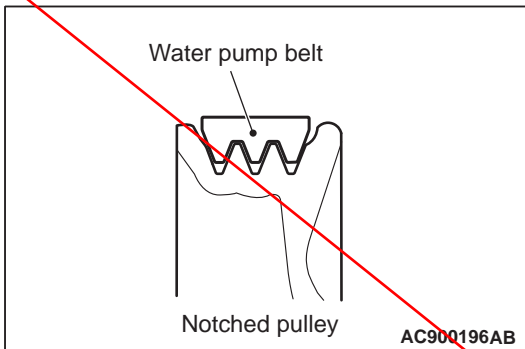
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 MB993021HA	MB993021	Drive belt installer	Installation of drive belt <In case of MITSUBOSHI>
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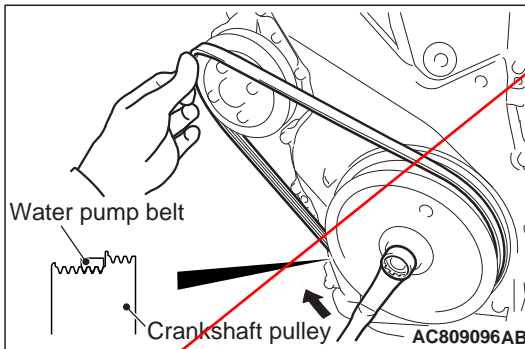
ENGINE OVERHAUL <4N1> ALTERNATOR

>>B<< WATER PUMP BELT INSTALLATION

⚠ CAUTION



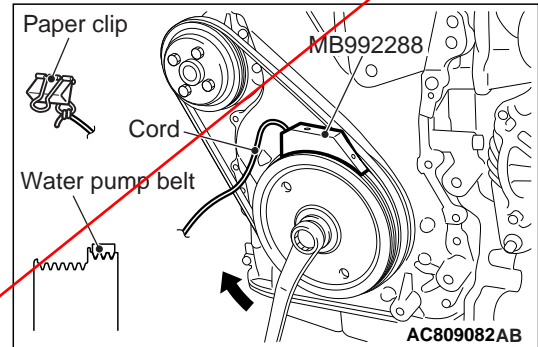
Check that the notches of the notched pulley and the notches of the water pump belt are fit correctly.



1. Place the water pump belt onto the front step (rear 3 ribs area) of crankshaft pulley, slowly turn the crankshaft pulley clockwise with the water pump belt on the water pump pulley side held with your fingers to install the water pump belt.

⚠ CAUTION

Hang the special tool drive belt installer (MB992288) on the vehicle components (including front sidemembers) using a cord and paper clip to prevent from falling.



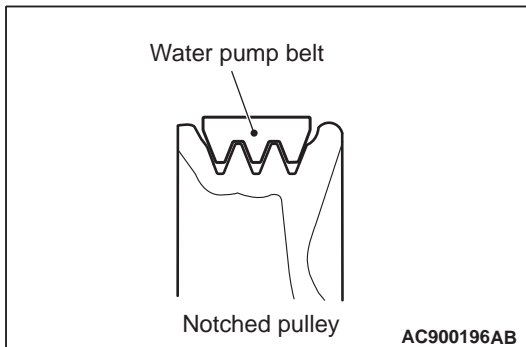
2. Set the special tool drive belt installer (MB992288) to the crankshaft pulley.
NOTE: Slightly turn the crankshaft pulley clockwise until the special tool drive belt installer (MB992288) is pinched and held between the water pump belt and the crankshaft pulley.
3. Slowly turn the crankshaft pulley clockwise and install the water pump belt.
4. Turn the crankshaft pulley clockwise on several times and check that the water pump belt is installed in the water pump pulley and the crankshaft pulley securely.

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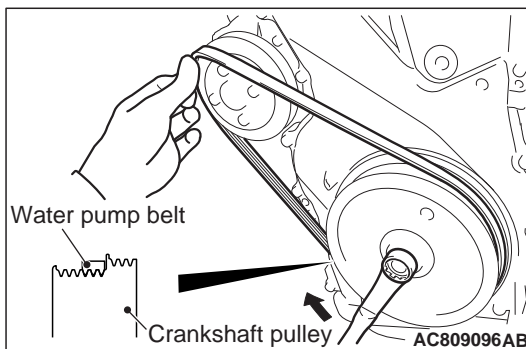
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Attached sheet 29(2/2)

>>B<< WATER PUMP BELT INSTALLATION

⚠ CAUTION

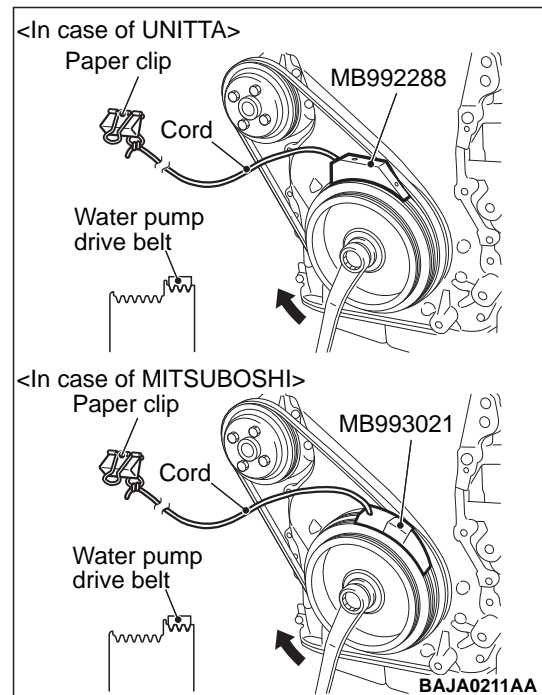
Check that the notches of the notched pulley and the notches of the water pump belt are fit correctly.



1. Place the water pump belt onto the front step (rear 3 ribs area) of crankshaft pulley, slowly turn the crankshaft pulley clockwise with the water pump belt on the water pump pulley side held with your fingers to install the water pump belt.

⚠ CAUTION

Use a specified combination of special tool and belt, or the water pump drive belt may be damaged.



2. Set the special tool drive belt installer (MB992288 or MB993021) to the crankshaft pulley.

NOTE:

- The special tool used for installation of the water pump drive belt differs depending on the part. Therefore, check the supplier name printed on the backside of the belt before installing it.

<In case of UNITTA>

Special tool: Drive belt installer MB992288

<In case of MITSUBOSHI>

Special tool: Drive belt installer MB993021

- Hang the special tool drive belt installer (MB992288 or MB993021) on the vehicle components (including front sidemembers) using a cord and paper clip to prevent from falling.

3. Slowly turn the crankshaft pulley clockwise and install the water pump belt.
4. Turn the crankshaft pulley clockwise on several times and check that the water pump belt is installed in the water pump pulley and the crankshaft pulley securely.