

ski-doo®

2002

Shop Manual

Volume 3

**Grand Touring
Legend
MX Z
Summit**



484 200 036

2002 Shop Manual

VOLUME 3

GRAND TOURING 500/600/SE 600/SE 800/GS 600/GS 700
GRAND TOURING SPORT 500/600/700
GRAND TOURING FAN 380/500

LEGEND SE 600/SE 800/GS 600/GS 700
LEGEND SPORT 500/600/700
LEGEND FAN 380/500

MX Z SPORT 500/600/700/800
MX Z TRAIL 500/600/700
MX Z ADRENALINE 600/700
MX Z RENEGADE 600/700/800
MX Z X 600/700/800
MX Z FAN 380/500
MX Z RER 600/700/800

SUMMIT SPORT 600/700/800
SUMMIT X 800
SUMMIT H.M. 700/800
SUMMIT H.M. X 800
SUMMIT FAN 500



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SAFETY NOTICE

This manual has been prepared as a guide to correctly service and repair some 2002 Ski-Doo snowmobiles. See model list below.

This edition was primarily published to be used by snowmobile mechanic technicians who are already familiar with all service procedures relating to Bombardier made snowmobiles. Mechanic technicians should attend continuous training courses given by Bombardier Training Dept.

Please note that the instructions will apply only if proper hand tools and special service tools are used.

This *Shop Manual* uses technical terms which may be slightly different from the ones used in the *Parts Catalog*.

It is understood that this manual may be translated into another language. In the event of any discrepancy, the English version shall prevail.

The content depicts parts and/or procedures applicable to the particular product at time of writing. *Service* and *Warranty Bulletins* may be published to update the content of this manual. Make sure to read and understand these.

In addition, the sole purpose of the illustrations throughout the manual, is to assist identification of the general configuration of the parts. They are not to be interpreted as technical drawings or exact replicas of the parts.

The use of Bombardier parts is most strongly recommended when considering replacement of any component. Dealer and/or distributor assistance should be sought in case of doubt.

The engines and the corresponding components identified in this document should not be utilized on product(s) other than those mentioned in this document.

Torque wrench tightening specifications must be strictly adhered to. Locking devices (ex.: locking tab, self-locking fasteners, etc.) must be installed or replaced with new ones. If the efficiency of a locking device is impaired, it must be renewed.

This manual emphasizes particular information denoted by the wording and symbols:

WARNING

Identifies an instruction which, if not followed, could cause serious personal injury including possibility of death.

CAUTION: Denotes an instruction which, if not followed, could severely damage vehicle components.

NOTE: Indicates supplementary information needed to fully complete an instruction.

Although the mere reading of such information does not eliminate the hazard, your understanding of the information will promote its correct use. Always use common shop safety practice.

Bombardier Inc. disclaims liability for all damages and/or injuries resulting from the improper use of the contents. We strongly recommend that any services be carried out and/or verified by a highly skilled professional mechanic. It is understood that certain modifications may render use of the vehicle illegal under existing federal, provincial and state regulations.

WHAT'S NEW

WHAT'S NEW

OIL INJECTION SYSTEM 04-06

- New procedure for the oil injection pump adjustment added.

CARBURETOR AND FUEL PUMP 04-10

- Procedure to check DPM manifold for leaks.

DRIVE BELT 05-02

- New adjustment.
- New neutral function verification procedure.

BRAKE 05-06

- Brake pad installation and removal procedure added.
- Countershaft and countershaft bearing installation and removal procedure added.

BATTERY 06-04

- Added removal, installation, charging and storage procedure for new battery.

ELECTRIC STARTER 06-05

- Added removal and installation procedure for new electric starter.

ELECTRICAL TESTING PROCEDURE 06-06

- New table added for the testing procedure of 360 W magneto.

SUSPENSION SC-10 III 07-04

- Added new suspension SC-10 III.

INTRODUCTION

This *Shop Manual Volume 3* covers the following Bombardier made 2002 snowmobiles:

MODELS	MODEL NUMBER	MODELS	MODEL NUMBER
GRAND TOURING* SPORT 500 (BLACK) (Canada)	2087	MX Z TRAIL 500 (YELLOW) (Canada).....	1944
GRAND TOURING SPORT 500 (BLACK) (U.S.) ..	2088	MX Z TRAIL 500 (YELLOW) (U.S.).....	1945
GRAND TOURING SPORT 500 (MOON) (Europe)	2140	MX Z TRAIL 500 (BLACK) (Canada)	1946
GRAND TOURING SPORT 500 (MOON) (Canada)	2089	MX Z TRAIL 500 (BLACK) (U.S.)	1947
GRAND TOURING SPORT 500 (MOON) (U.S.) ..	2090	MX Z TRAIL 600 (YELLOW) (Canada).....	1940
GRAND TOURING SPORT 600 (BLACK) (Canada)	2083	MX Z TRAIL 600 (YELLOW) (U.S.).....	1941
GRAND TOURING SPORT 600 (BLACK) (U.S.) ..	2084	MX Z TRAIL 600 (BLACK) (Canada)	1943
GRAND TOURING SPORT 600 (MOON) (Canada)	2085	MX Z TRAIL 600 (BLACK) (U.S.)	1944
GRAND TOURING SPORT 600 (MOON) (U.S.) ..	2086	MX Z TRAIL 700 (YELLOW) (Canada).....	1936
GRAND TOURING SPORT 700 (BLACK) (Canada)	2079	MX Z TRAIL 700 (YELLOW) (U.S.).....	1937
GRAND TOURING SPORT 700 (BLACK) (U.S.) ..	2080	MX Z TRAIL 700 (BLACK) (Canada)	1938
GRAND TOURING SPORT 700 (MOON) (Canada)	2081	MX Z TRAIL 700 (BLACK) (U.S.)	1939
GRAND TOURING SPORT 700 (MOON) (U.S.) ..	2082	MX Z TRAIL 800 (YELLOW) (Canada).....	1932
GRAND TOURING GS 600 (BLACK) (Canada) ...	2075	MX Z TRAIL 800 (YELLOW) (U.S.).....	1933
GRAND TOURING GS 600 (BLACK) (U.S.)	2076	MX Z TRAIL 800 (BLACK) (Canada)	1934
GRAND TOURING GS 600 (MOON) (Canada) ...	2077	MX Z TRAIL 800 (BLACK) (U.S.)	1935
GRAND TOURING GS 600 (MOON) (U.S.)	2078	MX Z SPORT 500 (YELLOW) (Canada)	1928
GRAND TOURING GS 700 (BLACK) (Canada) ...	2071	MX Z SPORT 500 (YELLOW) (U.S.)	1929
GRAND TOURING GS 700 (BLACK) (U.S.)	2072	MX Z SPORT 500 (YELLOW) (Europe)	2127
GRAND TOURING GS 700 (MOON) (Canada) ...	2073	MX Z SPORT 500 (BLACK) (Canada)	1930
GRAND TOURING GS 700 (MOON) (U.S.)	2074	MX Z SPORT 500 (BLACK) (U.S.)	1931
GRAND TOURING GS 700 (OLYMPIC COLORS) (U.S.)	2159	MX Z SPORT 600 (YELLOW) (Canada)	1924
GRAND TOURING SE 600 (BLACK) (Canada) ...	2148	MX Z SPORT 600 (YELLOW) (U.S.)	1925
GRAND TOURING SE 600 (BLACK) (U.S.)	2149	MX Z SPORT 600 (BLACK) (Canada)	1926
GRAND TOURING SE 600 (BLACK) (Europe)	2138	MX Z SPORT 600 (BLACK) (U.S.)	1927
GRAND TOURING SE (SB) 600 (BLACK) (Canada)	2051	MX Z SPORT 700 (YELLOW) (Canada)	1920
GRAND TOURING SE (SB) 600 (BLACK) (U.S.) ..	2052	MX Z SPORT 700 (YELLOW) (U.S.)	1921
GRAND TOURING SE 800 (BLACK) (Canada) ...	2049	MX Z SPORT 700 (BLACK) (Canada)	1922
GRAND TOURING SE 800 (BLACK) (U.S.)	2050	MX Z SPORT 700 (BLACK) (U.S.)	1923
GRAND TOURING SE (SB) 800 (BLACK) (Canada)	2047	MX Z SPORT 800 (YELLOW) (Canada)	1916
GRAND TOURING SE (SB) 800 (BLACK) (U.S.) ..	2048	MX Z SPORT 800 (YELLOW) (U.S.)	1917
GRAND TOURING 500 F (BLACK) (Canada)	2091	MX Z SPORT 800 (BLACK) (Canada)	1918
GRAND TOURING 500 F (BLACK) (U.S.)	2092	MX Z SPORT 800 (BLACK) (U.S.)	1919
GRAND TOURING 500 F (BLACK) (Europe)	2141	MX Z SPORT 500 R (YELLOW) (Canada).....	2116
GRAND TOURING 500 F (WHITE) (Canada)	2223	MX Z SPORT 500 R (YELLOW) (U.S.).....	2117
GRAND TOURING 380 F (BLACK) (Canada)	2093	MX Z SPORT 500 R (YELLOW) (Europe)	2128
GRAND TOURING 380 F (BLACK) (U.S.)	2094	MX Z SPORT 500 R (BLACK) (Canada)	2118
GRAND TOURING 380 F (BLACK) (Europe)	2142	MX Z SPORT 500 R (BLACK) (U.S.)	2119
		MX Z SPORT 600 R (YELLOW) (Canada).....	2112
		MX Z SPORT 600 R (YELLOW) (U.S.).....	2113
		MX Z SPORT 600 R (BLACK) (Canada)	2114
		MX Z SPORT 600 R (BLACK) (U.S.)	2115
		MX Z SPORT 700 R (YELLOW) (Canada).....	2108
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MODELS	MODEL NUMBER	MODELS	MODEL NUMBER
MX Z SPORT 800 R (YELLOW) (Canada).....	2104	MX Z ADRENALINE 800 R (BLACK) (Canada) ...	1894
MX Z SPORT 800 R (YELLOW) (U.S.).....	2105	MX Z ADRENALINE 800 R (BLACK) (U.S.)	1895
MX Z SPORT 800 R (BLACK) (Canada).....	2106	MX Z ADRENALINE 800 R (RED) (Canada)	1896
MX Z SPORT 800 R (BLACK) (U.S.).....	2107	MX Z ADRENALINE 800 R (RED) (U.S.)	1897
MX Z RENEGADE 600 R (RED) (Canada).....	2007	MX Z X 600 (2-TONE/BLACK) (Canada)	1886
MX Z RENEGADE 600 R (RED) (U.S.).....	2008	MX Z X 600 (2-TONE/BLACK) (U.S.)	1887
MX Z RENEGADE 600 R (BLACK) (Canada)	2005	MX Z X 600 (BLACK) (Canada).....	1888
MX Z RENEGADE 600 R (BLACK) (U.S.)	2006	MX Z X 600 (BLACK) (U.S.).....	1889
MX Z RENEGADE 700 R (RED) (Canada).....	1999	MX Z X 600 (RED) (Canada).....	1890
MX Z RENEGADE 700 R (RED) (U.S.).....	2000	MX Z X 600 (RED) (U.S.)	1891
MX Z RENEGADE 700 R (RED) (Europe)	2135	MX Z X 700 (2-TONE/BLACK) (Canada)	2166
MX Z RENEGADE 700 R (BLACK) (Canada)	1997	MX Z X 700 (2-TONE/BLACK) (U.S.)	2167
MX Z RENEGADE 700 R (BLACK) (U.S.)	1998	MX Z X 700 (BLACK) (Canada).....	2168
MX Z RENEGADE 700 R (OLYMPIC COLORS)(U.S.)	2157	MX Z X 700 (BLACK) (U.S.).....	2169
MX Z RENEGADE 800 R (RED) (Canada).....	2134	MX Z X 700 (RED) (Canada).....	2170
MX Z RENEGADE 800 R (RED) (U.S.).....	1996	MX Z X 700 (RED) (U.S.)	2171
MX Z RENEGADE 800 R (RED) (Europe).....	2143	MX Z X 800 (2-TONE/BLACK) (Canada)	1880
MX Z RENEGADE 800 R (BLACK) (Canada)	1993	MX Z X 800 (2-TONE/BLACK) (U.S.)	1881
MX Z RENEGADE 800 R (BLACK) (U.S.)	1994	MX Z X 800 (BLACK) (Canada).....	1882
MX Z 500 F (BLACK) (Canada)	1951	MX Z X 800 (BLACK) (U.S.).....	1883
MX Z 500 F (BLACK) (U.S.)	1952	MX Z X 800 (RED) (Canada).....	1884
MX Z 500 F (YELLOW) (Canada).....	1949	MX Z X 800 (RED) (U.S.)	1885
MX Z 500 F (YELLOW) (U.S.).....	1950	MX Z X 600 R (2-TONE/BLACK) (Canada).....	2184
MX Z 500 F (YELLOW) (Europe).....	2130	MX Z X 600 R (2-TONE/BLACK) (U.S.).....	2185
MX Z 380 F (YELLOW) (U.S.).....	1953	MX Z X 600 R (2-TONE/BLACK) (Europe)	2126
MX Z 380 F (YELLOW) (Canada).....	1954	MX Z X 600 R (BLACK) (Canada)	2186
MX Z 380 F (YELLOW) (Europe).....	2131	MX Z X 600 R (BLACK) (U.S.)	2187
MX Z 380 F (BLACK) (Canada).....	1955	MX Z X 600 R (RED) (Canada).....	2188
MX Z 380 F (BLACK) (U.S.)	1956	MX Z X 600 R (RED) (U.S.).....	2189
MX Z ADRENALINE 600 R (YELLOW) (Canada).....	1904	MX Z X 700 R (2-TONE/BLACK) (Canada).....	2178
MX Z ADRENALINE 600 R (YELLOW) (U.S.).....	1905	MX Z X 700 R (2-TONE/BLACK) (U.S.).....	2179
MX Z ADRENALINE 600 R (BLACK) (Canada) ...	1906	MX Z X 700 R (BLACK) (Canada)	2180
MX Z ADRENALINE 600 R (BLACK) (U.S.)	1907	MX Z X 700 R (BLACK) (U.S.)	2181
MX Z ADRENALINE 600 R (RED) (Canada)	1908	MX Z X 700 R (RED) (Canada).....	2182
MX Z ADRENALINE 600 R (RED) (U.S.)	1909	MX Z X 700 R (RED) (U.S.).....	2183
MX Z ADRENALINE 700 R HERITAGE EDITION (OLYMPIC COLORS) (Canada)	2206	MX Z X 800 R (2-TONE/BLACK) (Canada).....	2172
MX Z ADRENALINE 700 R OLYMPIC EDITION (OLYMPIC COLORS) (U.S.)	2207	MX Z X 800 R (2-TONE/BLACK) (U.S.).....	2173
MX Z ADRENALINE 700 R (YELLOW) (Canada).....	1898	MX Z X 800 R (2-TONE/BLACK) (Europe)	2125
MX Z ADRENALINE 700 R (YELLOW) (U.S.)	1899	MX Z X 800 R (BLACK) (Canada)	2174
MX Z ADRENALINE 700 R (BLACK) (Canada) ...	1900	MX Z X 800 R (BLACK) (U.S.)	2175
MX Z ADRENALINE 700 R (BLACK) (U.S.)	1901	MX Z X 800 R (RED) (Canada).....	2176
MX Z ADRENALINE 700 R (RED) (Canada)	1902	MX Z X 800 R (RED) (U.S.).....	2177
MX Z ADRENALINE 700 R (RED) (U.S.)	1903	SUMMIT SPORT 600 (BLACK) (Canada)	1985
MX Z ADRENALINE 800 R (YELLOW) (Canada) .	1892	SUMMIT SPORT 600 (BLACK) (U.S.)	1986
MX Z ADRENALINE 800 R (YELLOW) (U.S.).....	1893	SUMMIT SPORT 600 (RED) (Canada).....	1987
		SUMMIT SPORT 600 (RED) (U.S.).....	1988
		SUMMIT SPORT 700 (RED) (Canada).....	1779
		SUMMIT SPORT 700 (RED) (U.S.).....	1780
		SUMMIT SPORT 700 (BLACK) (Canada)	1777

INTRODUCTION

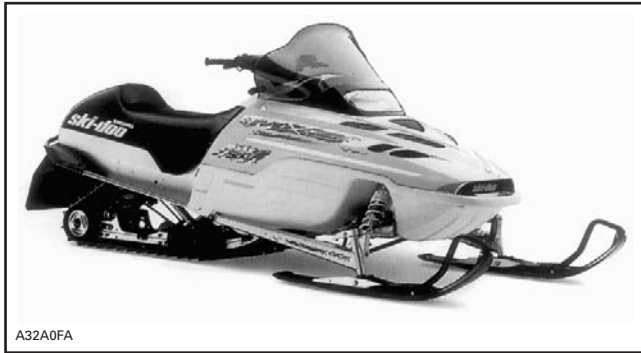
MODELS	MODEL NUMBER	MODELS	MODEL NUMBER
SUMMIT SPORT 700 (BLACK) (U.S.)	1778	SUMMIT HM X 800 R (2-TONE/BLACK) (Canada)	2190
SUMMIT SPORT 800 (RED) (Canada)	1775	SUMMIT HM X 800 R (2-TONE/BLACK) (U.S.) ..	2191
SUMMIT SPORT 800 (RED) (U.S.)	1776	SUMMIT HM X 800 (BLUE) (Canada)	2192
SUMMIT SPORT 800 (BLACK) (Canada)	1773	SUMMIT HM X 800 (BLUE) (U.S.)	2193
SUMMIT SPORT 800 (BLACK) (U.S.)	1774	SUMMIT HM X 800 (RED) (Canada)	2194
SUMMIT SPORT 600 R (BLACK) (Canada)	1989	SUMMIT HM X 800 (RED) (U.S.)	2195
SUMMIT SPORT 600 R (BLACK) (U.S.)	1990	SUMMIT 500 F (BLACK) (Canada)	2009
SUMMIT SPORT 600 R (BLACK) (Europe)	2133	SUMMIT 500 F (BLACK) (U.S.)	2010
SUMMIT SPORT 600 R (RED) (Canada)	1991	LEGEND SPORT 500 (BLACK) (Canada)	2037
SUMMIT SPORT 600 R (RED) (U.S.)	1992	LEGEND SPORT 500 (BLACK) (U.S.)	2038
SUMMIT SPORT 700 R (RED) (Canada)	1983	LEGEND SPORT 500 (BLUE) (Canada)	2035
SUMMIT SPORT 700 R (RED) (U.S.)	1984	LEGEND SPORT 500 (BLUE) (U.S.)	2036
SUMMIT SPORT 700 R (BLACK) (Canada)	1981	LEGEND SPORT 600 (BLUE) (Canada)	2031
SUMMIT SPORT 700 R (BLACK) (U.S.)	1982	LEGEND SPORT 600 (BLUE) (U.S.)	2032
SUMMIT SPORT 700 R HERITAGE EDITION (OLYMPIC COLORS) (Canada)	2208	LEGEND SPORT 600 (BLACK) (Canada)	2033
SUMMIT SPORT 700 R OLYMPIC EDITION (OLYMPIC COLORS) (U.S.)	2209	LEGEND SPORT 600 (BLACK) (U.S.)	2034
SUMMIT SPORT 800 R (RED) (Canada)	2123	LEGEND SPORT 700 (BLUE) (Canada)	2027
SUMMIT SPORT 800 R (RED) (U.S.)	2124	LEGEND SPORT 700 (BLUE) (U.S.)	2028
SUMMIT SPORT 800 R (BLACK) (Canada)	2121	LEGEND SPORT 700 (BLACK) (Canada)	2029
SUMMIT SPORT 800 R (BLACK) (U.S.)	2122	LEGEND SPORT 700 (BLACK) (U.S.)	2030
SUMMIT H.M. 800 R (RED) (Canada)	2217	LEGEND GS 600 (BLUE) (Canada)	2023
SUMMIT H.M. 800 R (RED) (U.S.)	2218	LEGEND GS 600 (BLUE) (U.S.)	2024
SUMMIT H.M. 800 R (BLACK) (Canada)	2215	LEGEND GS 600 (BLACK) (Canada)	2025
SUMMIT H.M. 800 R (BLACK) (U.S.)	2216	LEGEND GS 600 (BLACK) (U.S.)	2026
SUMMIT H.M. 800 (RED) (Canada)	1965	LEGEND GS 700 (BLACK) (Canada)	2021
SUMMIT H.M. 800 (RED) (U.S.)	1966	LEGEND GS 700 (BLACK) (U.S.)	2022
SUMMIT H.M. 800 (BLACK) (Canada)	1963	LEGEND GS 700 (BLUE) (Canada)	2019
SUMMIT H.M. 800 (BLACK) (U.S.)	1964	LEGEND GS 700 (BLUE) (U.S.)	2020
SUMMIT X 800 (2-TONE/BLACK) (Canada)	1967	LEGEND SE 600 (2-TONE/BLACK) (Canada)	2015
SUMMIT X 800 (2-TONE/BLACK) (U.S.)	1968	LEGEND SE 600 (2-TONE/BLACK) (U.S.)	2016
SUMMIT X 800 (BLUE) (Canada)	1969	LEGEND SE 600 (BLACK) (Canada)	2017
SUMMIT X 800 (BLUE) (U.S.)	1970	LEGEND SE 600 (BLACK) (U.S.)	2018
SUMMIT X 800 (RED) (Canada)	1971	LEGEND SE 800 (2-TONE/BLACK) (Canada)	2011
SUMMIT X 800 (RED) (U.S.)	1972	LEGEND SE 800 (2-TONE/BLACK) (U.S.)	2012
SUMMIT X 800 R (2-TONE/BLACK) (Canada)	2196	LEGEND SE 800 (2-TONE/BLACK) (Europe)	2136
SUMMIT X 800 R (2-TONE/BLACK) (U.S.)	2197	LEGEND SE 800 (BLACK) (Canada)	2013
SUMMIT X 800 R (2-TONE/BLACK) (Europe)	2132	LEGEND SE 800 (BLACK) (U.S.)	2014
SUMMIT X 800 (BLUE) (Canada)	2198	LEGEND 500 F (BLACK) (Canada)	2041
SUMMIT X 800 (BLUE) (U.S.)	2199	LEGEND 500 F (BLACK) (U.S.)	2042
SUMMIT X 800 (RED) (Canada)	2200	LEGEND 500 F (BLUE) (Canada)	2039
SUMMIT X 800 (RED) (U.S.)	2205	LEGEND 500 F (BLUE) (U.S.)	2040
SUMMIT HM X 800 (2-TONE/BLACK) (Canada)	1957	LEGEND 380 F (BLUE) (Canada)	2043
SUMMIT HM X 800 (2-TONE/BLACK) (U.S.)	1958	LEGEND 380 F (BLUE) (U.S.)	2044
SUMMIT HM X 800 (BLUE) (Canada)	1959	LEGEND 380 F (BLACK) (Canada)	2045
SUMMIT HM X 800 (BLUE) (U.S.)	1960	LEGEND 380 F (BLACK) (U.S.)	2046
SUMMIT HM X 800 (RED) (Canada)	1961		
SUMMIT HM X 800 (RED) (U.S.)	1962		

All the above listed models are ZX Series models.

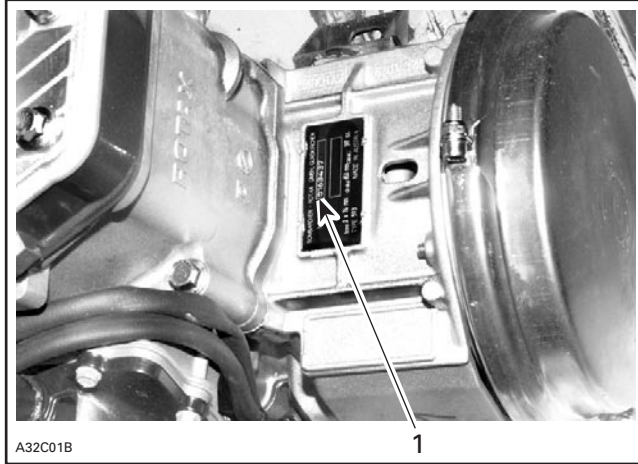
INTRODUCTION

ENGINE SERIAL NUMBER

Engine Serial Number Location



TYPICAL — ZX SERIES

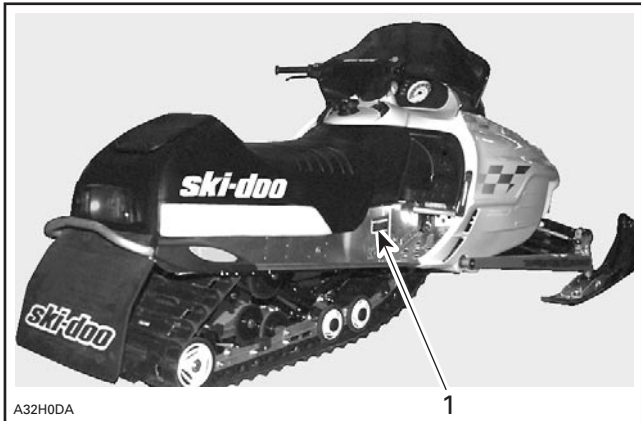


TYPICAL

1. Engine serial number

VEHICLE IDENTIFICATION NUMBER

Vehicle Identification Number Location



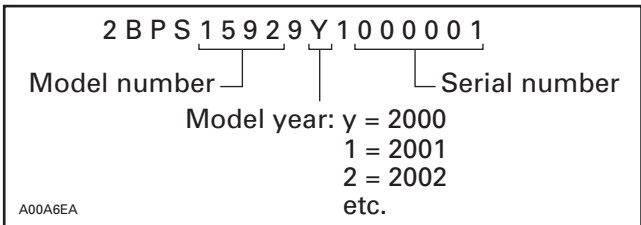
TYPICAL

1. Vehicle identification number

LIST OF ABBREVIATIONS USED IN THIS MANUAL

A	ampere
amp	ampere
A•h	ampere-hour
AC	alternate current
ACM	acceleration and control modulator
ADSA	advanced direct shock action
AMG	absorbed glass mat
BDC	bottom dead center
BTDC	before top dead center
°C	degree Celsius
cc	cubic centimeter
CDI	capacitor discharge ignition
CTR	center
cm	centimeter
cm ²	square centimeter
cm ³	cubic centimeter
DC	direct current
DESS	digitally encoded security system
DPM	digital performance management
°F	degree Fahrenheit
FC	fan cooled
fl. oz	fluid ounce

Identification Number Meaning



ft	foot
GRD	ground
H.A.C.	high altitude compensator
hal.	halogen
HI	high
IFP	internal floating piston
imp. oz	imperial ounce
in	inch
in ²	square inch
in ³	cubic inch
k	kilo (thousand)
kg	kilogram
km/h	kilometer per hour
kPa	Kilopascal
L	liter
lb	pound
lbf	pound (force)
lbf/in ²	pound per square inch
LH	left hand
LO	low
LT	long track
m	meter
MAG	magneto
Max.	maximum
Min.	minimum
mL	milliliter
mm	millimeter
M.E.	millennium edition
MPEM	multi-purpose electronic module
MPH	mile per hour
N	newton
N.A.	not applicable
no.	number
00.0	continuity
O.L	open line (open circuit)
O.D.	outside diameter
OPT	optional
oz	ounce
P/N	part number
PSI	pound per square inch
PTO	power take off

R	rectangular
RH	right hand
RAVE	Rotax adjustable variable exhaust
RER	Rotax electronic reverse
RPM	revolution per minute
RMS	root mean square
RRIM	reinforced reaction injection molding
Sp. Gr.	specific gravity
ST	semi-trapez
TDC	top dead center
TRA	total range adjustable
U.S. oz	ounce (United States)
V	volt
Vac	volt (alternative current)

ARRANGEMENT OF THE MANUAL

The manual is divided into 11 major sections:

- 01 SERVICE TOOLS AND SERVICE PRODUCTS**
- 02 LUBRICATION AND MAINTENANCE**
- 03 TROUBLESHOOTING**
- 04 ENGINE**
- 05 TRANSMISSION**
- 06 ELECTRICAL**
- 07 REAR SUSPENSION**
- 08 STEERING/FRONT SUSPENSION**
- 09 BODY/FRAME**
- 10 TECHNICAL DATA**
- 11 WIRING DIAGRAMS**

Each section is divided in various subsections, and again, each subsection has one or more division.

INTRODUCTION

This *Shop Manual* uses technical terms which may be slightly different from the ones in the parts catalog.

TYPICAL PAGE

Page heading indicates section and subsection detailed.

Subsection title indicates beginning of the subsection.

Italic subtitle above exploded view indicate pertaining models.

Drop represents a liquid product to be applied to a surface. In this case Loctite 271 to screw threads.

Bold face number indicates special procedure concerning this part.

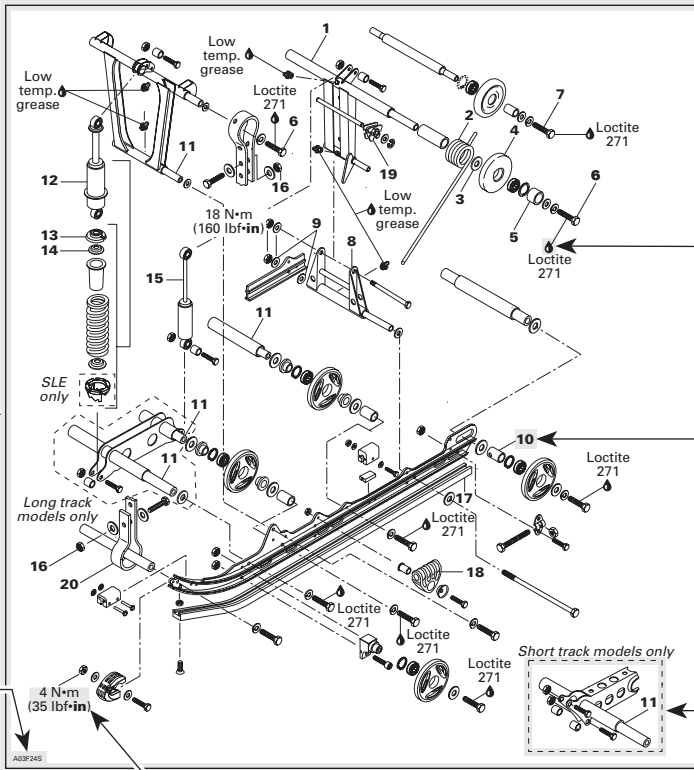
Dotted box contains parts of a particular model in this case the short track models only.

Page numbering system:
 07: REAR SUSPENSION section
 01: SUSPENSION SC-10 SPORT, TOURING AND MOUNTAIN subsection
 1: First page of this subsection

Section 07 REAR SUSPENSION
 Subsection 01 (SUSPENSION SC-10 SPORT, TOURING AND MOUNTAIN)

SUSPENSION SC-10 SPORT, TOURING AND MOUNTAIN

Grand Touring 500/580, Formula 500/583 and Summit 500



Exploded view assists you in identifying parts and related positions.

Illustration number for publishing process.

Document number for publishing process.

Tightening torque nearby fastener. In this case, nut must be torqued to 4 N•m or 35 lbf•in.

CAUTION: Pay attention to torque specifications. Some of these are in lbf•in instead of lbf•ft. Use appropriate torque wrench.

TYPICAL PAGE

Section 05 TRANSMISSION
Subsection 03 (DRIVEN PULLEY)

Turn puller handle and sliding half at once to extract the bushing.

IMPORTANT: Large bushing retaining screws and washers must be removed before small bushing installation.
Coat bushing outside diameter with Loctite 609 (P/N 413 703 100).
Install bushing as following photo.

ASSEMBLY
Came Slider Shoe
 When replacing slider shoes no. 4, always install a new set (3 shoes) to maintain equal pressure on the cam.
 Assemble driven pulley components by reversing the disassembly procedure.

Cam
 Coat cam no. 18 interior with anti-seize lubricant.

MMR2000_042_00-02A.FM

INSTALLATION
Countershaft
CAUTION: Always apply anti-seize lubricant (P/N 413 701 000) on the countershaft before final pulley installation.
A-Series and B-Series Only
 Should installation procedure be required, refer to BRAKE then look for Brake Disc and Countershaft Bearing Adjustment.
 Reinstall the pulley on the countershaft by reversing the removal procedure.
All Models
 Check end play of driven pulley on countershaft by pushing pulley towards outer housing so that the inner shims (P/N 504 108 200) contact it. Measure end play at the mounting screw end between shim(s) and pulley. See illustration.

ADJUSTMENT
 Refer to PULLEY DISTANCE AND ALIGNMENT to adjust pulley distance. Adjust drive belt height between pulley halves to obtain specified belt deflection.

TYPICAL — TOP VIEW
 1. Shim (P/N 504 108 200) (as required)
 2. Contact
 A. 0.2 to 1 mm (0 to 3/64 in)

Torque retaining screw no. 13 to 25 N•m (18 lbf•ft).

A01A2BS

05-03-5

Illustration always follows text to which it pertains.

Subtitle indicates a particular procedure for the named part.

Bold face number following part name refers to exploded view at beginning of subsection.

Title indicates main procedure to be carried-out.

Italic bold face type setting indicates a particular procedure concerning a model.

Italic bold face setting in this case indicates that particular procedure for A and B-Series is finished, so from this point, all models are concerned.

“TYPICAL” caption indicates a general view which does not represent full detail.
 “TOP VIEW” caption helps you in understanding illustration.

Call-outs for above illustration.

Reference to look up a certain section and subsection. In this case it concerns pulleys adjustment.

INTRODUCTION

GENERAL INFORMATION

The information and component/system descriptions contained in this manual are correct at time of publication. Bombardier Inc. however, maintains a policy of continuous improvement of its products without imposing upon itself any obligation to install them on products previously manufactured.

Due to late changes, it may have some differences between the manufactured product and the description and/or specifications in this document.

Bombardier Inc. reserves the right at any time to discontinue or change specifications, designs, features, models or equipment without incurring obligation.

ILLUSTRATIONS AND PROCEDURES

Illustrations and photos show the typical construction of the different assemblies and, in all cases, may not reproduce the full detail or exact shape of the parts shown. However, they represent parts which have the same or a similar function.

CAUTION: Most components of those vehicles are built with parts dimensioned in the metric system. Most fasteners are metric and must not be replaced by customary fasteners or vice-versa. Mismatched or incorrect fasteners could cause damage to the vehicle or possible personal injury.

As many of the procedures in this manual are interrelated, we suggest, that before undertaking any task, you read and thoroughly understand the entire section or subsection in which the procedure is contained.

A number of procedures throughout the book require the use of special tools. Before commencing any procedure, be sure that you have on hand all the tools required, or approved equivalents.

The use of RIGHT and LEFT indications in the text, always refers to driving position (when sitting on vehicle).



TYPICAL

1. Left
2. Right

SELF-LOCKING FASTENERS PROCEDURE

The following describes the most common application procedures when working with self-locking fasteners.

Use a metal brush or a tap to clean the hole properly then use a solvent (Methyl-Chloride), let act during 30 minutes and wipe off. The solvent utilization is to ensure the adhesive works properly.

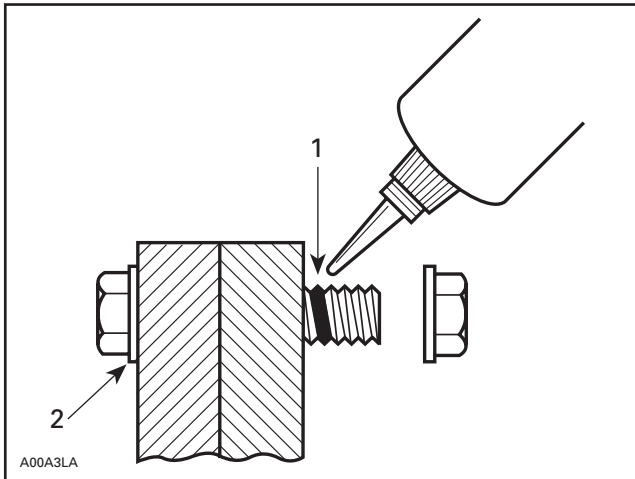
LOCTITE APPLICATION PROCEDURE

The following describes the most common application procedures when working with Loctite products.

NOTE: Always use proper strength Loctite product as recommended in this *Shop Manual*.

THREADLOCKER

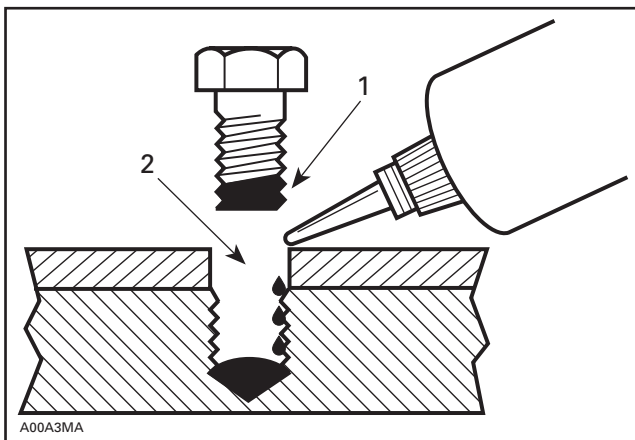
Uncovered Holes (bolts and nuts)



1. Apply here
2. Do not apply

1. Clean threads (bolt and nut) with solvent.
2. Apply Loctite Primer N (P/N 293 800 041) on threads and allow to dry.
3. Choose proper strength Loctite threadlocker.
4. Fit bolt in the hole.
5. Apply a few drops of threadlocker at proposed tightened nut engagement area.
6. Position nut and tighten as required.

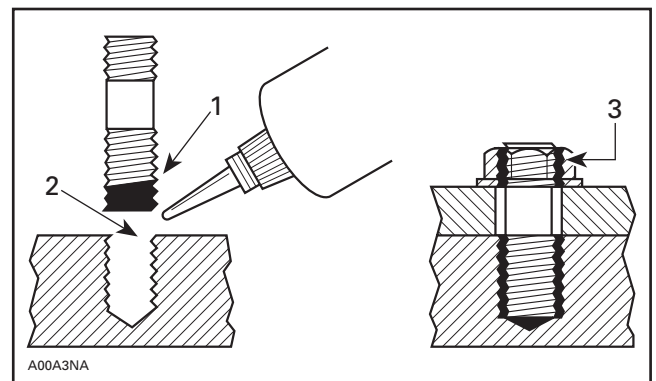
Blind Holes



1. On threads
2. On threads and at the bottom of hole

1. Clean threads (bolt and hole) with solvent.
2. Apply Loctite Primer N (P/N 293 800 041) on threads (bolt and nut) and allow to dry for 30 seconds.
3. Choose proper strength Loctite threadlocker.
4. Apply several drops along the threaded hole and at the bottom of the hole.
5. Apply several drops on bolt threads.
6. Tighten as required.

Stud in Blind Holes

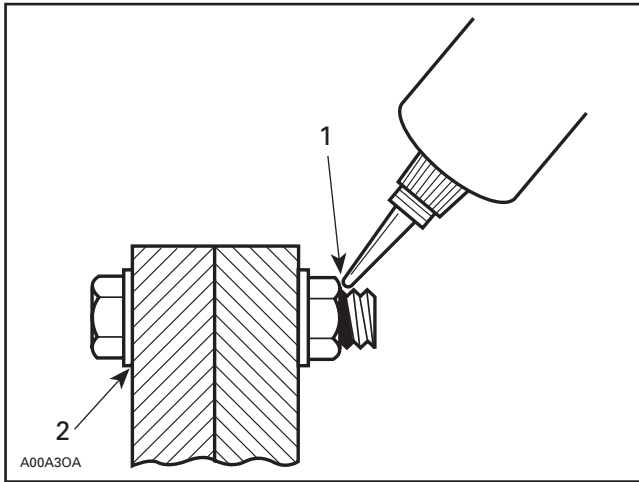


1. On threads
2. On threads and in the hole
3. Onto nut threads

1. Clean threads (stud and hole) with solvent.
2. Apply Loctite Primer N (P/N 293 800 041) on threads and allow to dry.
3. Put several drops of proper strength Loctite threadlocker on female threads and in hole.
4. Apply several drops of proper strength Loctite on stud threads.
5. Install stud.
6. Install cover, etc.
7. Apply drops of proper strength Loctite on uncovered threads.
8. Tighten nuts as required.

INTRODUCTION

Preassembled Parts

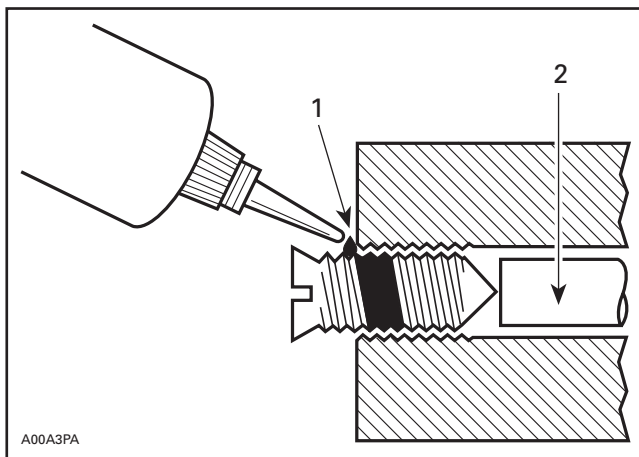


1. Apply here
2. Do not apply

1. Clean bolts and nuts with solvent.
2. Assemble components.
3. Tighten nuts.
4. Apply drops of proper strength Loctite on bolt/nut contact surfaces.
5. Avoid touching metal with tip of flask.

NOTE: For preventive maintenance on existing equipment, retighten nuts and apply proper strength Loctite on bolt/nut contact surfaces.

Adjusting Screw



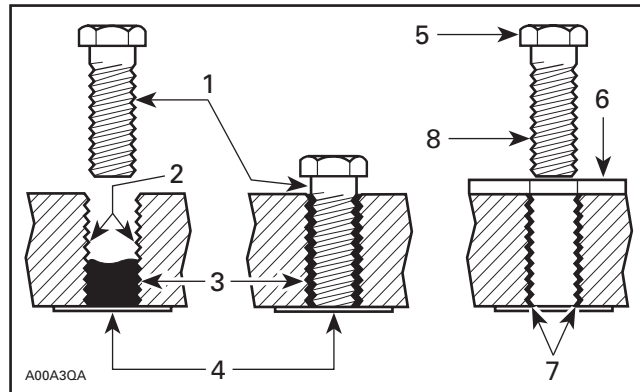
1. Apply here
2. Plunger

1. Adjust screw to proper setting.
2. Apply drops of proper strength Loctite threadlocker on screw/body contact surfaces.
3. Avoid touching metal with tip of flask.

NOTE: If it is difficult to readjust, heat screw with a soldering iron (232°C (450°F)).

STRIPPED THREAD REPAIR

Stripped Threads



1. Release agent
2. Stripped threads
3. Form-A-Thread
4. Tape
5. Cleaned bolt
6. Plate
7. New threads
8. Threadlocker

Standard Thread Repair

1. Follow instructions on Loctite FORM-A-THREAD 81668 package.
2. If a plate is used to align bolt:
 - a. Apply release agent on mating surfaces.
 - b. Put waxed paper or similar film on the surfaces.
3. Twist bolt when inserting it to improve thread conformation.

NOTE: NOT intended for engine stud repairs.

Repair of Small Holes/Fine Threads

Option 1: Enlarge damaged hole, then follow **Standard Thread Repair** procedure.

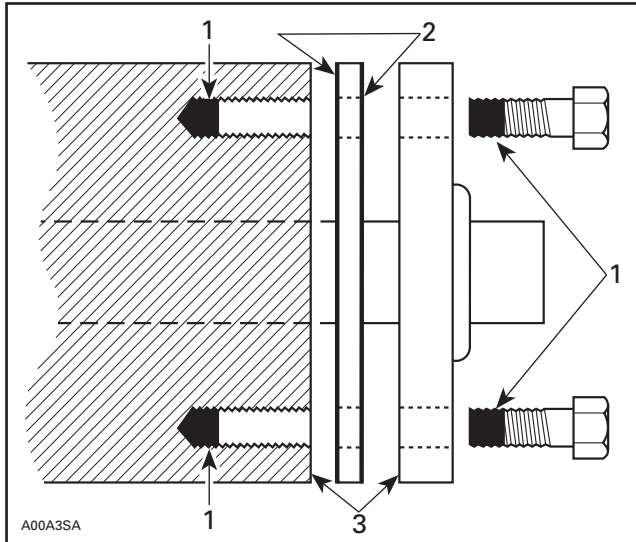
Option 2: Apply FORM-A-THREAD on the screw and insert in damaged hole.

Permanent Stud Installation (light duty)

1. Use a stud or thread on desired length.
2. DO NOT apply release agent on stud.
3. Do a **Standard Thread Repair**.
4. Allow to cure for 30 minutes.
5. Assemble.

GASKET COMPOUND

All Parts



1. Proper strength Loctite
2. Loctite Primer N (P/N 413 708 100) and Gasket Eliminator 515 (P/N 413 702 700) on both sides of gasket
3. Loctite Primer N only

1. Remove old gasket and other contaminants with Loctite Chisel remover (P/N 413 708 500). Use a mechanical mean if necessary.

NOTE: Avoid grinding.

2. Clean both mating surfaces with solvent.
3. Spray Loctite Primer N on both mating surfaces and on both sides of gasket. Allow to dry 1 or 2 minutes.
4. Apply GASKET ELIMINATOR 515 (P/N 413 702 700) on both sides of gasket, using a clean applicator.
5. Place gasket on mating surfaces and assemble immediately.

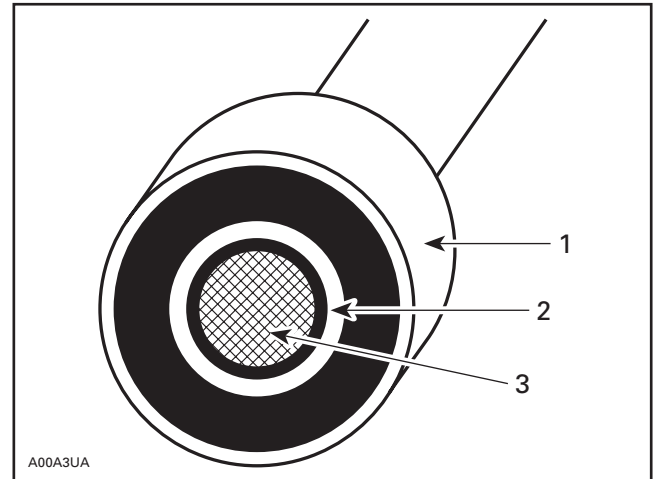
NOTE: If the cover is bolted to blind holes (above), apply proper strength Loctite in the hole and on threads. Tighten.

If holes are sunken, apply proper strength Loctite on bolt threads.

6. Tighten as usual.

MOUNTING ON SHAFT

Mounting with a Press



1. Bearing
2. Proper strength Loctite
3. Shaft

Standard

1. Clean shaft external part and element internal part.
2. Apply a strip of proper strength Loctite on shaft circumference at insert or engagement point.

NOTE: Retaining compound is always forced out when applied on shaft.

3. DO NOT use anti-seize Loctite or any similar product.
4. No curing period is required.

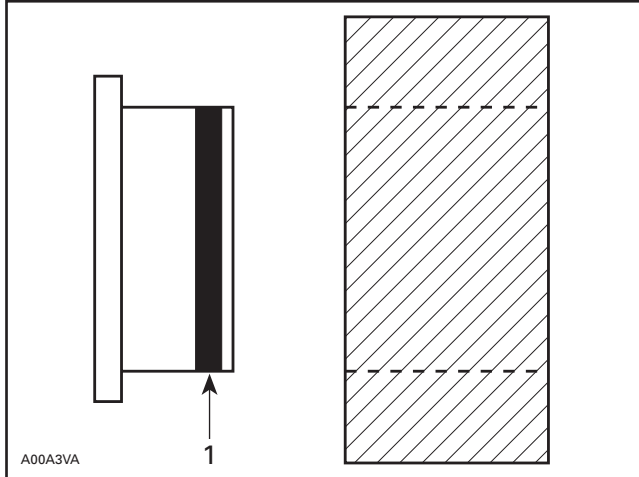
Mounting in Tandem

1. Apply retaining compound on internal element bore.
2. Continue to assemble as shown above.

INTRODUCTION

CASE-IN COMPONENTS

Metallic Gaskets



1. *Proper strength Loctite*

1. Clean inner housing diameter and outer gasket diameter.
2. Spray housing and gasket with Loctite Primer N (P/N 293 800 041).
3. Apply a strip of proper strength Loctite on leading edge of outer metallic gasket diameter.

NOTE: Any Loctite product can be used here. A low strength liquid is recommended as normal strength and gap are required.

4. Install according to standard procedure.
5. Wipe off surplus.
6. Allow it to cure for 30 minutes.

NOTE: Normally used on worn-out housings to prevent leaking or sliding.

It is generally not necessary to remove gasket compound applied on outer gasket diameter.

TIGHTENING TORQUES

Tighten fasteners to torque mentioned in exploded views and text. When they are not specified refer to following table. Bold face size (e.g. **M4**) indicates nominal value (mean value).

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•in
2	M4	18
3	M4	27
4	M5	35
8	M6	71
9	M6	80
10	M6	89
11	M6	97
12	M6	106

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
21	M8	15
22	M8	16
23	M8	17
24	M8	18
25	M8	18
43	M10	32
44	M10	32
45	M10	33
46	M10	34
47	M10	35
48	M10	35
49	M10	36
50	M10	37
51	M10	38
52	M10	38
53	M10	39
76	M12	56
77	M12	57
78	M12	58
79	M12	58

N•m	FASTENER SIZE (8.8 GRADE)	Lbf•ft
80	M12	59
81	M12	60
82	M12	60
83	M12	61
84	M12	62
121	M14	89
122	M14	90
123	M14	91
124	M14	91
125	M14	92
126	M14	93
127	M14	94
128	M14	94
129	M14	95
130	M14	96
131	M14	97
132	M14	97
133	M14	98
134	M14	99
135	M14	100
136	M14	100
137	M14	101
138	M14	102
139	M14	103
140	M14	103
141	M14	104
142	M14	105
143	M14	105
144	M14	106
145	M14	107
146	M14	108
147	M14	108
148	M14	109
149	M14	110
150	M14	111

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