

SUZUKI 4-STROKE OUTBOARD

<Maintenance Manual>

THE
ULTIMATE
OUTBOARD MOTOR

Carburetor Inspection / Adjustment

- Initial 20 hours or 1 month
- Every 100 hours or 12 months

Carburetor Data

	Model	Year Model	Type	I.D. Mark	Pilot screw (Turns open)	Float Height (mm)	Idle Speed (r/min.)	
1	DF2.5	'06~'13	LMJ-26A	LMJ-26A	Pre-set (2±1/2)	10±2	I:1900±100 T:1500	
		'14~	LMJ-57	LMJ-57	2-5/8±3/4	14.3±2		
		'14~(US)	LMJ-48	LMJ-48A	2-3/4±1/2	15.4±2		
2	DF4	'02~'04	BV22-14	91J00	2-1/2±1/4	14±1	I:1300±50 T:1150	
		'05~'11	BC19-13.5	91J8	Pre-set	10±1		
		'12~'15	LMJ-51	LMJ-51	Pre-set	—		
3	DF5	'02~'04	BV22-14	91J10	2-1/2±1/4	14±1	I:1300±50 T:1150	
		'05~'11	BC19-13.5	91J90	Pre-set	10±1		
		'12~'15	LMJ-50	LMJ-50	Pre-set	—		
4	DF6	'02~'04	BV22-16	91J20	2-1/2±1/4	14±1	I:1300±50 T:1250	
		'05~'11	BC21-15	91JB	Pre-set	10±1		
		'12~'15	LMJ-49	LMJ-49	Pre-set	—		
5	DF4A	'17~	LMJ-60	60	Pre-set (2-3/8±3/4)	—	I:1300±50 T:1200	
6	DF5A	'17~	LMJ-59	59	Pre-set (2-3/4±3/4)	—		
7	DF6A	'17~	LMJ-58	58	Pre-set (2-7/8±3/4)	—		
8	DF8A	'10~	BCM23-12	99J0A	Pre-set (2±1/2)	14±2	I:950±50 T:850-950	
				99J1A				
9	DF9.9A	'10~	BCM23-18	99J2A	Pre-set (2±1/2)	14±2	I:950±50 T:850-950	
				99J3A				
10	DF9.9	'98~'04	B22TI-15	93E02	1-1/2±1/4	17.6±1	T:1000±50	
				94J2				Pre-set (1-7/8±1/2)
				94J3				
11	DF15	'98~'04	B26TI-20	93E11	1±1/4	17.6±1	T:1000±50	
				94J6				Pre-set (2-7/8±1/2)
				94J7				
12	DF25 (V2)	'06~'14	BCMII36-26.5	95J2A	Pre-set (2-3/4±1/2)	13.5±2	I:1000±50 T:900-1000	
				95J3A				
13	DF25 (3Cyl.)	'00~'06	B25TI-20	89J00	Pre-set	14.6±1	I:900±50 T:850	
				89J40				1-1/2±1/4
14	DF30	'00~'10	B25TI-22	89J10	Pre-set	14.6±1	I:900±50 T:850	
				89J50				1-1/2±1/4


I : Idle Speed
T:Trolling Speed

Carburetor Jet Chart

	Model	Year Model	Carburetor P/No.	Type	Altitude Feet (Meters)			
					0-5,000 (0-1,500)		Over 5,000 (1,500)	
					Main Jet Size	Pilot Jet Size	Main Jet Size	Pilot Jet Size
1	DF2.5	2006	13200-97J40	Walbro	#70 (09491-70018)	#32 (09492-32011)	#68 (09491-68006)	#30 (09492-30018)
		2007	13200-97J40	Walbro	#64 (09491-64003)	#32 (09492-32011)	#62 (09491-62009)	#30 (09492-30018)
		2008-2009	13200-97J40	Walbro	#64 (09491-64003)	#32 (09492-32011)	#62 (09491-62009)	#30 (09492-30018)
		2009-2013	13200-97J80	Walbro	#62 (09491-62009)	#34 (09492-34004)	#60 (09491-60014)	#32 (09492-32011)
		2014~	13200-97J80	Walbro	#62 (09491-62009)	#35 (09492-35035)	#60 (09491-60014)	#33 (09492-33001)
		2014~(US)	13200-97J50	Walbro	#62 (09491-62009)	#34 (09492-34004)	#60 (09491-60014)	#32 (09492-32011)
2	DF4	2002-2004	13200-91J30	Mikuni	#77.5 (09491-77008)	#35 (09492-35026)	-	-
		2005-2011	13200-91J81	Keihin	#70 (09491-70016)	#35 (09492-35029)	Replace carburetor assy. 13200-91JC0	
		2012-2015	13200-91JQ0	Walbro	#52 (09491-52L01)	#34 (09492-34004)	#50 (09491-50L01)	#32 (09492-32011)
3	DF5	2002-2004	13200-91J10	Mikuni	#77.5 (09491-77008)	#35 (09492-35026)	-	-
		2005-2011	13200-91J91	Keihin	#70 (09491-70016)	#35 (09492-35029)	-	
		2012-2015	13200-91JR0	Walbro	#64 (09491-64003)	#32 (09492-32011)	#62 (09491-62009)	#30 (09492-30018)
4	DF6	2002-2004	13200-91J50	Mikuni	#85 (09491-85013)	#35 (09492-35028)	-	-
		2005-2011	13200-91J70 13200-91JB1	Keihin	#78 (09491-78010)	#38 (09492-38008)	-	-
		2012-2015	13200-91JS0	Walbro	#68 (09491-68006)	#36 (09492-36L01)	#66 (09491-66005)	#34 (09492-34004)
5	DF4A	2017~	13200-97L00	Walbro	#54 (09491-54L01)	#34 (09492-34004)	#52 (09491-52L01)	#32 (09492-32011)
6	DF5A	2017~	13200-97L10	Walbro	#66 (09491-66005)	#37 (09492-37005)	#64 (09491-64003)	#35 (09492-35035)
7	DF6A	2017~	13200-97L20	Walbro	#72 (09491-72015)	#41 (09492-41004)	#70 (09491-70018)	#39 (09492-39003)

	Model	Year Model	Carburetor P/No.	Type	Altitude Feet (Meters)			
					0-5,000 (0-1,500)		Over 5,000 (1,500)	
					Main Jet Size	Pilot Jet Size	Main Jet Size	Pilot Jet Size
8	DF8A	2010~	Manual starter: 13200-99J0 Electric starter: 13200-99J10	Keihin	#70 (09491-70020)	#38 (09492-38011)	#68 (09491-68008)	#35 (09492-35033)
9	DF9.9A	2010~	Manual starter: 13200-99J20 Electric starter: 13200-99J30	Keihin	#82 (09491-82013)	#38 (09492-38011)	#80 (09491-80017)	#35 (09492-35033)
10	DF9.9	2005-2009	13200-94J20 13200-94J30	Keihin	#70 (09491-70017)	#38 (09492-38009)	#68	#35
11	DF15	2005-2012	13200-94J60 13200-94J70	Keihin	#115 (09491-23029)	#40 (09492-40029)	#110	#38
12	DF25 (V2)	2006-2014	Manual starter: 13200-95J30 Electric starter: 13200-95J20	Keihin	#132 (09491-26020)	#48 (09492-48016)	#130	#45
		2006-2014 (US)	Manual starter: 13200-95J10 Electric starter: 13200-95J00		#135 (09491-27020)	#48 (09492-48016)	#130	#45
13	DF25 (3cyl.)	2000-2006	Top: 13201-89J00/40 2nd: 13202-89J00/40 3rd: 13203-89J00/40	Mikuni	#135 (09491-27019)	#38.8 (09492-38006)	High Altitude Kit: 13309-89J00	
14	DF30	2000-2010	Top: 13201-89J50 2nd: 13202-89J50 3rd: 13203-89J50	Mikuni	#110 (09493-22011)	#40 (09492-40011)	High Altitude Kit: 13309-89J10	

Oil Data

Model	Year Model	Engine oil amounts (L) SAE:10W-40 API:SG or higher *1		Engine oil drain plug	Oil filter			Oil filter wrench (Special tool)	Gear oil amounts (ml) SAE90 (Single grade) API:GL5
		Oil change only	Oil filter change		Tightening torque	Part No.	Tightening torque		
DF2.5	'06~	0.38	—	10N-m	—	—	—	—	60
DF4/5/6	'02~'15	0.7	—	10N-m	—	—	—	—	190
DF4A/5A/6A	'17~	0.7	0.7	13N-m	16510-16H11	—	—	—	190
DF8A/9.9A	'06~	0.8	0.9	13N-m					250
DF9.9/15	'98~'12	1.0	1.1	13N-m	16510-45H10	—	—	—	170
DF9.9B/15A/20A	'13~	1.0	1.1	13N-m					250
DF25(V2)	'06~'14	1.5	1.8	13N-m					420
DF25/30	'06~'10	3.0	3.2	13N-m					230
DF25A/30A	'15~	1.5	1.7	13N-m					330
DF40/50	'99~'10	2.2	2.4	13N-m	16510-87J01				610
DF40A/50A/60A	'10~	2.7	2.9	13N-m					610
DF50AV/60AV	'14~	2.7	2.9	13N-m		14N-m			1,050
DF60/70	'98~'09	4.5	4.8	13N-m					1,050
DF70A/80A/90A	'09~	4.0	4.3	13N-m					850
DF100B	'18~	4.0	4.3	13N-m	16510-61A31				850
DF90/100/115	'01~'12	5.5	5.7	13N-m					1,050
DF140	'02~'12	5.5	5.7	13N-m	16510-92J00	13.5N-m	66.5mm	09915-47341	1,050
DF100A/115A/140A	'13~	5.5	5.7	13N-m	16510-61A31				1,050
DF150/175	'06~	8.0	8.5	13N-m					1,100
DF150TG/175TG	'14~'16	8.0	8.5	13N-m					1,100
DF150A/175A	'19~	8.0	8.5	13N-m					1,100
DF150AP/175AP	'17~	8.0	8.5	13N-m					1,100
DF200A/200AP	'15~	8.0	8.5	13N-m	16510-96J10	14N-m			1,100
DF200/225/250	'04~	8.0	8.2	13N-m					1,100
DF300	'07~'11	8.0	8.2	13N-m					1,100
DF250AP/300AP	'12~	8.0	8.2	13N-m					1,100
DF300B	'20~	8.0	8.5	13N-m					3,200
DF325A/350A	'18~	8.0	8.5	13N-m					3,200

*1: At the time of engine overhaul, engine oil amounts are as follows.

DF2.5: 0.40L, DF4A/5A/6A : 0.73L, DF8A/9.9A : 0.95L

DF9.9B/15A/20A : 1.17L, DF25A/30A : 1.80L, DF40A/50A/60A : 3.10L

DF70A/80A/90A/100B : 4.70L, DF100A/115A/140A : 6.20L

DF150A/175A/200A/150AP/175AP/200AP : 9.20L

DF200/225/250, DF250AP/300AP : 9.00L, DF300B/325A/350A : 9.50L

Spark Plug Data

Model	Year Model	Part No.	Type	Q'ty	Gap (mm)	Thread Diameter	Plug Wrench	Tightening Torque
DF2.5	'06~	09482-00406	CR6HSA	1	0.6—0.7	10mm	16.0mm	11N·m
DF4/5/6	'02~'10	09482-00299	BPR6ES	1	0.7—0.8	14mm	20.7mm	28N·m
	'11~'15	09482-00L04	CPR6EA-9	1	0.8—0.9	10mm	16.0mm	11N·m
DF4A/5A/6A	'17~	09482-00L04	CPR6EA-9	1	0.8—0.9	10mm	16.0mm	11N·m
DF8A/9.9A	'06~	09482-00528	CR6E	2	0.7—0.8	10mm	16.0mm	11N·m
DF9.9/15	'98~'04	09482-00446	DCPR6E	2	0.8—0.9	12mm	16.0mm	17N·m
	'05~'10	09482-00427	BKR6E	2	0.7—0.8	14mm	16.0mm	27N·m
DF15	'11~'12	09482-00L04	CPR6EA-9	2	0.8—0.9	10mm	16.0mm	11N·m
DF9.9B/15A/20A	'13~'17	09482-00L04	CPR6EA-9	2	0.8—0.9	10mm	16.0mm	11N·m
	'18~	09482-00661	MR6K-9					
DF25(V2)	'06~'14	09482-00427	BKR6E	2	0.7—0.8	14mm	16.0mm	28N·m
DF25/30	'06~'10	09482-00446	DCPR6E	3	0.8—0.9	12mm	16.0mm	18N·m
DF25A/30A	'15~'18	09482-00L04	CPR6EA-9	3	0.8—0.9	10mm	16.0mm	11N·m
	'19~	09482-00661	MR6K-9					
DF40/50	'99~'10	09482-00446	DCPR6E	3	0.8—0.9	12mm	16.0mm	18N·m
DF40A/50A/60A	'10~	09482-00446	DCPR6E	3	0.8—0.9	12mm	16.0mm	17N·m
DF50AV/60AV	'14~	09482-00446	DCPR6E	3	0.8—0.9	12mm	16.0mm	17N·m
DF60/70	'98~'09	09482-00299	BPR6ES	4	0.7—0.8	14mm	20.7mm	28N·m
DF70A/80A/90A	'09~	09482-00446	DCPR6E	4	0.8—0.9	12mm	16.0mm	18N·m
DF100B	'18~							
DF90/100/115/140	'01~'12	09482-00427	BKR6E	4	0.7—0.8	14mm	16.0mm	28N·m
DF100A/115A/140A	'13~	09482-00427	BKR6E	4	0.7—0.8	14mm	16.0mm	28N·m
DF150/175	'06~	09482-00427	BKR6E	4	0.7—0.8	14mm	16.0mm	28N·m
DF150TG/175TG	'14~'16	09482-00427	BKR6E	4	0.7—0.8	14mm	16.0mm	27N·m
DF150A/175A	'19~							
DF150AP/175AP	'17~	09482-00649	LKR6E	4	0.8—0.9	12mm	16.0mm	17N·m
DF200A/200AP	'15~							
DF200/225/250	'04~	09482-00427	BKR6E	6	0.7—0.8	14mm	16.0mm	28N·m
DF300	'07~'11	09482-00427	BKR6E	6	0.7—0.8	14mm	16.0mm	28N·m
DF250AP/300AP	'12~	09482-00427	BKR6E	6	0.7—0.8	14mm	16.0mm	28N·m
DF300B	'20~	09482-00642	ILZKR7D8	6	0.7—0.8	12mm	16.0mm	17N·m
DF325A/350A	'18~							

Service Data

Model	Year Model	Tappet clearance (Valve lash) (Cold engine condition) (mm)		Fuel pressure (kPa)	Engine oil pressure (kPa)	Cylinder compression pressure (kPa)	Thermostat	
		IN	EX				Part No.	Operating temperature
DF2.5	'06~	0.13 - 0.17	0.13 - 0.17	-	-	960 - 1400	17670-91J02	48-52°C
DF4/5/6	'02~'04	0.03 - 0.07	0.03 - 0.07	-	-	530 - 695	17670-91J02	48-52°C
	'05~'10						17670-91J11	48-52°C
	'11~'15						17670-91J22	40 - 44°C
DF4A/5A/6A	'17~	0.13 - 0.17	0.13 - 0.17	-	100 - 500	400 - 700	17670-91J02	48-52°C
DF8A/9.9A	'06~	0.16 - 0.20	0.16 - 0.20	-	240 - 400	300 - 900 (MZ) 1000 - 1600 (ME)	17670-94J02	58-62°C
DF9.9/15	'00~'04	0.08 - 0.12	0.13 - 0.17	-	200 - 500	550 - 850 (MZ) 820 - 1230 (ME)	17670-94404	58-62°C
	'05~'12	0.18 - 0.22	0.18 - 0.22				17670-94J02	
DF9.9B/15A/20A	'13~	0.18 - 0.22	0.18 - 0.22	300	200 - 500	350 - 900	17670-91J02	48-52°C
DF25(V2)	'06~'14	0.03 - 0.07	0.03 - 0.07	-	200 - 300	500 - 700 (MZ) 1000 - 1300 (ME)	17670-94J02	58-62°C
DF25/30	'06~'10	0.13 - 0.17	0.13 - 0.17	-	392 - 490	1000 - 1400	17670-93955	58-62°C
DF25A/30A	'15~	0.18 - 0.22	0.20 - 0.24	300	200 - 500	500 - 1000 (MZ) 500 - 1800 (ME)	17670-94J02	58-62°C
DF40/50	'00~'10	0.18 - 0.22	0.18 - 0.22	235	353 - 431	1176 - 1765	17670-94404	58-62°C
DF40A/50A/60A	'10~	0.18 - 0.22	0.28 - 0.32	295	200 - 400	1200 - 1800	17670-93955	58-62°C
DF50AV/60AV	'14~							
DF60/70	'00~'09	0.11 - 0.15	0.13 - 0.17	250	353 - 431	980 - 1520	17670-94404	58-62°C
DF70A/80A/90A	'09~	0.23 - 0.27	0.30 - 0.34	255	400 - 600	1200 - 1800	17670-90J01	58-62°C
DF100B	'18~							
DF90/100/115	'01~'12	0.23 - 0.27	0.23 - 0.27	235	539 - 588	1300 - 1700	17670-90J01	58-62°C
DF140	'02~'12				440 - 490	1200 - 1600		
DF100A/115A/140A	'13~	0.23 - 0.27	0.23 - 0.27	295	410 - 490	1000 - 1600	17670-90J21	48-52°C
DF150/175	'06~	0.23 - 0.27	0.30 - 0.34	255	400 - 600	1100 - 1700	17670-90J21	58-62°C
DF150TG/175TG	'14~'16	0.23 - 0.27	0.30 - 0.34	255	400 - 600	1100 - 1700	17670-90J21	48-52°C
DF150A/175A	'19~	0.23 - 0.27	0.30 - 0.34	255	400 - 600	1100 - 1700	17670-90J21	48-52°C
DF150AP/175AP	'17~							
DF200A/200AP	'15~	0.23 - 0.27	0.33 - 0.37	255	400 - 600	1100 - 1700	17670-90J01	58-62°C
DF200/225/250	'04~							
DF300	'07~'11	0.23 - 0.27	0.33 - 0.37	255	400 - 600	1100 - 1500	17670-90J01	58-62°C
DF250AP/300AP	'12~	0.23 - 0.27	0.33 - 0.37	255	400 - 600	880 - 1500	17670-90J21	48-52°C
DF300B/325A	'20~	0.23 - 0.27	0.33 - 0.37	295	500 - 700	570 - 950	17670-98L20	58-62°C
DF350A	'18					700 - 1160	17670-98L00	53-57°C
	'19~					17670-98L20	58-62°C	

MZ : Manual Start ME : Electric Start

Standard values (Reference)

Item	Unit	DF9.9B/15A/20A	DF25A/30A	DF40A/50A/60A/ 50AV/60AV	DF70A/80A/90A/ 100B
ENGINE SPEED	rpm	800~900	800~900	750~850	650~750
IGNITION TIMING	°	ATDC3~BTDC3	ATDC7~BTDC7	ATDC2~BTDC12	ATDC3~BTDC3
MANIFOLD ABSOLUTE PRESSURE	mmHg	315~435	263~338	195~270	210~285
	kPa	42~58	35~45	26~36	28~38
	inHg	12.4~17.1	10.3~13.3	7.7~10.6	8.3~11.2
CYLINDER TEMPERATURE	°C	50~60	55~65	55~65	58~68
	°F	122~140	131~149	131~149	136~154
BATTERY VOLTAGE	V	MZ:13.0~15.7 ME:12.2~14.2	13.0~15.2	13.0~15.2	13.0~15.2
FUEL INJ. PULSE WIDTH	us	2300~3300	2200~3200	2400~3400	2800~3800
INJECTED FUEL AMOUNT	mcc	5~7	5~7	6~8	8~12
HIGH FUEL PUMP DUTY	%	51~61	50~60	62~72	46~56
IAC VALVE DUTY	%	10~40	10~25	9~15	26~46

Item	Unit	DF100A/115A /140A	DF150T/175T	DF150A/175A	DF150AP/175AP/ 200A/200AP
ENGINE SPEED	rpm	650~750	600~700	600~700	600~700
IGNITION TIMING	°	BTDC3~BTDC17	BTDC2~BTDC8	ATDC6~BTDC6	ATDC6~BTDC6
MANIFOLD ABSOLUTE PRESSURE	mmHg	210~285	203~278	187~263(150A) 225~300(175A)	263~338
	kPa	28~38	27~37	25~35(150A) 30~40(175A)	35~45
	inHg	8.3~11.2	8.0~10.9	7.3~10.3(150A) 8.8~11.8(175A)	10.3~13.3
CYLINDER TEMPERATURE	°C	51~61	55~65	48~58	48~58
	°F	124~142	131~149	118~136	118~136
BATTERY VOLTAGE	V	13.0~15.2	13.0~15.2	13.0~15.2	13.0~15.2
FUEL INJ. PULSE WIDTH	us	2800~3800	2400~3400	2200~3200(150A) 2100~3100(175A)	2100~3100
INJECTED FUEL AMOUNT	mcc	10~14	12~18	12~18(150A) 13~19(175A)	13~19
HIGH FUEL PUMP DUTY	%	28~38	41~51	40~50	40~50
IAC VALVE DUTY	%	32~43	10~20	5~15(150A) 13~23(175A)	10~20 13~23 (200A)
EX-MANI TEMPERATURE	°C	30~40	40~50	38~48	38~48
	°F	86~104	104~122	100~118	100~118

Item	Unit	DF200/225/250	DF250AP/300AP	DF300B/325A/350A
ENGINE SPEED	rpm	600~700	600~700	550~650
IGNITION TIMING	°	ATDC3~BTDC3	ATDC3~BTDC3	ATDC10~TOP
MANIFOLD ABSOLUTE PRESSURE	mmHg	203~278	248~323	323~398
	kPa	27~37	33~43	43~53
	inHg	8.0~10.9	9.7~12.7	12.7~15.7
CYLINDER TEMPERATURE	°C	55~65	47~57	58~68
	°F	131~149	117~135	136~154
BATTERY VOLTAGE	V	13.0~15.2	13.0~15.2	13.0~15.2
FUEL INJ. PULSE WIDTH	us	2900~3900	2500~3500	1500~2500
INJECTED FUEL AMOUNT	mcc	13~19	14~20	15~21
HIGH FUEL PUMP DUTY	%	39~49	40~50	36~46
IAC VALVE DUTY	%	30~45	50~70	51~71 50~70(350A)
EX-MANI TEMPERATURE (STBD)	°C	50~60	45~55	40~50
	°F	122~140	113~131	104~122
EX-MANI TEMPERATURE (PORT)	°C	50~60	45~55	
	°F	122~140	113~131	
OIL TEMPERATURE	°C		43~57	
	°F		109~135	
OIL PRESSURE	kPa		150~250	
	psi		21.8~36.3	

Note :

- The values in the table show the standard values at the time of idle after warm-up.
- The battery voltage may be less than the range depending on a battery consumption level.
- Effective models are 2019 models and later.

Code for Self-Diagnostic System Operation

code	Failed item	Condition			
	Rectifier/Regulator (Over-charging)	<ul style="list-style-type: none"> Receiving 16 V or higher signal 			
	Shift position sensor	<ul style="list-style-type: none"> No signal Receiving an out of range "0.1 - 4.6 V" signal. [DF150/175, DF150AP/175AP/200AP, DF300B/325A/350A:0.2~4.8V], [DF150A/175A/200A:0.3~4.8V] [DF250AP/300AP:0.35~4.8V] 			
	Cylinder temp. sensor	<ul style="list-style-type: none"> No signal Receiving an out of range "-46 to +170 °C (-50.8 - +338.0 °F) (0.1 - 4.6V)" signal [DF9.9B/15A/20A, DF25A/30A:0.1~4.9V], [DF60/70:0.1~4.84V], [DF40/50('01~), DF60/70('01~), DF90/100/115/140:0.1~4.63V] 			
	Exhaust manifold temp. sensor (DF200/225/250, DF300, DF250AP/300AP, DF300B/325A/350A: STBD side)	<ul style="list-style-type: none"> No signal Receiving an out of range "-46 to +170 °C (-50.8 - +338.0 °F) (0.1 - 4.6V)" signal [DF40/50('01~), DF60/70('01~), DF90/100/115/140:0.1~4.63V] 			
	Exhaust manifold temp. sensor (PORT or STBD)	<ul style="list-style-type: none"> No signal Receiving an out of range "-46 to +170 °C (-50.8 - +338.0 °F) (0.1 - 4.6 V)" signal [DF200/225/250, DF300, DF250AP/300AP, DF300B/325A/350A:PORT side] 			
code	1-1	1-2	1-4	1-5	1-6
DF300B/325A/350A	●	●	●	●	●
DF250AP/300AP	●	●	●	●	●
DF300	●	●	●	●	●
DF200/225/250	●	●	●	●	●
DF150AP/175AP/200AP	●	●	●	●	
DF150A/175A/200A	●	●	●	●	
DF150T(Z)G/175T(Z)G	●	●	●	●	
DF150/175	●	●	●	●	
DF100A/115A/140A	●		●	●	
DF90/100/115/140	●		●	●	
DF70A/80A/90A/100B	●	▲ z '10	●	▲ z '10	
DF60/70	●		●	●	
DF40A/50A/60A	●		●	●	
DF40/50	●		●	●	
DF25A/30A	●		●		
DF9.9B/15A/20A	●		●		

code	Failed item	Condition		
	Throttle position sensor	<ul style="list-style-type: none"> Receiving an out of range "0.2 - 4.8 V" TPS main sensor signal. The addition of two output voltages of the main sensor and sub sensor makes outside the specified range. [DF150/175、DF250AP/300AP、DF300B/325A/350A: 0.35~4.8V]、[DF150AP/175AP/200AP:0.5~4.5V] 		
	Air intake system	<ul style="list-style-type: none"> During the ECM's receiving input of the complete close signal from the throttle position sensor, the engine operates at an abnormally high speed. (Criterion: 2,100 rpm minimum) [DF9.9B/15A/20A:2,000 rpm minimum]、[DF200/225/250、DF300:2,500 rpm minimum] 		
	CTP switch	<ul style="list-style-type: none"> Receiving "ON" signal when engine speed is 2500 r/min. or higher and intake manifold pressure is 319 mmHg or higher 		
	IAT sensor	<ul style="list-style-type: none"> No signal Receiving an out of range "-46 to +169 °C (-50.8 - +336.2 °F) (0.1 - 4.6V)" signal [DF9.9B/15A/20A、DF250A/30A:0.1~4.8V]、[DF60/70:0.1~4.88V]、[DF40/50('01~)、DF60/70('01~)、DF90/100/115/140:0.04~4.46V] 		
	CMP sensor #1	<ul style="list-style-type: none"> During four crankshaft rotations, the normal CMP sensor signal pattern is not received by the ECM. 		
code	2-1	2-2	2-3	2-4
DF300B/325A/350A	●	●	●	●
DF250AP/300AP	●	●	●	●
DF300	●	●	●	●
DF200/225/250	●	●	●	●
DF150AP/175AP/200AP	●	●	●	●
DF150A/175A/200A	●	●	●	●
DF150T(Z)G/175T(Z)G	●	●	●	●
DF150/175	●	●	●	●
DF100A/115A/140A	●	●	●	●
DF90/100/115/140			●	●
DF70A/80A/90A/100B	●	●		●
DF60/70			●	●
DF40A/50A/60A	●	●	●	●
DF40/50			●	●
DF25A/30A	●	●	●	●
DF9.9B/15A/20A	●	●	●	●

Code for Self-Diagnostic System Operation

	code	Failed item	Condition
	2 - 5	CMP sensor (VVT-STBD)	<ul style="list-style-type: none"> During two crankshaft rotation, 4 signals are not input to ECM. [DF200/225/250. DF300. DF250AP/300AP、DF300B/325A/350A:STBD side]
	2 - 6	CMP sensor #2 (VVT)	<ul style="list-style-type: none"> During two crankshaft rotation, 4 signals are not input to ECM. [DF200/225/250. DF300. DF250AP/300AP、DF300B/325A/350A:PORT side]
	3 - 1	IAC valve/By-pass air screw adjustment	<ul style="list-style-type: none"> IAC valve operates at 80% duty or higher when ECM receives fully closed position signal from throttle position sensor.
	3 - 2	MAP sensor 2 (Pressure detect passage)	<ul style="list-style-type: none"> Receiving unchanging signal regardless engine speed change. From TPS sensor, the full close signal is inputted, but from the MAP sensor, the signal voltage exceeds 2.0 V.
	3 - 3	Neutral switch	<ul style="list-style-type: none"> While the shift sensor outputs the forward or reverse signal, the ECM receives input of the neutral signal from the neutral switch.
DF300B/325A/350A	●	●	●
DF250AP/300AP	●	●	●
DF300	●	●	●
DF200/225/250	●	●	●
DF150AP/175AP/200AP		●	●
DF150A/175A/200A		●	●
DF150T(Z)/G/175T(Z)/G		▲ DF175	●
DF150/175		▲ DF175	●
DF100A/115A/140A			●
DF90/100/115/140			●
DF70A/80A/90A/100B			●
DF60/70			●
DF40A/50A/60A			●
DF40/50			●
DF25A/30A			●
DF9.9B/15A/20A			●
			▲ ~'10

code	Failed item	Condition		
	MAP sensor 1	<ul style="list-style-type: none"> No signal (With engine running) Receiving an out of range "37 – 860 mmHg (1.46 – 33.86 inHg) (0.5 – 4.84V)" signal (With engine running) 		
	Speed sensor	<ul style="list-style-type: none"> Receiving an out of range "0.2 – 4.8 V" signal. 		
	ECM and cam-shaft mismatch	<ul style="list-style-type: none"> There is discrepancy of signal between the model data of ECM and CMP sensor signal pattern. 		
	O2 Sensor	<ul style="list-style-type: none"> The compensation value of fuel injection amount is more than the predetermined value while the O2 feedback is executed. The compensation value of fuel injection amount is below the predetermined value while the O2 feedback is executed. 		
	Trim sensor	<ul style="list-style-type: none"> Receiving an out of range "0.2 – 4.8 V" signal. 		
code	3 - 4	3 - 5	3 - 6	3-7
DF300B/325A/350A	●	▲'20~		●
DF250AP/300AP	●	▲'18~	●	●
DF300	●	●		●
DF200/225/250	●			
DF150AP/175AP/200AP	●	▲'17~	●	●
DF150A/175A/200A	●		●	●
DF150T(Z)G/175T(Z)G	●			●
DF150/175	●			
DF100A/115A/140A	●		●	●
DF90/100/115/140	●			
DF70A/80A/90A/100B	●			●
DF60/70	●			
DF40A/50A/60A	●			●
DF40/50	●			
DF25A/30A	●			
DF9.9B/15A/20A	●			

Code for Self-Diagnostic System Operation

code	Failed item	Condition
DF300B/325A/350A	Model discrimination switch (Rotation select connector)	<ul style="list-style-type: none"> The diagnostic code for model discrimination is displayed when a failure (either open or short circuit) exists in No.2 terminal of the wiring harness / connector.
DF250AP/300AP	CKP sensor	<ul style="list-style-type: none"> During the rotation of the predetermined crankshaft angle, the normal CKP sensor signal pattern is not received by the ECM.
DF300	Fuel injector	<ul style="list-style-type: none"> No operation signal from the ECM [DF40/50 ('01~), DF60/70 ('01~)]
DF200/225/250	Oil pressure sensor	<ul style="list-style-type: none"> No signal. Receiving an out of range "0.2 - 4.8 V" signal.
DF150AP/175AP/200AP	Oil temperature sensor	<ul style="list-style-type: none"> No signal. Receiving an out of range "0.1 - 4.69 V" signal.
DF150A/175A/200A	VVT advance	<ul style="list-style-type: none"> There is a large difference between the target advance angle and the actual advance angle. [DF200/225/250, DF300, DF250AP/300AP, DF300B/325A/350A:STBD side]
DF150T(Z)G/175T(Z)G		
DF150/175		
DF100A/115A/140A		
DF90/100/115/140		
DF70A/80A/90A/100B		
DF60/70		
DF40A/50A/60A		
DF40/50		
DF25A/30A		
DF9.9B/15A/20A		

	Condition						
Failed item	<ul style="list-style-type: none"> There is a large difference between the target advance angle and the actual advance angle. [DF200/225/250、DF300、DF250AP/300AP、DF300B/325A/350A:PORT side] While the engine is stopped and the main switch is on, the ECM receives an "OFF" signal from the oil pressure switch. No signal Receiving an out of range "0.55 – 4.39 V" signal. OCV not operating. [DF200/225/250、DF300、DF250AP/300AP、DF300B/325A/350A:STBD side] OCV not operating. [DF200/225/250、DF300、DF250AP/300AP、DF300B/325A/350A:PORT side] No operation signal comes from the ECM. (Open or short in O2 sensor heater circuit) ECM electronic throttle control circuit failure 						
code	5-2	5-3	5-4	6-1	6-2	6-3	7-1
Failed item	VVT advance (PORT)	Oil pressure switch	Knock sensor	Oil control valve	Oil control valve (PORT)	O2 Sensor heater	ETV ECM
DF300B/325A/350A	●	●	●	●	●		●
DF250AP/300AP	●			●	●		●
DF300	●			●	●		●
DF200/225/250	●	●		●	●		
DF150AP/175AP/200AP		●	●	●		●	●
DF150A/175A/200A		●	●	●		●	
DF150T(Z)G/175T(Z)G		●		●			●
DF150/175	▲ DF175	●			●		
DF100A/115A/140A		●	▲ DF115/140			●	
DF90/100/115/140							
DF70A/80A/90A/100B		●					
DF60/70							
DF40A/50A/60A		●					
DF40/50							
DF25A/30A		●					
DF9.9B/15A/20A		●					

Code for Self-Diagnostic System Operation

	code	Failed item	Condition
	7-2	ETV Motor	<ul style="list-style-type: none"> Throttle valve actuator motor operation failure or its power supply system (throttle relay, etc.) failure. Motor connector open Motor power supply line open
	7-3	ETV	<ul style="list-style-type: none"> Throttle valve operation failure
	7-4	Sub BCM	<ul style="list-style-type: none"> Sub BCM communication error Low sub BCM source voltage (less than 6 V). Sub BCM failure
	7-5	DBW system	<ul style="list-style-type: none"> CAN communication error between BCM and ECM. LPS error (ECM received an input signal from each sensor which was outside the range of 4.5 - 5.5 V as total of main sensor and sub sensor output voltage). Low BCM source voltage (less than 6 V). BCM failure. ECM failure.
	8-1	ESA ECM	<ul style="list-style-type: none"> ECM electronic shift control circuit failure.
	8-2	ESA motor	<ul style="list-style-type: none"> Electronic shift motor failure. Motor connector open Motor power supply line open
DF300B/325A/350A	●	●	●
DF250AP/300AP	●	●	●
DF300	●	●	●
DF200/225/250			
DF150AP/175AP/200AP	●	●	●
DF150A/175A/200A			
DF150T(Z)G/175T(Z)G	●	●	●
DF150/175			
DF100A/115A/140A			
DF90/100/115/140			
DF70A/80A/90A/100B			
DF60/70			
DF40A/50A/60A			
DF40/50			
DF25A/30A			
DF9.9B/15A/20A			

code	Failed item	Condition
8-3	ESA	<ul style="list-style-type: none"> Response failure ECM has detected the target LPS output voltage signal, but no change occurs in the input signal voltage from shift position sensor.
9-1	Key-fob battery low	<ul style="list-style-type: none"> Key-fob battery voltage decreased.
9-2	Key-fob authentication error	<ul style="list-style-type: none"> Authentication error between key-fob and keyless unit occurred. Communication error between key-fob and keyless unit occurred.
9-3	Keyless control unit battery low	<ul style="list-style-type: none"> Keyless control unit power source voltage decreased.
9-4	Keyless system authentication error	<ul style="list-style-type: none"> ECM detected that its ID code does not correspond with the ID code registered in the keyless control unit.
9-5	Keyless system communication error	<ul style="list-style-type: none"> The ECM cannot receive CAN communication information from keyless control unit. (Faulty wire harness of keyless start system.)
9-6	Keyless system failure	<ul style="list-style-type: none"> There is an irregularity on the internal circuit of the keyless control unit.
DF300B/325A/350A	●	▲Keyless start system
DF250AP/300AP	●	▲Keyless start system
DF300	●	
DF200/225/250		
DF150AP/175AP/200AP	●	▲Keyless start system
DF150A/175A/200A		▲Keyless start system
DF150T(Z)G/175T(Z)G	●	
DF150/175		
DF100A/115A/140A		▲Keyless start system
DF90/100/115/140		
DF70A/80A/90A/100B		▲Keyless start system
DF60/70		
DF40A/50A/60A		
DF40/50		
DF25A/30A		
DF9.9B/15A/20A		

Idle Speed Inspection / Adjustment (Electric Fuel Injection model)

- Initial 20 hours
- Every 200 hours or 12 months
- Not necessary to adjust the idle speed on DF40A/50A/60A ('10~'14), DF70A/80A/90A/100B, DF100A/115A/140A ('13~'14), DF150G/175G, DF150AP/175AP/200AP, DF300, DF250AP/300AP, DF300B/325A/350A

NOTE:

Check and/or adjust the idle speed after the engine has been warmed up and the engine speed has stabilized.

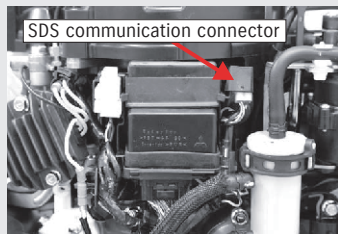
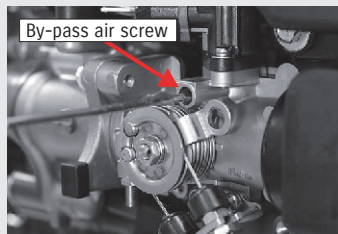
DF9.9B/15A/20A

[Idle speed adjustment]

Idle speed (in neutral) 800-900 r/min.

Adjustment:

1. Shift into Neutral and close the throttle fully.
2. To set the IAC valve duty in 10% constantly (fixed mode), raise engine speed above 1100 r/min. by turning the by-pass air screw and hold the engine speed for 10 seconds. The caution lamp will flash and notify you that the IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 850 ± 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.
5. Return the throttle to fully close and check engine speed.



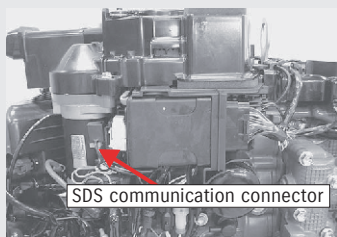
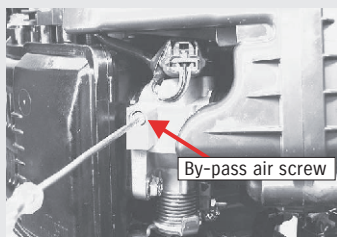
DF25A/30A

[Idle speed adjustment]

Idle speed (in neutral) 800-900 r/min.

Adjustment:

1. Shift into Neutral and close the throttle fully.
2. To set the IAC valve duty in 10% constantly (fixed mode), raise engine speed above 1100 r/min. by turning the by-pass air screw and hold the engine speed for 10 seconds.
The caution lamp will flash and notify you that the IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 850 ± 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.
5. Return the throttle to fully close and check engine speed.



Detach the by-pass air screw from the throttle body if the system doesn't shift into the IAC valve duty fixed mode even loosening the screw. Re-install the by-pass air screw on the throttle body when the system is shifted into the IAC valve duty fixed mode. Then adjust the by-pass air screw.

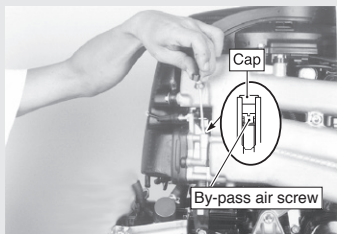
DF40/50 ('08~)

[Idle speed adjustment]

Idle speed (in neutral) 800-900 r/min.

Adjustment:

1. Shift into Neutral and close the throttle fully.
2. To set the IAC valve duty to constant 22.5%, turn the ignition key from ON to START 5 times within 10 seconds. At this time, the caution buzzer will sound to notify that the IAC valve duty is in fixed mode.
3. During this fixed mode, adjust engine speed to 850 ± 50 r/min. by turning by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.
5. Return the throttle to fully close and check engine speed.



Idle Speed Inspection / Adjustment (Electric Fuel Injection model)

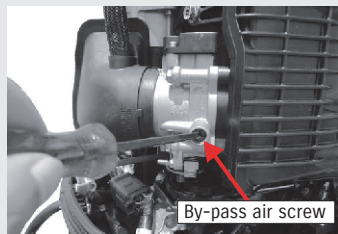
DF40A/50A/60A ('15~)

[Idle speed adjustment]

Idle speed (in neutral) 750-850 r/min.

Adjustment:

1. Shift into Neutral and close the throttle fully (this will cause a fully close throttle signal to be input to the ECM).
2. To set the IAC valve duty to constant 8.8%, turn the ignition key from "ON" to "START" 5 times within 10 seconds. At this time, caution buzzer will sound to notify that IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 800 ± 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will automatically cancel the IAC valve duty fixed mode.
5. Return the throttle to fully close and check engine speed



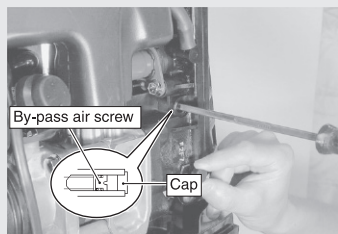
DF60/70 ('03~)

[Idle speed adjustment]

Idle speed (in neutral) 650-750 r/min.

Adjustment:

1. Check that the CTP switch is in the ON position.
2. To set the IAC valve duty to constant 22.5%, raise the engine speed to 1000 r/min. or higher by turning the by-pass air screw and hold that speed for 10 seconds. At this time, the buzzer will sound to notify that the IAC valve duty is in the fixed mode.
3. During the fixed mode of the IAC valve duty, adjust the engine speed to 700 ± 50 r/min. by turning the by-pass air screw.
4. Open the throttle valve to turn the CTP switch off.
5. Close the throttle valve and then recheck the engine speed.



DF90/100/115/140

[Idle speed adjustment]

Idle speed (in neutral)	DF90/100/115	600-650 r/min.
	DF140	650-750 r/min.

Adjustment:

1. Shift into Neutral and close the throttle fully (this will cause a fully close throttle signal to be input to the ECM).
2. To set the IAC valve duty to constant 30%, raise engine speed to 1000 r/min. or higher by turning the by-pass air screw and hold that speed for 10 seconds.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to the above idle speed by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will automatically cancel the IAC valve duty fixed mode.
5. Return the throttle to fully close and check engine speed.



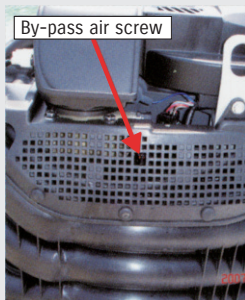
DF150/175

[Idle speed adjustment]

Idle speed (in neutral)	600-700 r/min.
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Adjustment:

1. Shift into Neutral and close the throttle fully (this will cause a fully close throttle signal to be input to the ECM).
2. To set the IAC valve duty to constant 10%, turn the ignition key from "ON" to "START" 5 times within 10 seconds. At this time, caution buzzer will sound to notify that IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 650 \pm 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.



Idle Speed Inspection / Adjustment (Electric Fuel Injection model)

DF100A/115A/140A ('15~)

[Idle speed adjustment]

Idle speed (in neutral) 650-750 r/min.

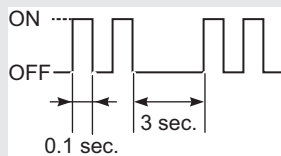
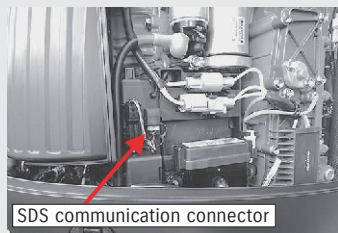
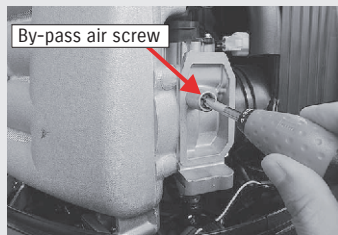
Adjustment:

Normal key start model

1. Shift into Neutral and close the throttle fully (this will cause a fully close throttle signal to be input to the ECM).
2. To set the IAC valve duty to constant 32.5%, turn the ignition key from "ON" to "START" 5 times within 10 seconds. At this time, caution buzzer will sound to notify that IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 700 \pm 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.

Keyless start model (Option from 2016 model)

1. Start the engine and allow to warm up, then shut the engine off.
2. Confirm that the keyless start system is ON. Close the throttle fully.
3. Push the main switch knob to start the engine and stay it pushing for 5 seconds. The engine starts and the buzzer will sound on a repeating pattern of double short beeps in 0.1 seconds with an interval of 3 seconds off as shown below. This pattern continues for certain seconds. As for the time of this pattern for the IAC adjusting preparation mode, it varies depending on an engine warming up condition.
4. After the above mentioned step 3, it automatically shifts to the IAC duty fixed mode. At this moment, the buzzer will sound on a repeating pattern of single beep in 0.5 seconds with an interval of 3 seconds off to notify that the IAC duty is in fixed mode.
5. During this fixed mode of IAC duty (approx. 5 minutes), adjust engine speed to 700 \pm 50 r/min. by turning the by-pass air screw.
6. When finished adjusting the idle speed, opening the throttle will automatically cancel the IAC fixed mode.



DF150A/175A/200A

(Idle speed adjustment)

Idle speed (in neutral) 600-700 r/min.

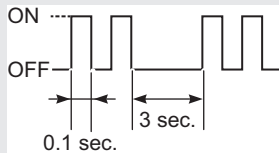
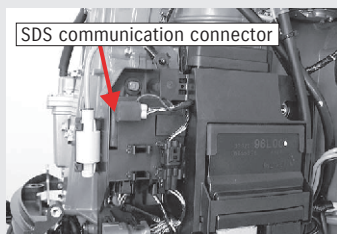
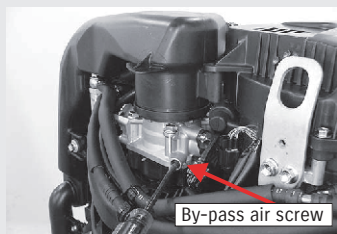
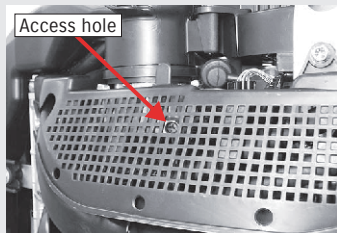
Adjustment:

Normal key start model

1. Shift into Neutral and close the throttle fully (this will cause a fully close throttle signal to be input to the ECM).
2. To set the IAC valve duty to constant 13.8%, turn the ignition key from "ON" to "START" 5 times within 10 seconds. At this time, caution buzzer will sound to notify that IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 650 ± 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.

Keyless start model (Option from 2016 model)

1. Start the engine and allow to warm up, then shut the engine off.
2. Confirm that the keyless start system is ON. Close the throttle fully.
3. Push the main switch knob to start the engine and stay it pushing for 5 seconds. The engine starts and the buzzer will sound on a repeating pattern of double short beeps in 0.1 seconds with an interval of 3 seconds off as shown below. This pattern continues for certain seconds. As for the time of this pattern for the IAC adjusting preparation mode, it varies depending on an engine warming up condition.
4. After the above mentioned step 3, it automatically shifts to the IAC duty fixed mode. At this moment, the buzzer will sound on a repeating pattern of single beep in 0.5 seconds with an interval of 3 seconds off to notify that the IAC duty is in fixed mode.
5. During this fixed mode of IAC duty (approx. 5 minutes), adjust engine speed to 650 ± 50 r/min. by turning the by-pass air screw.
6. When finished adjusting the idle speed, opening the throttle will automatically cancel the IAC fixed mode.



Idle Speed Inspection / Adjustment (Electric Fuel Injection model)

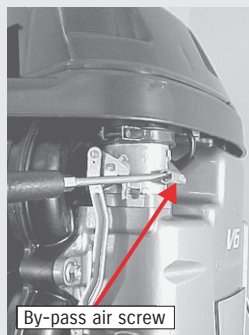
DF200/225/250

【Idle speed adjustment】

Idle speed (in neutral) 600-700 r/min.

Adjustment:

1. Shift into Neutral and close the throttle fully (this will cause a fully close throttle signal to be input to the ECM).
2. To set the IAC valve duty to constant 30%, turn the ignition key from “ON” to “START” 5 times within 10 seconds. At this time, caution buzzer will sound to notify that IAC valve duty is in fixed mode.
3. During this fixed mode of IAC valve duty (approx. 5 minutes), adjust engine speed to 650 ± 50 r/min. by turning the by-pass air screw.
4. When finished adjusting the idle speed, opening the throttle will cancel the IAC valve duty fixed mode.



Idle speed in gear and IAC valve duty

Model	Idle Speed	IAC valve Duty
DF9.9B/15A/20A	850±50r/min.	Approx.10%
DF25A/30A	850±50r/min.	Approx.10%
DF40/50	850±50r/min.	Approx.20~30%
DF40A/50A/60A	800±50r/min.	Approx.0~30%
DF40A/50A/60A('15~)	800±50r/min.	Approx.8.8%
DF60/70	700±50r/min.	Approx.20~30%
DF70A/80A/90A/100B	700±50r/min.	Approx.0~30%
DF90/100/115	625±25r/min.	Approx.30%
DF140	700±50r/min.	Approx.30%
DF100A/115A/140A	700±50r/min.	Approx.40~50%
DF100A/115A/140A('15~)	700±50r/min.	Approx.33%
DF150/175	650±50r/min.	Approx.10%
DF150A/175A/200A	650±50r/min.	Approx.15%
DF200/225/250	650±50r/min.	Approx.30%

Oil Change Reminder System

DF9.9B~DF350A (Electric Fuel Injection model)

This system informs the operator of the time for changing engine oil on the basis of the maintenance schedule.

Change engine oil according to the recommended maintenance schedule to keep good performance of the engine.

[System Activation]

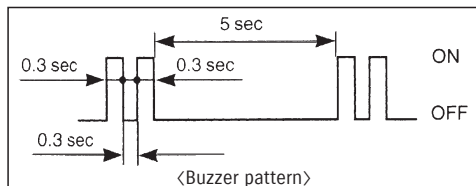
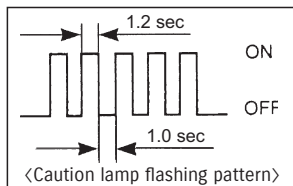
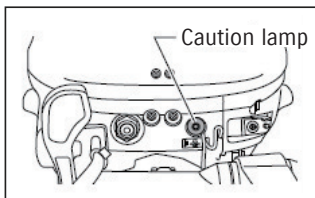
DF9.9B/15A/20A

TILLER HANDLE MODEL

When the total operating hours have reached the pre-programmed hours, the caution lamp will flash while the engine is running.

REMOTE CONTROL MODEL

When the total operating hours have reached the pre-programmed hours, the caution lamp will flash. If the engine is running, the buzzer will begin a series of double beeps additionally.

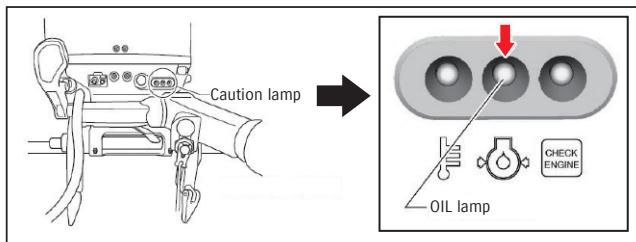
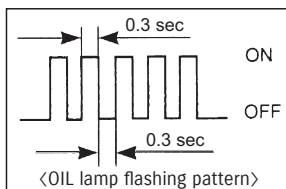


DF25A/30A

When the total operating hours have reached the pre-programmed hours, the "OIL" lamp will flash while the engine is running or the ignition switch is ON.

REMOTE CONTROL MODEL

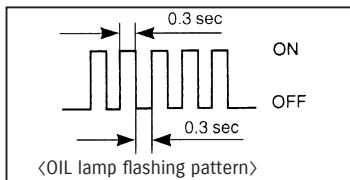
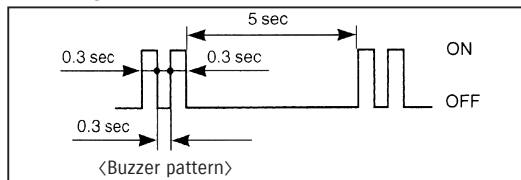
When the oil change reminder system is activated, the buzzer will begin a series of double beeps after starting engine. This function is added to "OIL lamp flashing". The buzzer sound will be stopped approx. 30 seconds after engine is started.



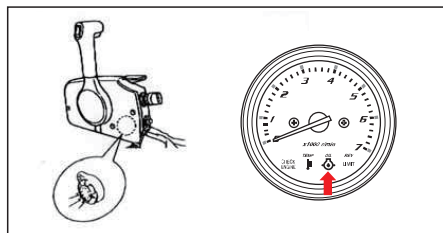
Oil Change Reminder System

DF40~DF250

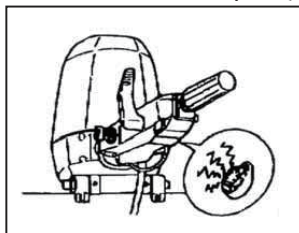
When the total motor operating hours have reached the pre-programmed hours, the "OIL" lamp will flash, and the buzzer will begin a series of double beeps if engine is not running (but the ignition switch is ON).



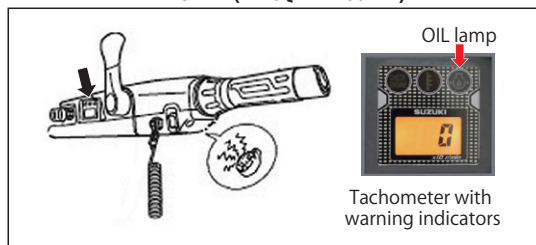
REMOTE CONTROL MODEL



TILLER HANDLE MODEL (DF40QH~DF90ATH)



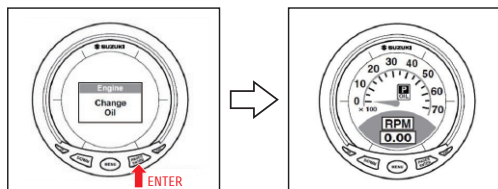
TILLER HANDLE MODEL (DF40QH~DF90ATH)



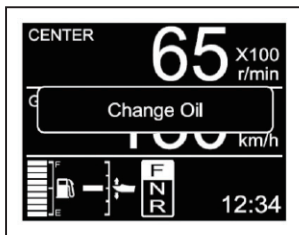
4" SMIS Multi-Function Gauge

When the total operating hours have reached the preprogrammed hours, the "Change Oil" is displayed on meter screen, and the buzzer sounds.

By pressing the "ENTER" button after confirming the display of "Change Oil", the caution alarm icon appears on the display screen and then the "Change Oil" indication will be cleared.



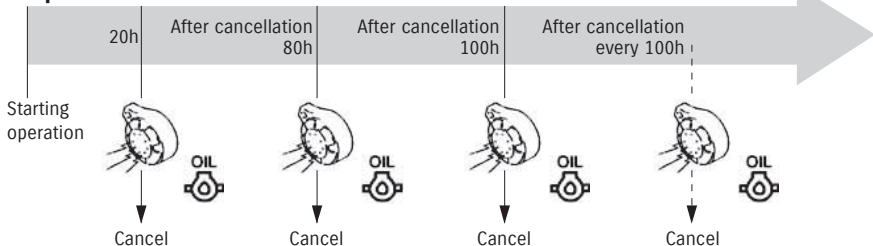
SUZUKI Multi-Function Gauge (SMG4)



When the total operating hours have reached the pre-programmed hours, the "Change Oil" is displayed on screen, and the buzzer sounds.

If you push some button in the gauge, "Change Oil" message will disappear.

Operation hours



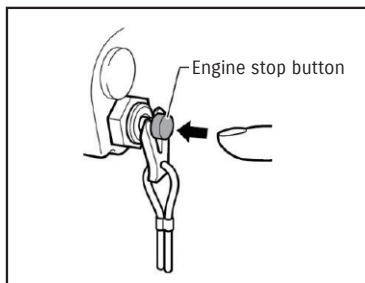
NOTE:

Once the system has been activated, SUZUKI strongly recommends that the engine oil be replaced before canceling the system.

[Cancellation]


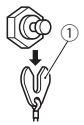


DF9.9B/15A/20A, DF25A/30A (Tiller handle model)

1. Make sure that shift is in neutral and close the throttle fully.
2. Push the engine stop button 3 times within 4 seconds so that engine should not stall.
3. The caution lamp is no longer lit when the reminder cancellation is successful.


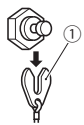




Cancellation of Oil Change Reminder System

DF9.9B/15A/20A、DF25A/30A (Remote control model)

 <p>1. Stop the engine and then turn the ignition key to the ON position.</p>	 <p>2. Remove the emergency stop switch lock plate ①.</p>	 <p>3. Pull up the emergency stop switch knob ② 3 times within 4 seconds.</p>	 <p>4. A short beep will be heard if the cancellation is successful.</p>
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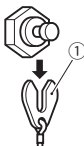


DF40~DF250 (Tiller handle model/Remote control model)

 <p>1. Stop the engine and then turn the ignition key to the ON position.</p>	 <p>2. Remove the emergency stop switch lock plate ①.</p>	 <p>3. Pull up the emergency stop switch knob ② 3 times within 10 seconds.</p>	 <p>4. A short beep will be heard if the cancellation is successful.</p>
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(Except for Suzuki Precision Control model)

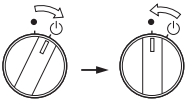
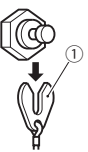


Suzuki Precision Control Model

(DF150TG(ZG)/175TG(ZG), DF150AP/175AP/200AP, DF300, DF250AP/DF300AP, DF300B/325A/350A)

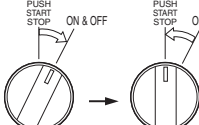
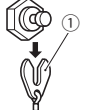


 <p>1. Stop the engine and then turn the ignition key to the ON position.</p>	 <p>2. Remove the emergency stop switch lock plate ①.</p>	 <p>3. Depress the START & STOP button ② 3 times within 10 seconds.</p>	 <p>4. A short beep will be heard if the cancellation is successful.</p>
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Keyless start model




Suzuki Precision Control Model

 <p>1. Turn the Keyless Start System to ON state by turn the main switch to the "ON" position and then release it. The main switch automatically returns to the "OFF" position.</p>	 <p>2. Remove the emergency stop switch lock plate ①.</p>	 <p>3. Depress the START & STOP button ② 3 times within 10 seconds.</p>	 <p>4. A short beep will be heard if the cancellation is successful.</p>
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Mechanical Control Model

 <p>1. Turn the Keyless Start System to ON state by turn the main switch to the "ON & OFF" position and then release it. The main switch automatically returns to the "PUSH START/ STOP" position.</p>	 <p>2. Remove the emergency stop switch lock plate ①.</p>	 <p>3. Pull up the emergency stop switch knob ② 3 times within 10 seconds.</p>	 <p>4. A short beep will be heard if the cancellation is successful.</p>
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Information

Keyless Start System : ON		
Tachometer	SMG4	SPC Model (SELECT switch)
 <p>4 LED Lamps light.</p>	 <p>Display appears.</p>	 <p>Green lamp lights.</p>

Confirm the key-fob is within the communication range of the Keyless Start System.

Keyless Start Model (Initialization of Unit ID Code)

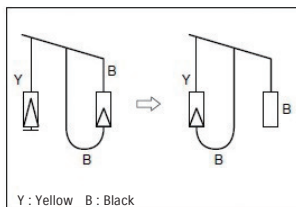
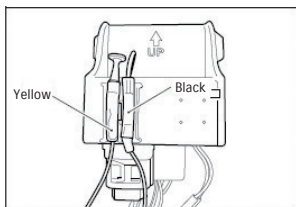
When the outboard motor is resold, or if it is necessary to use the ECM on another engine, the keyless control unit ID code must be erased from the ECM.

If you don't initialize ECM, it is impossible to start the engine with any other control system.

1. Turn the main switch knob from "neutral" to "ON & OFF" position, then release the knob.

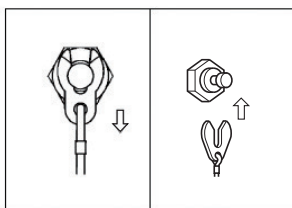
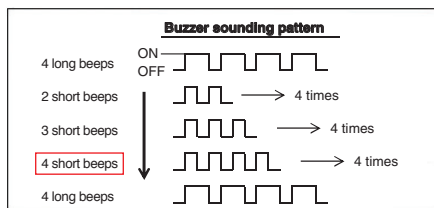
Confirm that the keyless start system has been turned ON.

2. Connect the black lead wire and the yellow lead wire in the keyless control harness.



3. The buzzer starts sounding in the following patterns.

4. When the buzzer starts sounding with 4 short sounds, remove the lock plate from the emergency stop switch, and reinstall the lock plate into the original position.



5. Disconnect the connection of black lead wire and yellow lead wire.

6. The buzzer sounds when the initialization is successfully completed.

The LED lamp on the "SELECT" switch goes OFF.

7. Remove the battery cable from the battery.

NOTE:

After initializing the unit ID code, do not turn the main switch knob to "ON & OFF" position.

If the switch is turned, the ID code cross-check will be performed again between the keyless control unit and ECM.

Switching the communication mode of the key-fob

Press and hold the lock button ① on the key-fob for more than 1 second to switch between ON mode and OFF mode.

If the lock button ① is pressed briefly while in communication ON mode, it is possible to confirm the communication mode of the key-fob.

LED on the key-fob briefly flashes once. → Communication mode

LED on the key-fob flashes once longer. → Not Communication mode



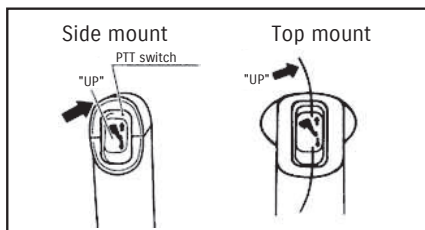
Setting of Tilt Up Limit Position and Trim Down Limit Position

[Setting of Tilt Up Limit Position]

CAUTION : Do not start the engine.

DF60A~DF140A

1. Press the "UP" side of the PTT switch so that the optimum full tilt up position for the boat can be obtained.



2. If not equipped with Keyless Start System:
Turn the ignition key to the "ON" position.

If equipped with Keyless Start System:
Turn the Keyless Start System ON.



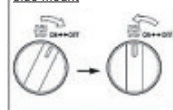
Keyless Start Model

(DF100A/115A/140A Option)

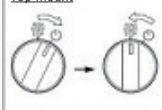
Turn the main switch knob from "neutral" to "ON & OFF" position, then release the knob.

Confirm that the keyless start system has been turned ON.

Side mount



Top mount



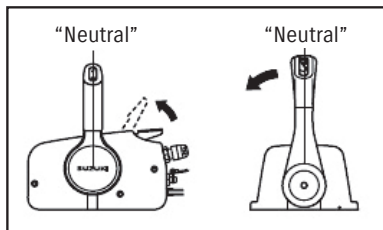
3. Remove the emergency stop switch lock plate.
4. Make sure that remote control handle is in "Neutral".
(Check that the neutral switch is in "ON" position.)

5. Top mount type:

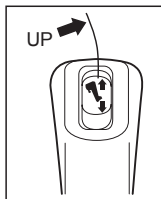
Using the throttle only function of the remote control box, move the control handle forward until the caution buzzer sounds one time.

Side mount type:

Using the throttle only function of the remote control box, move the warm-up lever upward until the caution buzzer sounds one time.



6. Press the "UP" side of PTT switch 3 times within 3 seconds.
The buzzer will sound one time briefly indicating the setting has been accepted.



7. Return the throttle to the fully closed position and install the lock plate on the emergency switch. Operate the full tilt up and full trim down operations several times by pressing the PTT switch and check that the settings of both the trim down limit and tilt up limit is properly set.

[Cancellation of Tilt Up Limit Position Setting]

1. Turn the ignition key to the "ON" position. Raise the motor until tilt position.
2. Pull out the emergency stop switch lock plate.
3. Make sure that remote control handle is in "Neutral".
(Check that the neutral switch is in "ON" position.)
4. **Top mount type:**
Using the throttle only function of the remote control box, move the control handle forward until the caution buzzer sounds one time.
Side mount type:
Using the throttle only function of the remote control box, move the warm-up lever upward until the caution buzzer sounds one time
5. Press the "UP" side of the PTT switch for three seconds and the buzzer will sound twice briefly indicating the setting has been canceled.
6. Return the throttle to the fully closed position.

[Setting of Trim Down Limit Position] (DF40A~DF350A)

Trim down limit position is set already at factory.

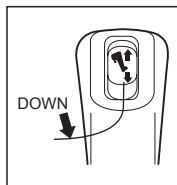
Once the ECM has been replaced or the trim sensor removed and reinstalled, the resetting of the trim down limit position limit should be performed.

Cancel the current trim down limit position and then set the trim down limit position at the engine trimmed down fully.

Perform the above procedure same as tilt up limit position setting.

However, the button should be pressed is the "DOWN" side of the PTT switch.

Press the "DOWN" side of the PTT switch 3 times within 3 seconds.



NOTE:

If the trim down limit position isn't set, the trim gauge will not operate. (~2016 model)

[Cancellation of Trim Down Limit Position Setting]

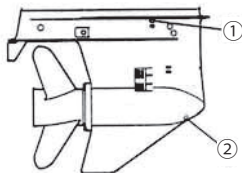
Press the "DOWN" side of the PTT switch for 3 seconds. Perform the above procedure same as cancellation of tilt up limit position setting. However, the button should be pressed is the "DOWN" side of the PTT switch.

Gear Oil Change (Drain)

Notice :
Do not reuse gaskets once removed. Always use a new gasket.

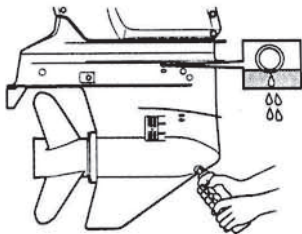
DF150~DF300AP

1. Place outboard motor upright on a level surface.
2. Place a drain pan under the lower unit.
3. Remove the gear oil drain plug ② first, then remove the air vent hole plug ① and drain gear oil.



① Air vent hole plug
② Gear oil drain plug

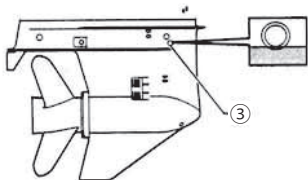
4. Inject the specified gear oil into the gear oil drain hole ② until it just starts to come out of the air vent hole plug ①.
5. Reinstall and tighten the air vent hole plug ①.
6. Reinstall and tighten the gear oil drain plug ②.



7. Start and operate the engine for a few minutes and then stop the engine.

After 10 minutes, remove the gear oil level plug ③ and recheck the gear oil level.

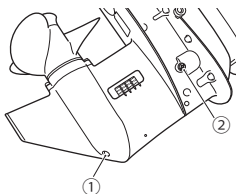
If the oil level is low, slowly inject the gear oil into the gear oil level hole ③ up to the correct level.



③ Gear oil level plug

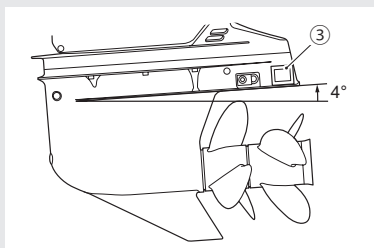
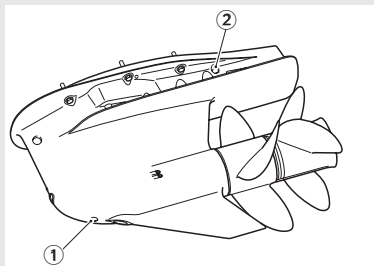
DF25A/30A

1. Place outboard motor upright on a level surface.
2. **Raise the outboard motor in full tilt up position.**
3. Place a container under the lower unit.
4. Remove the lower gear oil drain plug ① first, then remove the gear oil level plug ② and drain gear oil.

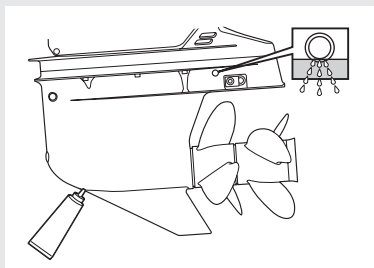


DF300B/325A/350A

1. Place outboard motor upright on a level surface.
2. Center the steering and raise the outboard motor to full trim up position.
3. Place a container under the lower unit.
4. Remove lower gear oil drain plug ① first, then remove rear gear oil level plug ② and drain gear oil.
5. Place the motor in trim up 4 degrees position from horizontal using a digital angle meter ③.



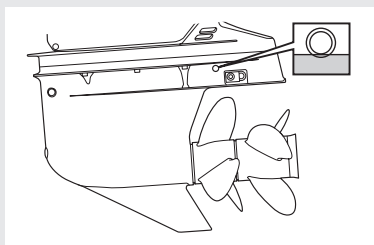
6. With the outboard motor in trim up 4 degrees position, fill with recommended gear oil through oil drain hole until oil just starts to flow out from rear gear oil level hole.



Gear oil amount

Approx. 3.2 L (3.4/2.8 US/Imp. qt)

7. Install rear gear oil level plug before removing oil filler tube from drain hole.
8. Install oil drain plug.
9. To check the gear oil level:
 - a) Make sure that the outboard motor is in trim up 4 degrees position.
 - b) Remove rear gear oil level plug.
 - c) If oil can be seen at rear gear oil level hole, the unit is full.
 - d) If oil level is low, re-fill with gear oil through rear gear oil level hole.
 - e) Install rear gear oil level plug.

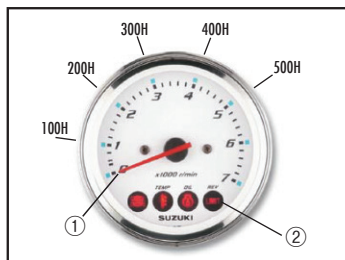


Operating Hour Indication System (Remote control model)

ECM remembers the total operating hours of the engine and communicate it through the monitor-tachometer.

2 seconds after turning the ignition switch on, the needle ① and the REV-LIMIT lamp ② indicate the total operating hours.

For checking the total operating hours, refer to the following chart.

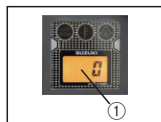


Total operating hours	MONITOR-TACHOMETER	
	Needle ① indication	REV-LIMIT lamp ② flashing *
0~ (49h)	—	NO
50h	500r/min.	
60h	600r/min.	
⋮	⋮	
100h	1000r/min.	
⋮	⋮	
540h	5400r/min.	
550h	500r/min.	1 time
560h	600r/min.	
600h	1000r/min.	
⋮	⋮	
1040h	5400r/min.	
1050h	500r/min.	2 times
1060h	600r/min.	
1100h	1000r/min.	
⋮	⋮	
1540h	5400r/min.	
1550h	500r/min.	3 times
⋮	⋮	
2030h	5300r/min.	
2040h and over	5400r/min.	

*: One lamp flash corresponds to 500 hours.

Operating Hour Indication System (Tachometer/Indicator)

Tiller handle model (2015 model ~) Tachometer/Indicator



■ Tachometer Indication Procedure

Lapse of Time	Tachometer Indication ①
First 2 seconds after turning the ignition switch on	“0”
Next 2.5 seconds (1st step)	Indication of number of time in which the operating hours attain to 500 hours in the 3rd digit.
Next 1 second	“0”
Next 3 seconds (2nd step)	The hours subtracted the hours indicated in the first step indication from the total operating hours. (Indicated in unit of 10 hours)

■ Chart of Total Operating Hours Indication

Total Operating Hours	Tachometer Indication ①	
	1st Step	2nd Step
0~50h	0	0
51~59h		50
∴		∴
300~309h		300
∴		∴
540~549h		540
550~559h		50
∴	∴	
800~809h	100 (1 time)	300
∴		∴
1040~1049h		540
1050~1059h		50
∴	∴	
1300~1309h	200 (2 times)	300
∴		∴
1540~1549h		540
1550~1559h		50
∴	∴	
1800~1809h	300 (3 times)	300
∴		∴
2040h and over		remaining at 540

Model Year & Engine Serial No.

Model Year	Year Code	Serial No.
1998	VW	86****~
1999	VX	97****~
2000	VY	03****~
2001	K1	15****~
2002	K2	25****~
2003	K3	37****~
2004	K4	42****~
2005	K5	51****~
2006	K6	68****~
2007	K7	78****~
2008	K8	88****~
2009	K9	98****~
2010	K10	01****~

※ 2011 and later model : No year code

Body Color Code

Color code	Name of Color	
0EP	Shadow Black Metallic	~ 2016 model
Y5S	White	2012 model ~
YKV	Mat Black	2015 model ~
YAY	Pearl Nebular Black	2017 model ~

Pre-Fix List for 4-stroke OBM

Model	Model Year	Pre-fix
DF2.5	'06~'09	00251F
	'10~	00252F
DF4	'02~'09	00401F
	'10~'15	00402F
DF5	'02~'09	00501F
	'10~'15	00502F
DF6	'02~'09	00601F
	'10~'15	00602F
DF4A	'17~	00403F
DF5A	'17~	00503F
DF6A	'17~	00603F
DF8A	'10~	00801F
DF9.9A	'10~	00994F
DF9.9	'98~'03	00991F
	'04~'09	00992F
DF15	'98~'03	01501F
	'04~'09	01502F
	'10~'12	01503F
DF9.9B	'13~	00995F
DF15A	'13~	01504F
DF20A	'13~	02002F
DF25(V2)	'06~'09	02502F
	'10~'14	02503F
DF25	'00~'06	02501F
DF30	'00~'09	03001F
	'10	03002F
DF25A	'15~	02504F
DF30A	'15~	03003F
DF40	'99~'09	04001F
	'10	04002F
DF50	'99~'09	05001F
	'10	05002F
DF40A	'11~	04003F
DF50A	'11~	05003F
DF50AV	'14~	05004F
DF60A	'10~	06002F
DF60AV	'14~	06003F
DF60	'98~'09	06001F
DF70	'98~'08	07001F
DF70A	'09	07002F
	'10~	07003F
	'09	08001F
DF80A	'10~	08002F
	'09	09002F
DF90A	'10~	09003F
	'01~'08	09001F
DF100	'09	10001F
	'10~'11	10002F
DF115	'01~'09	11501F
	'10~'12	11502F

Model	Model Year	Pre-fix
DF115(Z)	'08~'09	11501Z
	'10~'12	11502Z
DF140	'02~'09	14001F
	'10~'12	14002F
DF140(Z)	'04~'08	14001Z
DF100A	'13~	10003F
DF100B	'18~	10004F
DF115A	'13~	11503F
DF115A(Z)	'13~	11503Z
DF140A	'13~	14003F
DF140A(Z)	'13~	14003Z
DF150	'06~'09	15001F
	'10~	15002F
DF150(Z)	'06~'09	15001Z
	'10~	15002Z
DF150A	'19~	15003F
DF150A(Z)	'19~	15003Z
DF150AP	'17~	15003P
DF175	'06~'09	17501F
	'10~	17502F
DF175(Z)	'06~'09	17501Z
	'10~	17502Z
DF175A	'19~	17503F
DF175A(Z)	'19~	17503Z
DF175AP	'17~	17503P
DF200A	'15~	20003F
DF200A(Z)	'15~	20003Z
DF200AP	'15~	20003P
DF200	'04~'09	20001F
	'10~	20002F
DF200(Z)	'04~'09	20001Z
	'10~'11	20002Z
DF225	'04~'09	22501F
	'10~	22503F
DF225(Z)	'04~'09	22501Z
	'10~'11	22503Z
DF250	'04~'09	25001F
	'10~	25003F
DF250(Z)	'04~'09	25001Z
	'10~'11	25003Z
DF300	'07~'09	30001F
	'10~'11	30002F
DF300(Z)	'07~'09	30001Z
	'10~'11	30002Z
DF250AP	'13~	25003P
DF300AP	'12~	30002P
DF300B	'20~	30003F
DF325A	'18~	32501F
DF350A	'18~	35001F

4 Stroke OBM Periodic Maintenance

Flat rate time of periodic maintenance

Power range \ Interval	Initial 20 hrs. or 1 month	Every 100 hrs. or every 12 months	Every 200 hrs. or every 12 months	Every 300 hrs. or every 36 months
2.5 PS	1.0 hr.	1.1 hrs.	1.7 hrs.	1.4 hrs.
4-6 PS	1.3 hrs.	1.0 hr.	1.7 hrs.	1.3 hrs.
8-9.9 PS (Carburetor models)	1.7 hrs.	1.4 hrs.	2.4 hrs.	1.7 hrs.
9.9-20 PS (EFI models)	1.7 hrs.	1.6 hrs.	2.7 hrs.	2.0 hrs.
25-30 PS	1.9 hrs.	1.5 hrs.	3.0 hrs.	2.0 hrs.
40-60 PS	1.6 hrs.	1.8 hrs.	2.6 hrs.	3.4 hrs.
70-140 PS	1.6 hrs.	1.9 hrs.	2.9 hrs.	3.9 hrs.
150-200 PS (4 cylinders)	1.7 hrs.	2.1 hrs.	3.3 hrs.	4.5 hrs.
200-300 PS (6 cylinders)	2.0 hrs.	2.9 hrs.	4.0 hrs.	5.8 hrs.
325~350 PS	2.4 hrs.	3.5 hrs.	4.8 hrs.	6.6 hrs.

All lineup for 4 stroke OBM maintenance kit

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
1	DF2.5 (‘06-‘11)	17400-97820	17461-97JM0	IMPELLER,WATER PUMP	1
			09482-00406	SPARK PLUG, CR6HSA	1
			09204-02001	COTTER PIN	1
			09168-10022	GASKET,10X17X1.5	1
			59178-97J00	GASKET,DRAIN PLUG	2
			55321-87J01	ANODE,PROTECTION	1
			09280-33005	O RING	1
			09202-02006	PIN(2.9X14)	1
			17471-97J00	PANEL, PUMP CASE UNDER	1
17472-97J00	GASKET, PUMP CASE PANEL	1			
2	DF2.5 (‘12-)	17400-97810	17461-97JM0	IMPELLER,WATER PUMP	1
			09482-00406	SPARK PLUG, CR6HSA	1
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	1
			59178-97J00	GASKET,DRAIN PLUG	2
			55321-87J01	ANODE,PROTECTION	1
			09280-33005	O RING	1
			09202-02006	PIN	1
			17471-97JL0	UNDER PANEL	1
17472-97JL0	GASKET	1			
3	DF4/5/6 (‘02-‘10)	17400-91860	17400-986L0	KIT,WATER PUMP REPAIR	1
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09482-00299	SPARK PLUG, BPR6ES	1
			09168-10022	GASKET,10X17X1.5	3

4 Stroke OBM Periodic Maintenance

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
3	DF4/5/6 ('02~'10)	17400-91860	55321-87J01	ANODE,PROTECTION	2
			17412-91JL0	PANEL, WATER PUMP CASE UPR	1
			17413-91JL0	SLEEVE, WATER PUMP CASE	1
			15410-98500	FUEL,FILTER	1
4	DF4/5/6 ('11~'16)	17400-91830	17400-986L0	KIT,WATER PUMP REPAIR	1
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09482-00L04	SPARK PLUG, CPR6EA-9	1
			09168-10022	GASKET,10X17X1.5	3
			55321-87J01	ANODE,PROTECTION	2
			17412-91JL0	PANEL	1
			17413-91JL0	SLEEVE	1
5	DF4A/5A/6A P01 DF4A/6A P03 ('17~)	17400-91890	09168-12017	GASKET(12X17X1)	1
			09204-03003	PIN	1
			09280-39001	O RING(D:2,ID:38.5)	1
			09420-03002	KEY	1
			09482-00L04	PLUG,SPARK(CPR6EA-9)	1
			16510-16H11	FILTER,ENGINE OIL	1
			17412-91JL0	PANEL,WATER PUMP CASE UPR	1
			17413-91JL0	SLEEVE,WATER PUMP CASE	1
			17461-985M0	IMPELLER,WATER PUMP	1
			17471-98610	PANEL,PUMP CASE UNDER	1
			17472-91J00	GASKET,PUMP CASE PANEL	1
			44330-13H00	FILTER,FUEL	1
			55321-87J01	ANODE,PROTECTION	1
			55321-95J00	ANODE,PROTECTION	1
59178-97J00	GASKET,DRAIN PLUG	2			
6	DF8A/9.9A ('10~)	17400-99840	15410-98500	FILTER,FUEL	1
			16510-45H10	FILTER ASSY,ENG OIL	1
			09204-02004	COTTER PIN	1
			09280-54001	O RING(D:2.4,ID:52.6)	1
			09280-13004	O RING(D:1.9,ID:13)	1
			09168-12017	GASKET,12X17X1	1
			59178-97J00	GASKET,DRAIN PLUG	2
			55321-87J01	ANODE,PROTECTION	2
			09280-22019	O RING,D:1.9,ID:21.8	1
			09482-00528	SPARK PLUG, CR6E	2
			17400-99J01	KIT, WATER PUMP REPAIR	1
			17413-94J00	SLEEVE	1

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
7	DF9.9/15 ('11-'13)	17400-94810	17400-94J00	KIT, WATER PUMP REPAIR	1
			09204-02004	PIN	1
			09482-00L04	SPARK PLUG, CPR6EA-9	2
			16510-45H10	FILTER ASSY,ENG OIL	1
			09280-10013	O RING(D:2.4,ID:9.6)	1
			55321-99E00	ANODE,PROTECTION	1
			55321-90L00	ZINC,PROTECTION	1
			09168-12017	GASKET,12X17X1	1
			09168-10022	GASKET,10X17X1.5	2
			17413-94J00	SLEEVE, WATER PUMP CASE	1
			15410-98500	FUEL,FILTER	1
8	DF9.9B/15A/20A ('13-)	17400-89811	17400-99J01	KIT, WATER PUMP REPAIR	1
			09204-02004	PIN	1
			09482-00661	SPARK PLUG, MR6K-9	2
			16510-45H10	FILTER ASSY,ENG OIL	1
			09280-13004	O RING(D:1.9,ID:13)	1
			09280-54001	O RING(D:2.4,ID:52.6)	1
			55321-87J01	ANODE,PROTECTION	2
			09280-22019	O RING,D:1.9,ID:21.8	1
			09168-12017	GASKET,12X17X1	1
			59178-97J00	GASKET,DRAIN PLUG	2
			17413-94J00	SLEEVE, WATER PUMP CASE	1
15410-87L00	FUEL,FILTER	1			
9	DF20/25 V2 ('06-'14)	17400-95870	17400-95J02	KIT,WATER PUMP REPAIR	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00427	SPARK PLUG, BKR6E	2
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-95J00	ANODE,PROTECTION	2
			55321-87J01	ANODE,PROTECTION	5
			09280-10013	O RING D:2.4ID:9.6	2
			09280-22019	O RING D:1.9ID:21.8	1
			17413-95J00	SLEEVE	1
15410-87J30	FUEL,FILTER	1			
10	DF25/30 ('01-'10)	17400-89820	17400-96353	KIT,WATER PUMP REPAIR	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00446	SPARK PLUG, DCPR6E	3
			09204-03003	COTTER PIN,D:3.6,L:25	1

4 Stroke OBM Periodic Maintenance

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
10	DF25/30 ('01~'10)	17400-89820	09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	1
			11265-87E10	GASKET, PROTECTION COVER	1
			15410-87J10	FUEL,FILTER	1
11	DF25A/30A ('15-)	17400-94823	17400-94L00	KIT, WATER PUMP REPAIR	1
			09204-03003	COTTER PIN (D:3.6,L:25)	1
			09482-00661	SPARK PLUG (MR6K-9)	3
			16510-87J01	FILTER ASSY, OIL	1
			55321-87J01	ANODE,PROTECTION	5
			09280-22019	O RING (D:1.9,ID:21.8)	1
			09168-12017	GASKET (12X17X1)	1
			59178-97J00	GASKET,DRAIN PLUG	2
			17413-94L00	SLEEVE, WATER PUMP CASE	1
15410-87L00	FUEL,FILTER	1			
12	DF40/50 ('06LATE~'10)	17400-87821	17400-96353	KIT,WATER PUMP REPAIR	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00446	SPARK PLUG, DCPR6E	3
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	2
			09280-22019	O RING,D:1.9,ID:21.8	2
			15410-87J30	FILTER,FUEL	1
13	DF40A/50A/60A ('10~)	17400-88811	17400-88L00	KIT,WATER PUMP REPAIR	1
			09204-03003	COTTER PIN,D:3.6,L:25	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00446	SPARK PLUG, DCPR6E	3
			09168-12012	GASKET,12.5X20X2.5	1
			09168-10022	GASKET,10X17X1.5	2
			55321-87J01	ANODE,PROTECTION	3
			09280-22019	O RING,D:1.9,ID:21.8	2
			15410-88L00	FILTER COMP,FUEL	1
14	DF50AV/60AV ('14~)	17400-88822	17400-99E12	KIT,WATER PUMP REPAIR	1
			09204-03003	COTTER PIN,D:3.6,L:25	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00446	SPARK PLUG, DCPR6E	3
			09168-12012	GASKET,12.5X20X2.5	1
			09168-10022	GASKET,10X17X1.5	2

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
14	DF50AV/60AV ('14-)	17400-88822	55321-87J01	ANODE,PROTECTION	3
			09280-22019	O RING,D:1.9,ID:21.8	2
			15410-88L00	FILTER COMP,FUEL	1
15	DF60 ('09LATE-'09END)	17400-99850	17400-99E10	KIT,WATER PUMP REPAIR	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00299	SPARK PLUG, BPR6ES	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	1
			11265-87E10	GASKET, PROTECTION COVER	1
			17416-99E10	SEALING, WATER PUMP CASE	1
			17413-99E11	SLEEVE, WATER PUMP CASE	1
		15410-87J30	FILTER,FUEL	1	
16	DF60/70 ('07)	17400-99870	17400-87E04	KIT,WATER PUMP REPAIR	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00299	SPARK PLUG, BPR6ES	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	1
			11265-87E10	GASKET, PROTECTION COVER	1
					15410-87J30
17	DF60/70 ('08-'09EARLY)	17400-99860	17400-99E01	KIT,WATER PUMP REPAIR	1
			16510-87J01	FILTER ASSY,OIL	1
			09482-00299	SPARK PLUG, BPR6ES	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	1
			11265-87E10	GASKET, PROTECTION COVER	1
			17416-99E00	SEALING, WATER PUMP CASE NO1	1
			17413-99E11	SLEEVE, WATER PUMP CASE	1
					17417-99E00
		15410-87J30	FILTER,FUEL	1	
18	DF70A/80A/90A ('09-)	17400-87811	17400-87L04	KIT,WATER PUMP REPAIR	1
			16510-61A31	FILTER ASSY, OIL(WAKO)	1
			09482-00446	SPARK PLUG, DCPR6E	4
			09168-12012	GASKET,12.5X20X2.5	1

4 Stroke OBM Periodic Maintenance

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
18	DF70A/80A/90A (*09~)	17400-87811	09168-10022	GASKET,10X17X1.5	2
			55321-87J01	ANODE,PROTECTION	3
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09280-22019	O RING,D:1.9,ID:21.8	3
			09420-04009	KEY,WATER PUMP	1
			15410-87L00	FUEL,FILTER	1
19	DF100B (*18~)	17400-87831	17400-87L04	KIT,WATER PUMP REPAIR	1
			16510-61A31	FILTER ASSY, OIL(WAKO)	1
			09482-00446	SPARK PLUG, DCPR6E	4
			09168-12012	GASKET,12.5X20X2.5	1
			09168-10022	GASKET,10X17X1.5	2
			55321-87J01	ANODE,PROTECTION	3
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09280-22019	O RING,D:1.9,ID:21.8	3
			09420-04009	KEY,WATER PUMP	1
15412-92J00	ELEMENT, FUEL FILTER	1			
20	DF100/115 (*10~*12)	17400-92841	17400-92J21	KIT,WATER PUMP REPAIR	1
			16510-61A31	FILTER ASSY, OIL	1
			09482-00427	SPARK PLUG, BKR6E	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	4
			11265-87E10	GASKET,PROTECTION COVER	2
			09280-22019	O RING,D:1.9,ID:21.8	2
			09420-05009	KEY,WATER PUMP	1
15410-87J30	FILTER,FUEL	1			
21	DF100A/115A/140A (*13~)	17400-92822	17400-92J21	KIT,WATER PUMP REPAIR	1
			16510-61A31	FILTER ASSY, OIL(WAKO)	1
			09482-00427	SPARK PLUG, BKR6E	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	4
			11265-87E10	GASKET,PROTECTION COVER	2
			09280-22019	O RING,D:1.9,ID:21.8	2
			09420-05009	KEY,WATER PUMP	1
			15412-92J00	ELEMENT, FUEL FILTER	1

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
22	DF140 ('10-'12)	17400-92851	17400-92J21	KIT,WATER PUMP REPAIR	1
			16510-61A31	FILTER ASSY, OIL	1
			09482-00427	SPARK PLUG, BKR6E	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10022	GASKET,10X17X1.5	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	4
			11265-87E10	GASKET,PROTECTION COVER	2
			09280-22019	O RING,D:1.9,ID:21.8	2
			09420-05009	KEY,WATER PUMP	1
			15410-87J30	FILTER,FUEL	1
			16621-73G00	GASKET,OIL COOLER	1
			09280-56005	O RING(D:3.53,ID:56.74)	1
			09280-60007	O RING(D:3.5,ID:59.6)	1
09280-70002	O RING(D:3.1,ID:69.4)	1			
23	DF150/175 ('06-)	17400-96823	17400-96J02	KIT,WATER PUMP REPAIR	1
			16510-96J10	FILTER ASSY,OIL	1
			09482-00427	SPARK PLUG, BKR6E	4
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10034	GASKET,9.5X16.5X2	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	6
			09280-22019	O RING,D:1.9,ID:21.8	5
			17413-96J01	SLEEVE,WATER PUMP CASE	1
15410-96J00	FUEL,FILTER	1			
24	DF200A/200AP/ 175AP/150AP ('16-)	17400-96832	17400-96J02	KIT, WATER PUMP REPAIR	1
			16510-96J10	FILTER ASSY, OIL	1
			09482-00649	SPARK PLUG, LKR6E	4
			09204-03003	COTTER PIN, D:3.6, L:25	1
			09168-10034	GASKET, 9.5X16.5X2	2
			09168-12012	GASKET, 12.5X20X2.5	1
			55321-87J01	ANODE, PROTECTION	6
			09280-22019	O RING, D:1.9, ID:21.8	5
			17413-96J01	SLEEVE, WATER PUMP CASE	1
			15412-92J00	ELEMENT, FUEL FILTER	1

4 Stroke OBM Periodic Maintenance

	Model	Kit part number	Part number	Part name	Q'ty
	Year				
25	DF200/225/250 ('11~)	17400-93853	17400-93J02	KIT,WATER PUMP REPAIR	1
			16510-96J10	FILTER ASSY,OIL	1
			09482-00427	SPARK PLUG, BKR6E	6
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10034	GASKET,9.5X16.5X2	2
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	7
			09280-22019	O RING,D:1.9,ID:21.8	7
			55320-94900	ANODE SET,CLAMP BRACKET	1
			17413-93J02	SLEEVE,WATER PUMP CASE	1
			15412-93J10	ELEMENT, FUEL FILTER	1
			26	DF250A/300(A)/ 250S ('11~)	17400-98863
16510-96J10	FILTER ASSY,OIL	1			
09482-00427	SPARK PLUG, BKR6E	6			
09204-03003	COTTER PIN,D:3.6,L:25	1			
09168-10034	GASKET,9.5X16.5X2	2			
09168-12012	GASKET,12.5X20X2.5	1			
55321-87J01	ANODE,PROTECTION	8			
09280-22019	O RING,D:1.9,ID:21.8	7			
17413-93J02	SLEEVE,WATER PUMP CASE	1			
55320-94900	ANODE SET,CLAMP BRACKET	1			
15412-93J10	ELEMENT, FUEL FILTER	1			
27	DF325A/350A ('18~)	17400-98871			
			16510-96J10	FILTER ASSY,OIL	1
			09482-00642	SPARK PLUG, ILZKR7D8	6
			09204-03003	COTTER PIN,D:3.6,L:25	1
			09168-10034	GASKET,9.5X16.5X2	3
			09168-12012	GASKET,12.5X20X2.5	1
			55321-87J01	ANODE,PROTECTION	7
			09280-22019	O RING,D:1.9,ID:21.8	7
			17413-93J02	SLEEVE,WATER PUMP CASE	1
			55320-94900	ANODE SET,CLAMP BRACKET	1
			15412-93J10	ELEMENT, FUEL FILTER	1

MEMO

