YE SERVICE NEWS

Subject		el Engine Modification Parts to Comply with SOx Regulation and Estimated Price	
Engine	All model	Use	Marine main & aux. eng.
Model	All Hodel	Engine No.	_

Further to our Service News on compliance with SOx regulation, (18-2-G-02-013-L), we, herewith, would like to advise you of the engine modification parts and the estimated prices for converting your HFO spec engine to LSMDO or LSMGO specialized engine.

If you wish to convert your engine to comply with SOx regulation, please contact us at Yanmar Engineering Co.,LTD. or

Yanmar Co.,LTD Marine Products Sales and Marketing Division.

(Remarks)

- ●No modification is required for the engine that is already of MDO or MGO specialized specifications.
- ●The estimated prices are as of July 2019 and are subject to change in future.
- ●Concerning former engine models, (T260, T240, S185), no price is specified in the present list.

 When you wish modification for these models, specify the model name, engine number and
 your modification plan or job number for consulting us at Yanmar Engineering Co.,LTD or
 Yanmar Co.,LTD Marine Products Sales and Marketing Division.

(Modification Plan Example)

HFO⇒MDO from Jan. 1, 2020 MDO⇒LSHFO from Jun.1, 2020

Modification Parts List to Comply with SOx Regulation (1/8)

- O: Needs be replaced
- ▲ : To be replaced upon next maintenance opportunity
- \triangle : Re-usable (& to be replaced upon next opportunity)

Engine	Parts to be	Names of Parts	Parts	s NO.	Estimated	Q'ty	To be	Remarks
model	Modified	Names of Parts	Existing parts	Replacement parts	price [JPY/pc.]	[pc./eng.]	replaced or not	Remarks
		Cooling pipe plug	-	23887-120002	160	6		
	FO valve	Packing	_	23414-120000	50	6	0	Remove oil cooling pipe
		Closing joint / cap nut	_	43530-001780	460	6		Remove on cooling pipe
		Closing Joint / Cap nut	_	23821-080001	220	6		
6EY33LW	FO injection pump	Pinion lubrication plug	_	23887-120002	160	6	0	
	pump		_	23415-120000	50	6		
	T/C (A145)	Nozzle ring (w/no coating)	-	132674-19210	Pending	1	Δ	Existing part (w/coating) re-usable
		Cooling pipe plug	-	23887-120002	160	8		
	FO valve	Packing	-	23414-120000	50	8		Remove oil cooling pipe
		Closing joint /cap nut	_	43530-001780	460	8	0	Remove on cooling pipe
8EY33LW		Closing Joint / Cap nut	_	23821-080001	220	8		
OE133LW	FO injection	Pinion lubrication plug	_	23887-120002	160	8		
	pump	Fillion labrication plug	_	23415-120000	50	8		
	T/C (ST7)	Nozzle ring (w/no coating)	_	132874-19210	Pending	1	Δ	Existing part (w/coating) re-usable.

	Approved	Checked	Prepared
YANMAR ENGINEERING CO.,LTD Market Service Division	4. Ta.	H. Mortguethi	A.Hayata

Modification Parts List to Comply with SOx Regulation (2/8)

- $\bigcirc: \mathsf{Needs} \ \mathsf{be} \ \mathsf{replaced}$
- ▲ : To be replaced upon next maintenance opportunity

 △ : Re-usable (& to be replaced upon next opportunity)

Turbocharger (ST5) T/C (HPR5000) Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140)	Parts to be	Names of Parts	Parts	s NO.	Estimated price	Q'ty required	To be replaced or	Remarks						
Turbocharger (ST5) T/C (HPR5000) Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B	Modified		Existing parts	Replacement parts	[JPY/pc.]	[pc./eng.]	not							
Turbocharger (ST5) T/C (HPR5000) Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B		FO injection pump	(751695-51208)	(751695-51108)	(371,000)	(6)	(As assembly)							
Turbocharger (ST5) T/C (HPR5000) Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B		P&B assembly		151695-51103		6								
Turbocharger (ST5) T/C (HPR5000) Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B	FO injection pump			I-51401	1,500	6	Δ							
Turbocharger (ST5) T/C (HPR5000) Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B		-	O-ring		5-51223	800	12							
## FO injection ## Select ## either A or B ## FO injection ## FO injec				5-51242	1,000	6								
## FO injection ## Select ## either A or B ## FO injection ## FO injec		Pinion lubrication plug	_	26450-080122	50	6	0							
## FO injection ## Select ## either A or B ## FO injection ## FO injec			_	23414-080012	50	6								
## FO injection ## Select ## either A or B ## FO injection ## FO injec						_	151696-19250		1	Δ	1920kW			
## T/C (HPR5000)	urbocharg	Nozzle ring		151696-19270		1	Δ	1620kW						
FO injection pump T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (TPS61) T/C (ST6) T/C (ST6) FO valve *Select either A or B	er (ST5)	Maintenance kit		151696-19290 P# being established	476,000	1	\triangle	1471,1330kW						
FO injection pump T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (TPS61) T/C (ST6) T/C (ST6) FO valve *Select either A or B		Gasket		P# being established		2	Δ							
Aux. equipment T/C (TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (TPS61) T/C (ST6) T/C (A145) FO valve *Select either A or B FO injection	(HPR5000) Aux. equipment	Gasice	_	151692-18450	500,000	1	Δ	1840kW						
(TPS57) Aux. equipment T/C (HPR5000) main unit T/C(A140) FO injection pump T/C (TPS61) T/C (ST6) T/C (A145) FO valve *Select either A or B FO injection		Nozzle ring	_	151692-18430	486,000	1	Δ	1400-1730kW						
FO injection pump T/C (TPS61) T/C (ST6) T/C (A145) FO valve *Select either A or B FO injection	(TPS57)	Nozzle ring	_	151692-19160	Pending	1	Δ	1900kW						
FO injection pump T/C (TPS61) T/C (ST6) T/C (A145) FO valve *Select either A or B FO injection		Nozzle ring	_	151694-18430	486,000	1	Δ	1920kW						
FO injection pump T/C (TPS61) T/C (ST6) T/C (ST6) FO valve *Select either A or B FO injection	,	11022IC THIS	_	151694-18450	,	1	Δ	1470kW						
FO injection pump T/C (TPS61) T/C (ST6) T/C (ST6) FO valve *Select either A or B FO injection		L	_	151693-19300		1	Δ	IMO2 aux. equipment						
T/C (TPS61) T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B FO injection	/C(A140)	Nozzle ring	_	151696-19010		1	Δ	1920kW						
T/C (TPS61) T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B		FO injustion number	(751605 51200)	151696-19060		1	(1	1620kW						
T/C (TPS61) T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B		FO injection pump P&B assembly		(751695-51108) 151695-51103		(8) 8	(As assembly)							
T/C (TPS61) T/C (ST6) T/C (ST6) T/C (A145) FO valve *Select either A or B	FO injection	PAD assembly		151695-5110 <u>5</u> -51401	116,000 1,500	8	-							
T/C (TPS61) T/C (ST6) T/C (A145) FO valve *Select either A or B		O-ring		5-51223	800	16	\triangle							
FO injection	pump	C Tilling		5-51242	1,000	8								
FO injection			-	26450-080122	50	8								
FO injection		Pinion lubrication plug	_	23414-080012	50	8	0							
T/C (ST6) T/C (A145) FO valve *Select either A or B FO injection	-	Nozzle ring	-	151895-19260	Pending	1	Δ	(IMO1) aux. equipment						
T/C (A145) FO valve *Select either A or B FO injection	(11301)	,		,	(11 00 =)	(11301)	(11301)		_	151896-18690	Pending	1	Δ	2560kW (4 sets)
T/C (A145) FO valve *Select either A or B FO injection	T/C	Nozzle ring	_	151896-19380	784,000	1	\triangle	2360kW (4 sets)						
T/C (A145) FO valve *Select either A or B FO injection			_	151896-19400	Pending	1	\triangle	2360kW (2 sets)						
FO valve *Select either A or B FO injection	(310)	Maintenance kit	_	P# being established		1	Δ							
FO valve *Select either A or B FO injection		Gasket	_	P# being established		2	Δ							
FO valve *Select either A or B FO injection		Nozzle ring	_	151893-19010	Pending	1	Δ	IMO2 aux. equipment(2017)						
*Select either A or B 5N330 FO injection	(A145)		_	151893-19110	Pending	1	Δ	IMO2 aux. equipment (2018 \sim)						
*Select either A or B 5N330 FO injection		FO valve assembly	(732658-53200)			(6)	(As assembly)	★Aux. unit (IMO non-complunit only) When changing F Valve Cooling Spec. to Non-						
*Select either A or B 5N330 FO injection	FO!	Nozzle CMP	132658-53250		,	6	(A	cooling Spec. to Non-cooling Spec. ★Main unit (IMO non-comp						
either A or B 5N330 FO injection		FO valve assembly Nozzle CMP	132654-53250	(732654-53101) 132654-53110		(6) 6	(As assembly)	unit only) When changing F Valve Cooling Spec. to Non-						
5N330 FO injection	either A or		-	43530-001780	460	12	J.,	cooling Spec. When the use of existing FC						
FO injection	В	Closing joint/cap nut	_	23821-080001	220	12	ОВ	valve cooling system (with removing cooling pipe) be continued.						
		Packing	132654	l ŀ-11771	1,000	6								
		O-ring		000850	470	6	0							
		O-ring		000750	990	6								
pump	O injection		_	23887-120002	160	6								
	pump	Pinion lubrication plug	_	23415-120000	50	6	0							
Suction valve		Suction valve (SUH)	132654-11122	132654-11111	74,400	12	Δ	When changed from nimonic item, valve head clearance needs be changed: 0.9→0.6						
		Stem seal	132653	<u> </u> 3-11580	2,000	12		changed, 0.5 /0.0						

O : Needs be replaced

List in D | List | C | D | List | C | D | List | C | D |

A : To be replaced upo

Modification Parts List to Comply with SOx Regulation (3/8)

▲: To be replaced upon next maintenance

lack Triangle: To be replaced upon next maintenance opportunity \triangle : Re-usable (& to be replaced upon next opportunity)

	Parts to be			Parts	s NO.	Estimated	Q'ty	To be			
Engine model	Modified		Names of Parts	Existing parts	Replacement parts	price [JPY/pc.]	required [pc./eng.]	replaced or not	Remarks		
		FO	valve assembly	(732658-53200)	(732658-53100)	(161,000)	(8)	(As assembly)	★Aux. unit (IMO non-compli unit only) When changing F		
		П	Nozzle CMP	132658-53250	132658-53000	44,300	8	OA	Valve Cooling Spec. to Non- cooling Spec.		
	FO valve	FO	valve assembly	(732654-53200)	(732654-53101)	(161,000)	(8)	(As assembly)	★Main unit (IMO non-compl unit only) When changing F		
	*Select		Nozzle CMP	132654-53250	132654-53110	46,500	8	OA	Valve Cooling Spec. to Non- cooling Spec.		
	either A or	Clo	sing joint/cap nut	_	43530-001780	460	16	ОВ	When the use of existing FO valve cooling system (with		
001220	В	Cio	sing joint/cap nut	-	23821-080001	220	16	ОВ	removing cooling pipe) be continued.		
8N330		Pac	cking	132654	-11771	1,000	8				
		O-r	ring	24326-	000850	470	8	0			
		O-ring		24316-	000750	990	8				
	FO injection	Ī		_	23887-120002	160	8				
	pump	Pini	ion lubrication plug	_	23415-120000	50	8				
	Suction valve	Suc	ction valve (SUH)	132654-11122		74,400	16	Δ			
		Ste	em seal	132653	-11580	2,000	16				
	FO	valve assembly	(753605-53202)	(753605-53113)	(87,300)	(6)	(As assembly)	When changing from FO val			
	FO valve		Nozzle CMP	153605-53250	153605-53060	30,500	6	OA	cooling spec. to non-cooling spec. (with removing cooling		
	*Select either A or	*Select either A or				_	43530-001760	240	12		When continuing existing FC
			Clos	sing joint /cap nut	_	23821-060001	170	12	ОВ	valve cooling spec. (with	
	В	<u></u>	1.	151605					removing cooling pipe)		
		-	cking	151605		230	6				
		_	ring	24326-		410	6	0			
		_	ring		000710	910	6				
		Nozz	zle sleeve replacement kit	_	753605-11490	34,000	6	0			
			Nozzle sleeve	153605-11770	153604-11771	30,500	6	(Rpt kit parts)	In the speed of toward		
	Nozzlo		Packing	153605	-11760	Pending	6	(Rpt kit parts)	In the case of tapered nozzle spec.:		
	sleeve	Nozzle sleeve		Packing	151605	-11790	230	6	(Rpt kit parts)	' '	
			sieeve		O-ring	24326-	000750	410	6	(Rpt kit parts)	(w/fire protection→w/o
								O-ring	24316-	000710	910
	O-ring		24316-	000600	830	12	(Rpt kit parts)				
		ΙÌ						` ' '			
		Nozz	le sleeve replacement kit	_	753604-11210	108.000	6	\cap			
		Nozz	zle sleeve replacement kit	- 153604-11850	753604-11210 153604-11790	· ·	6	(Rpt kit parts)			
		Nozz	Nozzle sleeve	153604-11850	153604-11790	Pending	6	(Rpt kit parts)			
6N280	Nozzle	Nozz	Nozzle sleeve Packing	153604-11850 153604	153604-11790 -11870	Pending 2,500	6 6	(Rpt kit parts) (Rpt kit parts)	For indirect cooling spec		
6N280	Nozzle sleeve	Nozz	Nozzle sleeve Packing Packing	153604-11850 153604 151605	153604-11790 11870 11790	Pending 2,500 230	6 6 6	(Rpt kit parts) (Rpt kit parts) (Rpt kit parts)	For indirect cooling spec.		
6N280		Nozz	Nozzle sleeve Packing Packing O-ring	153604-11850 153604 151605 24326-	153604-11790 11870 11790 000750	Pending 2,500 230 410	6 6 6	(Rpt kit parts) (Rpt kit parts) (Rpt kit parts) (Rpt kit parts)	For indirect cooling spec.		
6N280		Nozz	Nozzle sleeve Packing Packing O-ring O-ring	153604-11850 153604 151605 24326- 24316-	153604-11790 11870 11790 000750 000710	Pending 2,500 230 410 910	6 6 6 6	(Rpt kit parts)	For indirect cooling spec		
6N280			Nozzle sleeve Packing Packing O-ring O-ring O-ring	153604-11850 153604 151605 24326- 24316- 24316-	153604-11790 -11870 -11790 000750 000710 000600	Pending 2,500 230 410 910 830	6 6 6 6 6	(Rpt kit parts)	For indirect cooling spec		
6N280		FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump	153604-11850 153604 151605 24326- 24316- 24316- (753605-51304)	153604-11790 11870 11790 000750 000710 000600 (753605-51108)	Pending 2,500 230 410 910 830 (395,000)	6 6 6 6 6 12 (6)	(Rpt kit parts)			
6N280		FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring	153604-11850 153604 151605 24326- 24316- 24316- (753605-51304) 153605-51141	153604-11790 -11870 -11790 000750 000710 000600 (753605-51108) 153605-51103	Pending 2,500 230 410 910 830 (395,000) 167,000	6 6 6 6 6 12 (6) 6	(Rpt kit parts)	N280L-N		
6N280		FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605	153604-11790 -11870 -11790 000750 000710 000600 (753605-51108) 153605-51103 -51392	Pending 2,500 230 410 910 830 (395,000) 167,000	6 6 6 6 6 12 (6) 6	(Rpt kit parts) (As assembly)	N280L-N Models having "N" at the		
6N280		FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605	153604-11790 -11870 -11790 000750 000710 000600 (753605-51108) 153605-51103 -51392 -51223	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800	6 6 6 6 12 (6) 6 6	(Rpt kit parts)	N280L-N		
6N280		FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000	6 6 6 6 12 (6) 6 6 12 6	(Rpt kit parts) (As assembly)	N280L-N Models having "N" at the		
6N280	sleeve	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104)	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204)	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000)	6 6 6 6 12 (6) 6 6	(Rpt kit parts) (As assembly)	N280L-N Models having "N" at the		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104) 153604-51102	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000)	6 6 6 6 12 (6) 6 6 12 6	(Rpt kit parts) (As assembly)	N280L-N Models having "N" at the end		
6N280	sleeve	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104)	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000)	6 6 6 6 12 (6) 6 6 12 6 (6)	(Rpt kit parts) (As assembly)	N280L-N Models having "N" at the end N280L-V		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump P&B assembly	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104) 153604-51102	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202 -51392	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000) 122,000	6 6 6 6 12 (6) 6 6 12 6 (6) 6	(Rpt kit parts) (As assembly)	N280L-N Models having "N" at the end N280L-V Models having "V" at the		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104) 153604-51102 153605	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202 -51392 -51392 -513604-51202	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000) 122,000 1,000	6 6 6 6 12 (6) 6 6 12 6 (6) 6	(Rpt kit parts) (As assembly) A (As assembly)	N280L-N Models having "N" at the end N280L-V		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump P&B assembly	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104) 153604-51102 153604 153604 153604	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202 -51392 -51392 -513604-51202	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000) 122,000 1,000 1,500	6 6 6 6 12 (6) 6 6 12 6 (6) 6 6 6	(Rpt kit parts) (As assembly) A (As assembly)	Models having "N" at the end N280L-V Models having "V" at the		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump P&B assembly O-ring O-ring O-ring O-ring O-ring O-ring	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104) 153604-51102 153604 153604 153604	153604-11790 -11870 -11790 000750 000710 000600 (753605-51108) 153605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202 -51392 -51401 -51223 -51242	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000) 1,22,000 1,500 800 1,000 1,500	6 6 6 6 6 12 (6) 6 6 6 6 6 6 6 6 6 12 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (As assembly) (As assembly)	N280L-N Models having "N" at the end N280L-V Models having "V" at the		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump P&B assembly	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605-51141 153605 153605 (753604-51104) 153604-51102 153604 153604 153605 153605	153604-11790 -11870 -11790 000750 000710 000600 (753605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202 -51392 -51401 -51223 -51223 -51401 -51223 -51242 26450-080122	Pending 2,500 230 410 910 830 (395,000) 1,000 800 1,000 (395,000) 1,22,000 1,000 1,500 800 1,000 50	6 6 6 6 6 12 (6) 6 6 (6) 6 6 6 6 6 6 6 6 6 6 7 7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	(Rpt kit parts) (As assembly) A (As assembly)	N280L-N Models having "N" at the end N280L-V Models having "V" at the		
6N280	sleeve FO injection	FO	Nozzle sleeve Packing Packing O-ring O-ring O-ring injection pump P&B assembly O-ring injection pump P&B assembly O-ring O-ring O-ring O-ring O-ring O-ring	153604-11850 153604 151605 24326- 24316- (753605-51304) 153605- 153605 153605 (753604-51104) 153604-51102 153604 153605 153604 153605 153605	153604-11790 -11870 -11790 000750 000710 000600 (753605-51108) 153605-51103 -51392 -51223 -51242 (753604-51204) 153604-51202 -51392 -51401 -51223 -51242	Pending 2,500 230 410 910 830 (395,000) 167,000 1,000 800 1,000 (395,000) 1,22,000 1,500 800 1,000 1,500	6 6 6 6 6 12 (6) 6 6 6 6 6 6 6 6 6 12 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (As assembly) (As assembly)	N280L-N Models having "N" at the end N280L-V Models having "V" at the		

O : Needs be replaced

Modification Parts List to Comply with SOx Regulation (4/8)

▲ : To be replaced upon next maintenance opportunity
△ : Re-usable (& to be replaced upon next opportunity)

Engine			1	• •				replaced upon next opport
model	Parts to be Modified	Names of Parts	Parts Existing parts	Replacement parts	Estimated price [JPY/pc.]	Q'ty required [pc./eng.]	To be replaced or not	Remarks
		FO valve assembly	(753605-53202)	(753605-53113)	(87,300)	(8)	(As assembly)	When changing from FO valv
	FO valve	Nozzle CMP	153605-53250	,	, ,	` ,		cooling spec. to non-cooling
		NOZZIE CMP	153605-53250	153605-53060	30,500	8	OA	spec.
	*Select		_	43530-001760	240	16	○ D	When continuing existing
	either A or	Closing joint/cap nu	_	23821-060001	170	16	⊖В	FO valve cooling spec. (v
	В	Packing	151605	5-11790	230	8		removing cooling pipe)
		O-ring		000750	410	8	0	
		O-ring		000710	910	8	1	
		Nozzle sleeve rpt kit		753605-11490	34,000	8	0	
		Nozzle sleeve	153605-11770	153604-11771	30,500	8	(Rpt kit parts)	
	Nozzle	Packing	153605	-11760	Pending	8	(Rpt kit parts)	For tapered nozzle spec.
	sleeve	Packing		5-11790	230	8	(Rpt kit parts)	. , , .
	Siceve	O-ring		000750	410	8		fire protection)
		O-ring		000710	910	8	(Rpt kit parts)	
		O-ring		000600	830	16	(Rpt kit parts)	
		Nozzle sleeve rpt kit Nozzle sleeve		753604-11210	108,000	8	(Rpt kit parts)	
		Packing		<u>153604-11790</u> -11870	Pending 2,500	8	(Rpt kit parts)	
8N280	Nozzle	Packing		5-11790	2,300	8		For indirect cooling spec.
	sleeve	O-ring		000750	410	8	(Rpt kit parts)	ir or maneet cooming spee.
		O-ring		000710	910	8	(Rpt kit parts)	
		O-ring		000600	830	16	(Rpt kit parts)	
		FO injection pump		(753605-51108)	(395,000)	(8)	(As assembly)	
		P&B assembly		153605-51103	167,000	8		N280L-N
				5-51392	1,000	8	Δ	Engine models having "N
		O-ring		5-51223	800	16		at the end
				5-51242	1,000	8		
	FO injection	FO injection pump	,	(753604-51204)	(395,000)	(8)	(As assembly)	
	pump	P&B assembly		153604-51202 5-51392	1,000	8	-	N280L-V
				I-51401	1,500	8	Δ	Engine models having "V
		O-ring		5-51223	800	16		at the end
				5-51242	1,000	8	1	
			_	26450-080122	50	8		
		Pinion lubrication plug	_	23414-080012	50	8		
	Suction	Suction valve (SUH)	153605-11122	153605-11111	55,800	16	Δ	When nimonic suction va
	valve	Stem seal		5-11580	2,200	16		was changed.
		FO valve assembly		(751605-53103)	(85,800)	(6)	(As assembly)	When changing from FO valve
	FO valve	Nozzle CMP	151602-53000	151605-53080	23,800	6	OA	cooling spec. to non-cooling spe
		Closing joint/cap nu	-	43530-001760	240	12	ОВ	
	*Select	Closing joint/cap nu	-	43530-001760 23821-060001	240 170	12 12	ОВ	valve cooling spec.
	either A or	Closing joint/cap nu Packing	_				ОВ	valve cooling spec.
			151605	23821-060001	170 230 410	12	○B	valve cooling spec.
	either A or	Packing O-ring O-ring	151605 24326- 24316-	23821-060001 5-11790 000750 000710	170 230 410 910	12 6 6 6	0	valve cooling spec.
	either A or	Packing O-ring O-ring Nozzle sleeve rpt kit	151605 24326- 24316-	23821-060001 5-11790 000750 000710 753605-11490	170 230 410 910 34,000	12 6 6 6 6	0	valve cooling spec.
	either A or	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve	151605 24326- 24316- - 153605-11770	23821-060001 5-11790 000750 000710 753605-11490 153604-11771	170 230 410 910 34,000 30,500	12 6 6 6 6 6	(Rpt kit parts)	valve cooling spec.
	either A or	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing	151605 24326- 24316- - 153605-11770 153605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760	170 230 410 910 34,000 30,500 Pending	12 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change
	either A or	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing	151605 24326- 24316- - 153605-11770 153605 151605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790	170 230 410 910 34,000 30,500 Pending 230	12 6 6 6 6 6 6 6	(Rpt kit parts) (Rpt kit parts) (Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o
	either A or	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring	151605 24326- 24316- - 153605-11770 153605 151605 24326-	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750	170 230 410 910 34,000 30,500 Pending 230 410	12 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle
	either A or	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing	- 151605 24326- 24316- - - 153605-11770 153605 151605 24326- 24316-	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790	170 230 410 910 34,000 30,500 Pending 230	12 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o
	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring	151605 24326- 24316- - 153605-11770 153605 151605 24326- 24316- 24316-	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710	170 230 410 910 34,000 30,500 Pending 230 410 910	12 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o
	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring	151605 24326- 24316- - 153605-11770 153605 151605 24326- 24316- 24316- - 153604-11850	23821-060001 5-11790 000750 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790	170 230 410 910 34,000 30,500 Pending 230 410 910 830	12 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o
	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve	151605 24326- 24316- - 153605-11770 153605 151605 24326- 24316- 24316- - 153604-11850	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 11870	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection)
	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing	151605 24326- 24316- 153605-11770 153605 151605 24326- 24316- 24316- 153604-11850 153604	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11790 000750 000710 000600 753604-11210 153604-11790 5-11790	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection)
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring O-ring	151605 24326- 24316- - 153605-11770 153605 151605 24326- 24316- 24316- - 153604-11850 153604 151605 24326-	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 5-11790 000750	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection)
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring O-ring O-ring O-ring	151605 24326- 24316- - 153605-11770 153605 151605 24326- 24316- - 153604-11850 153604 151605 24326- 24326-	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 11870 5-11790 000750 000750 000750	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection)
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring	151605 24326- 24316- - 153605-11770 153605 151605 24326- 24316- 24316- - 153604-11850 153604 151605 24326- 24316- 24316-	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 153604-11790 000750 000750 000750 000710 000750	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection)
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 153604-11790 000750 000750 000710 000600 (751604-51204)	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec.
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 5-11790 000750 000750 000750 (751604-51204) 151604-51202	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 5-11790 000750 000710 000750 000710 000600 (751604-51204) 151604-51202 1-51401	170 230 410 910 34,000 30,500 Pending 230 410 910 830 Pending 2,500 230 410 910 830 Pending 120,000 1,500	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "N
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring	151605 24326- 24316 153605-11770 153605 151605 24326- 24316 153604-11850 153604 151605 24326- 24316- (751604-51104) 151604-51102 153604 153605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 5-11790 000750 000750 000750 (751604-51204) 151604-51202	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V
6N260	either A or B	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring FO injection pump P&B assembly O-ring		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11290 5-11790 000750 000710 000600 (751604-51204) 151604-51202 151604-51202 151604-51202	170 230 410 910 34,000 30,500 Pending 230 410 910 830 Pending 2,500 230 410 910 830 Pending 120,000 1,500	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (Apt kit parts) (Apt kit parts) (Apt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly Pinion lubrication plug FO injection pump		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11790 000750 000710 000600 753604-11210 153604-11790 -11870 5-11790 000750 000710 000600 (751604-51204) 151604-51202 1-51401 5-51223 5-51242 26450-080122 23414-080012 (751605-51107)	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000 50 (390,000)	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring O-ring P&B assembly Pinion lubrication plug		23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 -11870 5-11790 000750 000710 000600 (751604-51204) 1551223 5-51242 26450-080122 23414-080012 (751605-51107)	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 10,000 1,500 800 1,000 50 50 (390,000) 126,000	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly Pinion lubrication plug FO injection pump	- 151605 24326- 24316- - 153605-11770 153605-11770 153605-15106 24326- 24316- - 153604-11850 153604-11850 24326- 24316- (751604-51104) 151604-51102 153605 153605 - (751605-51304) 151605-51304)	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 -11790 000750 000710 000600 (751604-51204) 151604-51202 -51401 5-51223 5-51242 26450-080122 23414-080012 (751605-51102 5-51392	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 230 410 910 830 Pending 120,000 1,500 800 1,000 50 (390,000) 1,26,000 1,000	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (Apt kit parts) (Apt kit parts) (As assembly)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for GN model, needs no
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly Pinion lubrication plug FO injection pump	- 151605 24326- 24316- - 153605-11770 153605-11770 153605-15105 24326- 24316- 24316- 153604-11850 153604-11850 24326- 24316- 24316- (751604-51104) 151604-51104 153605 153605 - (751605-51304) 151605-51141 151605-51141	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11760 5-11790 000750 000710 000600 753604-11210 153604-11790 000750 000710 000600 (751604-51204) 151604-51202 5-51401 5-51223 5-51242 26450-080122 23414-080012 (751605-51107) 151605-51102 5-51392	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000 50 50 (390,000) 1,500 1,000 1,500	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for GN model, needs no replacement, (because o
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly Pinion lubrication plug FO injection pump P&B assembly	- 151605 24326- 24316 153605-11770 153605 151605 24326- 24316- 24316 153604-11850 153604 151605 24326- 24316- (751604-51104) 151604-51104 153605 153605 1- (751605-51304) 151605-51141 153605 153605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11790 000750 000710 000600 753604-11210 153604-11790 -11870 5-11790 000750 000710 000600 (751604-51204) 151604-51202 -51401 5-51223 5-51223 (751605-51107) 151605-51102 5-51392 -5-51401 5-51223	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000 50 (390,000) 126,000 1,500 800 1,000 800	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (Apt kit parts) (Apt kit parts) (As assembly)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for GN model, needs no replacement, (because o common use of Bunker A
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly Pinion lubrication plug FO injection pump P&B assembly	- 151605 24326- 24316 153605-11770 153605 151605 24326- 24316 153604-11850 153604 151605 153604 151605-51141 153605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11790 000750 000710 000600 753604-11210 153604-11790 -11870 5-11790 000750 000710 000600 (751604-51204) 151604-51202 -51401 5-51223 5-51242 23414-080012 (751605-51107) 151605-51102 5-51392 -551401 5-51223 5-51223 5-51242	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000 50 (390,000) 126,000 1,000 1,500 800 1,000 1,500	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (Apt kit parts) (Apt kit parts) (As assembly)	valve cooling spec. (with removing cooling pipe For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for GN model, needs no replacement, (because o
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring O-ring O-ring FO injection pump P&B assembly Pinion lubrication plug FO injection pump P&B assembly	- 151605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11790 000750 000710 000600 753604-11210 153604-11790 -11870 5-11790 000750 000710 000600 (751604-51204) 151604-51202 1-51401 5-51223 5-51242 26450-080122 23414-080012 (751605-51102) 1-51605-51102 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401 1-51223 1-51401	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000 50 (390,000) 1,500 800 1,000 1,500	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (Apt kit parts) (Apt kit parts) (As assembly)	valve cooling spec. (with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for GN model, needs no replacement, (because o common use of Bunker A
6N260	either A or B Nozzle sleeve	Packing O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve Packing Packing O-ring O-ring O-ring Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Nozzle sleeve rpt kit Packing O-ring O-ring O-ring O-ring O-ring O-ring O-ring P&B assembly O-ring Pinion lubrication plug FO injection pump P&B assembly O-ring O-ring O-ring O-ring O-ring	- 151605	23821-060001 5-11790 000750 000710 753605-11490 153604-11771 5-11790 000750 000710 000600 753604-11210 153604-11790 -11870 5-11790 000750 000710 000600 (751604-51204) 151604-51202 -51401 5-51223 5-51242 23414-080012 (751605-51107) 151605-51102 5-51392 -551401 5-51223 5-51223 5-51242	170 230 410 910 34,000 30,500 Pending 230 410 910 830 108,000 Pending 2,500 230 410 910 830 Pending 120,000 1,500 800 1,000 50 (390,000) 126,000 1,000 1,500 800 1,000 1,500	12 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	(Rpt kit parts) (Apt kit parts) (As assembly)	(with removing cooling pipe) For tapered nozzle spec.:Change (w/fire protection→w/o fire protection) For indirect cooling spec. 6N260L-V Engine models having "V at the end For 6N260L-GN only *6N260L-N, excepting for GN model, needs no replacement, (because o common use of Bunker A

Modification Parts List to Comply with SOx Regulation (5/8)

- O : Needs be replaced
- ▲ : To be replaced upon next maintenance opportunity
 △ : Re-usable (& to be replaced upon next opportunity)

Engine	Parts to be			Parts	NO.	Estimated	Q'ty	To be	
model	Modified		Names of Parts	Existing parts	Replacement parts	price [JPY/pc.]	required [pc./eng.]	replaced or not	Remarks
		No.	zzle sleeve rpt kit		750633-11450	41,000	6	0	
			Nozzle sleeve	150633-11670	150633-11650	33,600	6	(Rpt kit parts)	
	Nozzle		O-ring	24326-		250	12	(Rpt kit parts)	
	sleeve		Packing	150633		1,420	6	(Rpt kit parts)	
			Packing	137600		360	6	(Rpt kit parts)	
		FO	injection pump		(750633-51102)	(226,000)	(6)	(As assembly)	
			P&B assembly	150633-51600		95,800	6	, , , , ,	
			O-ring	153604		1,500	6		
	FO injection		O-ring	146685	5-51830	1,200	12	Δ	
	pump		O-ring	146685	-51810	1,300	6		
		Pini	on lubrication plug	_	23887-120002	160	12		
6EY22(A)L		Pinio	on lubrication packing	_	23415-120000	50	12	0	
OEYZZ(A)L	T/C	t							
	(A135)	No	zzle ring	_	150634-19030	Pending	1	Δ	ALW(1370,1300kW)
	T/C	Na		_	150634-19360	Pending	1	Δ	ALW(1180,1100kW)
	(TPS52)	INO	zzle ring	_	150634-19320	Pending	1	Δ	ALW(1020-880kW)
	T/C (A130)	No	zzle ring	-	150634-19070	Pending	1	Δ	LW(1080-880kW)
	T/C (TPS48)	No	zzle ring	1	150634-19260	Pending	1	Δ	LW(1080-880kW)
				_	150634-19690	Pending	1	Δ	ALW(1370kW)[~2019/2]
	T/C	No	zzle ring	_	150634-19710	Pending	1	Δ	ALW(\sim 1300kW)[\sim 2019/2
(1	(MET22)		zzie riilg	_	150634-19650	Pending	1	Δ	ALW(1100-1370kW) 【2019/3~】
		FO	injection pump	(746623-51102)	(746623-51202)	(200,000)	(6)	(As assembly)	
			P&B assembly	146623-51102	146623-51202	56,600	6		
	FO injection		O-ring	146673		1,000	6	Δ	
	pump		O-ring	146673		930	12		
	FF		O-ring	146673		970	6		
		_	on lubrication plug	_	23887-120002	160	12	0	
	=	Pinio	on lubrication packing	_	23415-120000	50	12	_	
	T/C	N		_	146621-19220	Pending	1	Δ	440-500kW
	(TPS44) IMO2 : LW	INO.	zzle ring	_	146621-19230	Pending	1	Δ	550-615kW
	T/C (MET18)	No	zzle ring	_	146621-19330	480,000	1	Δ	660-800kW
6EY18(A)L	IMO2 : ALW	110	zzie imig	-	146621-19340	480,000	1	Δ	455-615kW
	T/C			_	146623-19330	480,000	1	Δ	680-800kW
	(MET18)	No	zzle ring	_	146623-19340	480,000	1	Δ	615-660kW
	IMO1:		- 3	_	146623-19350	'	1	Δ	455-550kW
	1000min-1 T/C	1				_			
	(MET18)	1		_	146623-19330	'	1	Δ	680-800kW
	IMO1:	No	zzle ring	_	146623-19340	480,000	1	Δ	615-660kW
	900min-1	1		_	146623-19350	480,000	1	Δ	455-550kW
	T/C			-	146625-19330	480,000	1	Δ	615kW
	(MET18)	No	zzle ring	_	146625-19340	480,000	1	Δ	450-500kW
	IMO1:	"	inig	_		,			
	720/750min-1	-		-	146625-19350	480,000	1	Δ	400kW
6EY18(A)L		FO	injection pump	,	(746623-51103)	(215,000)	(6)	(As assembly)	
Low Sulfur	FO injection		P&B assembly		146623-51103	· ·	6		
Bunker C	pump		O-ring	146673		1,000	6	A	
(3-15cSt)			O-ring	146673		930	12		
· ·			O-ring	146673	-51831	970	6		

Modification Parts List to Comply with SOx Regulation (6/8)

O : Needs be replaced

▲ : To be replaced upon next maintenance opportunity

△ : Re-usable (& to be replaced upon next opportunity)

Low Sulfur Bunker C (3-15cSt) PO injection pump	For engine model Parts to be Modified Names of Parts Existing parts Replacement parts price (pz/ypc.) required (pc./eng.) replaced or not	e models having e end e models having
Mozale Color Part Mozale Color Part Mozale Severa Part Mozale Color Part Mozale Severa P	Modified Modified Existing parts Replacement parts [1pY/pc.] [replaced or [pc./eng.] not not	e models having e end e models having
Polyage Poly	FO valve assembly (747673-53221) (747673-53212) (102,000) (6) (As assembly) (Nozzle CMP 147673-53700 147673-53580 11,100 6 △	e end e models having
FO valve assembly (74/673-53221) (10/20-000) (6) (as assembly Nozzie Cell 14/673-53221) (10/20-000) (6) (as assembly Nozzie Cell 14/673-53320) (14/673-53350) (11/00) (a) (b) (as assembly Control 15/673-51381) (10/20-000) (b) (as assembly Control 14/673-53320) (14/673-53411) (10/20-000) (b) (as assembly Control 14/673-53411) (10/20-000) (b) (as assembly Control 14/673-53411) (10/20-000) (c) (as assembly Control 14/673-14/671) (c)	FO valve assembly (747673-53221) (747673-53212) (102,000) (6) (As assembly) Nozzle CMP	e end e models having
Nozie CPP 1/4673-53700 1/4673-53890 13,100 6	Nozzle CMP	e end e models having
FO valve FO valve FO valve FO valve assembly Coring	FO valve FO valve FO valve O-ring	e end e models having
FO valve FO valve FO valve FO valve assembly Coring	FO valve O-ring	e end e models having
FO valve	O-ring	e models having
Po Valve assembly (747673-33331) (747673-33431) (102,000) (6) (6) (6) (6) (6) (6) (7	FO valve assembly (747673-53131) (747673-53411) (102,000) (6) (As assembly) Nozzle CMP	
No. Part P	FO valve assembly (747673-53131) (747673-53411) (102,000) (6) (As assembly)	
Nozzie gleeve pt kt	Nozzle CMP	
O-ring	O-ring 151673-51381 1,100 6 △ O-ring 146673-53900 630 6 △ Nozzle sleeve rpt kit - 747673-11450 69,900 6 ○ Nozzle sleeve 147672-11870 147673-11880 Pending 6 (Rpt kit parts) For engin O-ring 24326-000400 250 12 (Rpt kit parts) "W" at th Packing 147643-11870 680 6 (Rpt kit parts) "W" at th Nozzle sleeve rpt kit - 747673-11460 69,900 6 ○ Nozzle sleeve 147673-11870 147673-11890 Pending 6 (Rpt kit parts) For engin Nozzle sleeve 147673-11870 147673-11890 Pending 6 (Rpt kit parts) For engin	
Nozzie sleever pt. Nozzie sleeve pt. Nozzie sleever pt. Nozzie sleev	O-ring	
Nozzie sleeve pt kit	Nozzle sleeve rpt kit	
Nozzie sleeve pt kit	Nozzle sleeve rpt kit	
Nozzie sleeve 147672-11870 147673-11880 Pending 6 Get ks parts) For engine models have Packing 147643-11870 680 6 Get ks parts) W" at the end Nozzie sleeve 147673-11870 430 60 6 Get ks parts) W" at the end Nozzie sleeve 147673-11870 447673-11870 680 6 Get ks parts) W" at the end Nozzie sleeve 147673-11870 147673-11870 680 6 Get ks parts) For engine models have For engine models Nozzie sleeve 147673-11870 147673-11870 680 6 Get ks parts) For engine models Nozzie sleeve 147673-11870 147673-11870 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 147673-11870 147673-11870 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 147673-11870 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 147673-11870 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve 147673-11870 Get ks parts For engine models Nozzie sleeve	Nozzle sleeve	
O-ring	O-ring 24326-000400 250 12 (Rpt kit parts) For engin	
O-ring	O-ring 24326-000400 250 12 (Rpt kit parts) For engin	
Packing	Packing	
Processor 1,476-3-11850	Packing	e end
Nozzie sleeve pt kit	Nozzle sleeve rpt kit	5 6.14
Nozzie sleeve pt kit	Nozzle sleeve rpt kit	
No.22 c sleeve 147673-11870 147673-11900 0 0 (gas tis parts) 0 For regine models have provided in the parts 147673-11870	Nozzle Sleeve 147673-11870 147673-11890 Pending 6 (Rpt kit parts) For engin	
Selevine Co-ring 24326-000400 250 12 (Rent legarity) W" and "N" at the end packing 147643-11870 880 6 (Bott Asparts) Work and "N" at the end "N" at the end "N" and "N" at the end "N" at the end "Nozzle sleeve" 147673-11850 147673-11800 11,200 6 (Rent legarity) Work and "N" at the end "Nozzle sleeve" 147673-11850	Nozzle O-ring 24326-000400 250 12 (Rpt kit parts) "V" and "	
Silecyal Compare Com		e models having
Packing		N" at the end
Packing	SIGNIA	
Nozzle sleeve rpt kit	bN21(A)L Packing 147643-11870 680 6 (Rpt kit parts)](NOX Reg	ulation compliar
Nozzle sleeve rpt kit	Packing 137600-53091 360 6	
Nozzle sleeve 14/673-11850 14/673-11850 11,200 6 Cept ke pares) Nor again emodels hav Oring 24326-00400 250 12 Cept ke pares) Nor at the end Oring 146673-11870 470 6 Cept ke pares) Nor at the end Oring 137600-53091 360 6 Cept ke pares) Nor at the end Oring 146673-51801 (747673-51202) (26,800 6 Cept ke pares) Nor at the end Oring 146673-51812 1,000 6 Oring 146673-51812 1,000 12 Oring 146673-51812 1,000 12 Oring 146673-51812 1,000 Oring 146673-51812 1,000 Oring 146673-51812 1,000 Oring 146673-51812 1,000 Oring 146673-51813 Oring Oring 146673-51813 Oring Oring 146673-51813 Oring Oring 146673-51813 Oring Oring Oring 146673-51813 Oring Or		
Pounce P		
Pounce P	Nozzle sleeve 147673-11850 147673-11860 11,200 6 (Rpt kit parts) For engin	e models having
Packing		
Packing		
FO injection pump FO injectio		:ompliant)
FO injection pump FO injectio		
FO injection Power Power		
FO injection pump		
FO injection pump	P&B assembly 147673-51102 147673-51202 62.800 6	
FO Injection Pump		
Pump O-Fing 1466/3-51821 930 12	IFO injection	
Dump	1 ² 10-ring 1466/3-51821 930 12	
Pinion lubrication plug	numn	
Price Internation packing		
Suction Suct	Pinion lubrication plug - 23887-120002 160 12 -	
Suction valve 147673-11740 147673-11110 23,800 12	Pinion lubrication packing — 23415-120000 50 12	
Suction Valve Va		2500-
Valve Stem seal 141616-11/51 1,600 12		or over 3500se
No.11(A)L Polinjection pump		
FO injection pump	valve IStem seal	
Poing Past assembly 1/4673-51102 147673-51103 57,800 6		
Poing Past assembly 1/4673-51102 147673-51103 57,800 6	FO injection pump (747673-51106) (747673-51107) (241,000) (6) (As assembly)	
O-ring 146673-51831 930 12 12 12 13 14 14 14 14 14 14 14		
Bunker C (3-15cSt)		
O-ring	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
FO valve assembly	1 ' ' ()-ring 1466/3-518/1 1930 17 1	
FO valve FO	(3-15CSF)	
FO valve FO valve FO valve FO valve FO valve For engine models have For engine mod		
FO valve FO valve FO valve FO valve FO valve For engine models have For engine mod	FO valve assembly (747673-53231) (747673-53201) (102,000) (8) (As assembly)	
FO valve FO valve FO valve O-ring 151673-51381 1,100 8		e models havin
FO valve FO valve FO valve FO valve FO valve assembly (747673-5131) (747673-53411) (102,000) (8) (As assembly Nozzle CMP 147673-53260 147673-53360 11,100 8		
FO Valve assembly	O-ring 1516/3-51381 1,100 8 \(\triangle "V" at the	end:
FO Valve assembly	O-ring 146673-53900 630 8	
Nozzle CMP		
Nozzle sleeve rpt kit		e models having
Nozzle sleeve	1 NO7710 (MP 114 /6 /3-53 /601 14 /6 /3-536001 11 100 8 1 1 1	
Nozzle sleeve rpt kit	O-ring 151673-51381 1 100 8 \ \ N at the	
Nozzle sleeve rpt kit		ulation complian
Nozzle sleeve	0-ring 140073-53900 630 8	. 1
Nozzle sleeve	Nozzle sleeve rpt kit -	
Nozzle sleeve 147673-11870 680 8 (Rpt kit parts) W" at the end		
Nozzle sleeve pt kit		e models havin
Packing		
Nozzle sleeve pt kit		e ena
Nozzle sleeve pt kit — 747673-11460 69,900 8 ○ Nozzle sleeve 147673-11870 147673-11890 Pending 8 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 250 16 (Rpt kit parts) V' and "N''(Indirect 24326-000400 Rpt kit parts) Rpt kit parts) Rpt kit parts	147045 11070 000 8 (Nept int parts)	
Nozzle sleeve		
Nozzle sleeve	Nozzle sleeve rpt kit - 747673-11460 69.900 8 \ \ \ \ \	·
Nozzle sleeve		e modele havia
Sh21(A)L Sleeve O-ring 24.326-000400 250 16 (Rpt kit parts) V'' and "N"(Indirect Packing 137600-53091 360 8 (Rpt kit parts) Cooling Spec.) at the e Packing 137600-53091 360 8 (Rpt kit parts) Packing 147673-11470 15,200 8 O-ring 24.326-000400 250 16 (Rpt kit parts) Packing 146673-11850 147673-11860 11,200 8 (Rpt kit parts) Packing 146673-11870 470 8 (Rpt kit parts) Packing 137600-53091 360 8 (Rpt kit parts) Packing 146673-51102 147673-51207 (183,000) (8) (As assembly) Packing 146673-51812 1,000 8 O-ring 146673-51812 1,000 8 O-ring 146673-51821 930 16 O-ring 146673-51821 930 16 O-ring 146673-51821 930 16 O-ring 146673-11400 147673-11110 23,800 16 O-ring 146670-11640 860 16 O-ring D-ring 146670-11640 860 16 O-ring Packing Pack	NO77IP	
Packing	olapus O-ring 24326-000400 250 16 (Rpt kit parts) "V" and "	
Packing 137600-53091 360 8 (Rpt kit parts)	8N21(A)L sieeve Packing 147643-11870 680 8 (Rot kit parts) Cooling S	nec.) at the end
Nozzle sleeve rpt kit		seer, at the cit
Nozzle sleeve		
Nozzle sleeve		·
O-ring		e modele havin
Packing		
Packing 137600-53091 360 8 (Rpt kit parts)		end, (Indirect :
Packing 137600-53091 360 8 (Rpt kit parts)	O-ring 24326-000400 250 16 (Rpt kit parts) "N" at the	nec.)
FO injection pump		/
FO injection pump FO injection	Packing 146673-11870 470 8 (Rpt kit parts) Cooling S	
FO injection pump FO injection	Packing 146673-11870 470 8 (Rpt kit parts) Cooling S Packing 137600-53091 360 8 (Rpt kit parts)	
FO injection pump FO injection pump FO injection pump Pinion lubrication plug Suction valve Stem seal SN21(A)L Low Sulfur Bunker C gump Policy Sunday FO injection pump FO inj	Packing 146673-11870 470 8 (Rpt kit parts) Cooling S Packing 137600-53091 360 8 (Rpt kit parts)	
O-ring	Packing 146673-11870 470 8 (Rpt kit parts) Cooling S Packing 137600-53091 360 8 (Rpt kit parts) FO injection pump (747673-51106) (747673-51207) (183,000) (8) (As assembly)	
O-ring	Packing 146673-11870 470 8 (Rpt kit parts) Cooling Signature Packing 137600-53091 360 8 (Rpt kit parts) FO injection pump (747673-51106) (747673-51207) (183,000) (8) (As assembly) P&B assembly 147673-51102 147673-51202 62,800 8	
Pullip	Packing 146673-11870 470 8 (Rpt kit parts) Cooling State	
C-ring	Packing 146673-11870 470 8 (Rpt kit parts)	
Pinion lubrication packing —	Packing 146673-11870 470 8 (Rpt kit parts) Cooling Standard Cooling Standa	
Pinion lubrication packing —	Packing	
Suction valve Suction valve Suction packing -	Packing 146673-11870 470 8 (Rpt kit parts) Packing 137600-53091 360 8 (Rpt kit parts) Packing 137600-53091 360 8 (Rpt kit parts) FO injection pump (747673-51106) (747673-51207) (183,000) (8) (As assembly) P&B assembly 147673-51102 147673-51202 62,800 8 O-ring 146673-51812 1,000 8 O-ring 146673-51821 930 16 O-ring 146673-51831 970 8 Pinjon lubrication plug 23887-120002 160 16	
Stem seal	Packing 146673-11870 470 8 (Rpt kit parts)	
Stem seal	Packing	
Valve Stem seal 146670-11640 860 16	Packing	or over 3500 s
146670-11640 860 16	Packing	or over 3500 s
SN21(A)L	Packing	or over 3500 s
BN21(A)L Low Sulfur Bunker C (3-15rSt) (3-15rSt) (3-15rSt) (3-15rSt) (3-15rSt) (3-15rSt)	Packing	or over 3500 s
Low Sulfur Bunker C (3-15cSt) PO injection pump	Packing 146673-11870 470 8 (Rpt kit parts) Cooling S	or over 3500 s
Bunker C pump O-ring 146673-51812 1,000 8 O-ring 0-ring 146673-51821 930 16	Packing	or over 3500 s
Bunker C pump O-ring 146673-51821 930 16	Packing	or over 3500 s
(3-15051)	Packing	or over 3500 s
	Packing	or over 3500 s
O-ring 146673-51831 970 8	Packing	or over 3500

Modification Parts List to Comply with SOx Regulation (7/8)

- O : Needs be replaced
- ▲ : To be replaced upon next maintenance opportunity

 △ : Re-usable (& to be replaced upon next opportunity)

								-1					
Engine	Parts to be		Parts	NO.	Estimated	Q'ty	To be						
model	Modified	Names of Parts			price		replaced or	Remarks					
			Existing parts	Replacement parts	[JPY/pc.]	[pc./eng.]	not						
		FO valve assembly	,	(746673-53511)	(102,000)	(6)	(As assembly)						
		Nozzle CMP		146673-53520	11,100	6	\triangle	(A)L-V					
		O-ring	151673		1,100	6	Δ	(-1)= -					
		O-ring	146673		630	6	\triangle						
		FO valve assembly	(746673-53141)	(746673-53111)	(102,000)	(6)	(As assembly)						
	FO valve	Nozzle CMP	146673-53300	146673-53040	9,700	6	\triangle	L-DN,UN,SN					
	10 valve	O-ring	151673	-51381	1,100	6	Δ	AL-HN,DN,UN					
		O-ring	146673	-53900	630	6	Δ						
		FO valve assembly	(746673-53151)	(746673-53121)	(102,000)	(6)	(As assembly)						
		Nozzle CMP	146673-53320	146673-53060	9,700	6	Δ	L-EN					
		O-ring	151673		1,100	6	Δ	AL-SN,EN					
		O-ring	146673	-53900	630	6	Δ						
		Nozzle sleeve rpt kit	_	746674-11480	69,900	6	0						
		Nozzle sleeve		146673-11890	Pending	6	(Rpt kit parts)	※No modification is					
6N18	Nozzle	O-ring		000400	250	12	(Rpt kit parts)	required for -N model,					
	sleeve	Packing		-11870	680	6	(Rpt kit parts)	indirect cooling spec.					
		Packing	137600		360	6	(Rpt kit parts)	engines					
	<u> </u>	FO injection pump	(746673-51107)		(183,000)	(6)	(As assembly)						
		P&B assembly	`	,		` ,	(As assembly)						
			146673-51102		62,800	6							
	FO injection	O-ring		-51812	1,000	6	\triangle						
	pump	pump	pump	pump	pump	-	O-ring	146673		930	12		
		O-ring	146673		970	6							
		Pinion lubrication plug	_	23887-120002	160	12	0						
		Pinion lubrication packing	_	23415-120000	50	12		7:55					
	Suction valve	Suction valve	146673-11120	146673-11110	22,400	12	Δ	Different for over 3500 sec. engines only					
		Stem seal	141616	-11751	1,600	12	Δ	,					
		FO injection pump	(746673-51107)	(746673-51108)	(242,000)	(6)	(As assembly)						
6N18		P&B assembly	146673-51102	146673-51103	53,100	6							
Low Sulfur	FO injection	O-ring		-51812	1,000	6							
Bunker C	pump	O-ring	146673	-51821	930	12	A						
(3-15cSt)		O-ring	146673		970	6							
		Nozzle sleeve rpt kit	_	747643-11450	15,600	6	0						
		Nozzle sleeve		147643-11820	14,400	6	(Rpt kit parts)	Tapered nozzle, sleeve					
		O-ring	152633		450	12	(Rpt kit parts)	cooling spec. should be					
			Packing		-11870	680	6	(Rpt kit parts)	changed to:⇒Non-cooling				
	Nozzle	Packing	137600		360	6	(Rpt kit parts)	sleeve spec.					
	sleeve	Cooling oil bypass parts	-	747643-59500	43000	6							
		Bypass plug	_	147643-59950	44500	6	0	Oil cooling spec. should be					
		Packing	_					changed: ⇒ Cooling oil					
M220			_	23414-170000	50	6	0	bypass parts					
141220		Seal washer	_	153672-59920	360	12	0	Darts different for					
		FO injection pump	(747644-51354)	(747644-51304)	(119,000)	(6)	(As assembly)	Parts different for 3500,7000 sec. engines					
	FO injection	P&B assembly	147644-51602	147644-51103	49,900	6		only.					
	pump	O-ring	141616	-51221	450	6	Δ						
	1	O-ring	141616	-51890	440	6							
		O-ring	134674	-51381	460	6							
	Suction	Suction valve	147644-11121	147644-11140	36,400	12	Δ	Nimonic for 7000 cos cos					
	valve	Stem seal	147644	-11581	980	12	Δ	Nimonic for 7000 sec. spec.					
		FO injection pump	(747644-51354)	(747644-51355)	Pending	(6)	(As assembly)						
M220	T-4	P&B assembly	147644-51602		Pending	6							
Low Sulfur	Injection	O-ring	141616		450	6	_						
Bunker C	pump	O-ring		-51890	440	6	A						
(3-15cSt)	1	O-ring	134674		460	6							
L													

YES-B-5-006 様式1

O : Needs be replaced

Modification Parts List to Comply with SOx Regulation (8/8)

▲ : To be replaced upon next maintenance opportunity ∴ : Re-usable (& to be replaced upon next opportunity)

<u> </u>	1	<u>ا ت. </u>	LIST TO COMP	•		Estimated		To be	eplaced upon next opportunit 						
Engine model	Parts to be Modified		Names of Parts	Parts Existing parts	Replacement parts	price [JPY/pc.]	Q'ty required [pc./eng.]	replaced or not	Remarks						
		FO	valve assembly	(741616-53300)	(741616-53100)	(89,200)	(6)	(As assembly)	Oil cooling separate galler →Non-cooling						
			Nozzle CMP	141616-53000	138658-53060	10,300	6	Δ	Oil cooling separate galler →Non-cooling						
		_	valve assembly Nozzle CMP	(741616-53210) 141616-53030	(741616-53110) 138658-53030	(81,200) 9,000	(6) 6	(As assembly)							
	FO valve	FO valve		valve assembly		(741616-53120)	(81,100)	(6)	(As assembly)	Oil cooling separate galler →Non-cooling					
							Nozzle CMP	141616-53060	139684-53010	9,200	6	Δ	110.1. 0009		
		O-r	ing	141616	5-53900	430	6	Δ	No change for oil cooling bypass, tapered nozzle & indirect cooling spec.						
		Coo	ling oil bypass parts	_	747643-59500	43,000	6	0	Oil cooling separate galler						
			Bypass plug	_	147643-59950	44,500	6	0	spec. ⇒Cooling oil bypass						
			Packing Seal washer		23414-170000	50 360	6 12	0	spec.						
		No:	zzle sleeve rpt kit		153672-59920		6	0	Modification required only fo						
		INO			747643-11450	15,600			tapered nozzle, sleeve coolir						
	Nozzle		Nozzle sleeve		147643-11820	14,400	6	(Rpt kit parts)	spec. (147643-11851) &						
	sleeve		Packing		-11870	680	6	(Rpt kit parts)	engines with head no. 141644-11020, 147643-						
M200			O-ring	152633	-11750	450	12	(Rpt kit parts)	11851(See Parts List, E/#21						
			Packing	137600	-53091	360	6	(Rpt kit parts)	~2645)						
		Noz	zzle sleeve rpt kit	_	741644-11420	46000	6	0	Indirect cooling nozzle						
			Nozzle sleeve		141644-11720	Pending	6		spec., head no. 141644-						
			Packing	147643		680	6	(Rpt kit parts)	11030						
		Dl	O-ring		-11750	450	12	(Rpt kit parts)	Fau ail agaling consusts						
	Plug	Plu	g cking		23887-200002 153672-59970	250 480	12 12	0	For oil cooling separate gallery spec.; pump outle						
		Plu		_	23893-030002	690	12	0	main pipe inlet &						
			king	_	153672-59960	480	12	0	thermometer						
		FO	injection pump	(741646-51353)	(741646-51304)	(127,000)	(6)	(As assembly)	It is not possible to assemble MGO/MDO barr in HFO pump unit.						
			P&B assembly	141646-51601	141646-51104	49,900	6								
	FO injection pump		O-ring	_	134674-51381	460	6								
		pump	pump		Backup ring	_	24372-000390	280	6	Δ					
						Damper ring		141616-51890	440	6					
		Pini	O-ring on lubrication plug		141616-51221 26450-060102	450 50	6 6								
			on lubrication packing	_	23414-060000	50	6	\triangle							
		_	injection pump	(741646-51353)	(741646-51354)	Pending	(6)	(As assembly)							
M200			P&B assembly	141646-51601	141646-51602	Pending	6								
Low Sulfur	FO injection		O-ring	134674	-51381	460	6								
Bunker C	pump	pump		Backup ring		000390	280	6	A						
(3-15cSt)			Damper ring		5-51890	440	6								
		N/-	O-ring	141616	733644 11410	450	6								
		1402	zzle sleeve rpt kit Nozzle sleeve		733644-11410 133644-11620	32200 29,100	6 6	(Rpt kit parts)	1						
			Packing, round		-11750	450	12	(Rpt kit parts)							
			Packing		-53091	360	6	,	Replacement is required						
			Packing, round		-11870	680	6	(Rpt kit parts)	only for nozzle sleeve						
	Nozzle		O-ring		000400	80	6		spec.[133644-11610]						
	sleeve		O-ring		-53360	470	6	(Rpt kit parts)	(4) (5-11-6)						
			Packing A, coupling	152623		530	6	(Rpt kit parts)							
6N165L			Packing B, coupling Seal washer		-59450 -59980	720 480	6 6	(Rpt kit parts) (Rpt kit parts)	IMO2 spec.)						
			O-ring		000160	230	6	(Rpt kit parts) (Rpt kit parts)							
			O-ring		000100	Pending	6	(Rpt kit parts)							
		FO	injection pump		(733670-51112)	(179,000)	(6)	(As assembly)							
			Pump unit	,	133670-51014	Pending	6	Δ	No pinion lubrication hole						
FO inje	FO injection		P&B assembly		133670-51301	25,100	6	A							
	O injection pump	-	-	-	-	-	-		Tappet assembly	133644-51200		19,700	6	A	
	Parrip		Pinion	133670	-51510	3,700	6	_							
	pamp														
Chitc	pamp		O-ring	137679	-51892	480	6	_							
6N165	FO injection	FO	O-ring injection pump	137679 (733644-51101)	(733644-51102)	Pending	(6)								
6N165 Low Sulfur Bunker C		FO	O-ring	137679 (733644-51101)	(733644-51102) 133644-51101										