

Hasegawa

VM / VML - Reciprocating Compressor

Parts Manual

Compliments Of

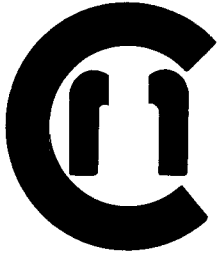


CENTRAL ICE MACHINE COMPANY, INC.

Refrigeration Supplies

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CENTRAL ICE MACHINE COMPANY

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Parts Supply List

Model

VM/VML Compressor

Ver.4.1



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Model

VM Compressor

Ver.4.1

VM3 VM21
VM4 VM31
VM6 VM42
VM8 VM62



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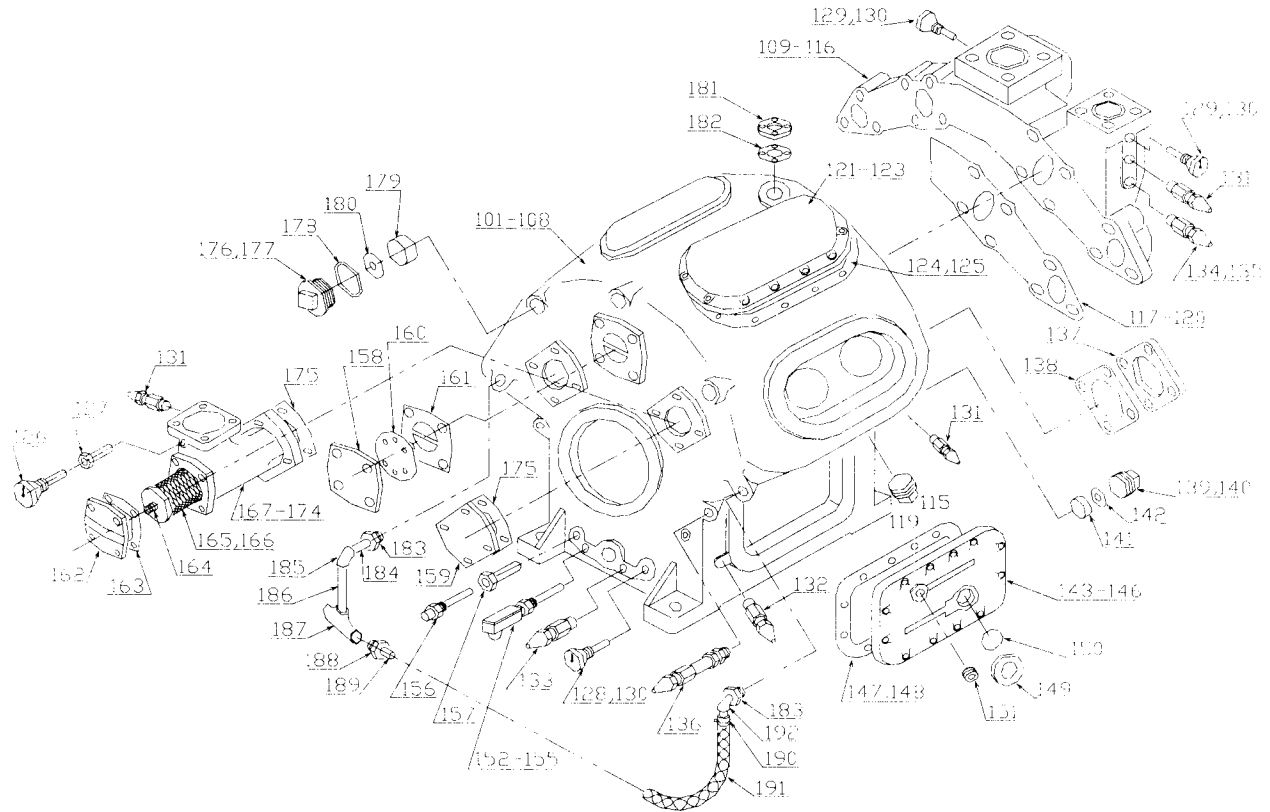


FIG. VMVM1 M1-11-1-1 V1.R4.1

Ref. No.	Parts Name Code	Material	Parts Name	VM								Remarks		
				3	21	4	31	6	42	8	62			
4M101	*****	X	VM3 Case	1										
4M102	*****	X	VM21 Case		1									
4M103	*****	X	VM4 Case			1								
4M104	*****	X	VM31 Case				1							
4M105	*****	X	VM6 Case					1						
4M106	*****	X	VM42 Case						1					
4M107	*****	X	VM8 Case							1				
4M108	*****	X	VM62 Case								1			
4M109	*****	X	VM*3 Discg. Manifold	1										1
4M110	*****	X	VM*21 Discg. Manifold		1									
4M111	*****	X	VM*4 Discg. Manifold			1								
4M112	*****	X	VM*31 Discg. Manifold				1							
4M113	*****	X	VM*6 Discg. Manifold					1						
4M114	*****	X	VM*42 Discg. Manifold						1					
4M115	*****	X	VM*8 Discg. Manifold							1				
4M116	*****	X	VM*62 Discg. Manifold								1			
4M117	15207300		VM*3-21 PK St. NA Discg. MF	1	1									1
4M118	15207400		VM*4-31 PK St. NA Discg. MF			1								Sold as Set
4M119	15207500		VM*6-42 PK St. NA Discg. MF					1	1					Sold as Set
4M120	15207600		VM*8-62 PK St. NA Discg. MF							1	1			Sold as Set
4M121	*****	X	VM*4-31-3-21 Cyl. Cvr. A	3	3	3	3							Name Letter Reverse with B
4M122	*****	X	VM*4-31-3-21 Cyl. Cvr. B					1	1					Name Letter Reverse with A
4M123	*****	X	VM*6-42-3-62 Cyl. Cvr.						3	3	4	4		
4M124	17001100		VM*3-21-4-31 PK NA Cyl. Cvr.	3	3	4	4							
4M125	17001200		VM*6-42-3-62 PK NA Cyl. Cvr.					3	3	4	4			
4M126	13016800		Dial Thermometer(-70+50)10A N	1	2	1	2	1	2	1	2			Suction Temp. with Rubber Cap
4M127	13017200		Dial Thermometer Holder 10A N	1	2	1	2	1	2	1	2			Marine
4M127	13017200		Dial Thermometer Holder 10A N	3	5	3	5	3	5	3	5			Marine
4M128	13016900		Dial Thermometer(0+100)10A T	1	1	1	1	1	1	1	1			Land Use Oil Temp.
4M129	13017000		Dial Thermometer(0+200)10A T	1	2	1	2	1	2	1	2			Land Use Discg. Temp.
4M130	13017100		Dial Thermometer(0+150)10A N	2	3	2	3	2	3	2	3			Marine Use Discg. Temp. Oil Temp.
4M131	21014100		Gauge V. G. AVS-F) 8A	3	4	3	4	3	4	3	4			Gauge Root V.
4M132	21014400		Hexagon V. (AVS-F) 10A	1	1	1	1	1	1	1	1			Marine Oil Suct. Discg. V.

Ref No	Part's Name Code	Category	Part's Name	VM								Remarks		
				3	21	4	31	6	42	8	62			
4M133	21014400		Hexagon V (AVS-R) 10A	1	1	1	1	1	1	1	1	1	1	Marine, Oil Suc Discg V
4M134	21014400		Hexagon V (AVS-R) 10A	1	1*		1*							Marine, Oil Suc Discg V
4M135	21014500		Hexagon V (AVS-R) 15A			1		1	1*	1	1*	1*	1*	Purge Root V (* means Optional)
4M136	21014400		Hexagon V (AVS-R) 10A		1		1		1					Marine, Oil Suc Discg V
4M137	*****	X	VM* Case S Blank Cvr B	3	3	3	3	3	3	3	3	3	3	
4M138	17024700		VM* PK NA Case S B Cvr	3	3	3	3	3	3	3	3	3	3	
4M139	*****	X	VM*VZ* Jkt Plug PT1-1/2(L)	2	2	2	2	2	2	2	2	2	2	Land
4M140	*****	X	VM*VZ* Jkt Plug PT1-1/2(M)	2	2	2	2	2	2	2	2	2	2	Marine
4M141	13016500		ZAP40	2	2	2	2	2	2	2	2	2	2	Jct S*W Gool
4M142	17012600		PK ZAP40/50/65	2	2	2	2	2	2	2	2	2	2	Sea Water, Syn Rubber
4M143	*****	X	VM*4-31-3-21 Side Cvr A	1	1	1	1							Oil Level Eye Marine=2
4M144	13004500	*	VM6-8VZ* Side Cvr A					1	1	1	1	1	1	Oil Level Eye Marine=2
4M145	*****	X	VM*4-31-3-21 Side Cvr B	1	1	1								Marine=0
4M146	13004600	*	VM6-8VZ* Side Cvr B					1	1	1	1	1	1	Marine=0
4M147	17000900		VM3-21-4-31 PK NA Side Cvr	2	2	2	2							
4M148	17010500		VM6-8VZ* PK NA Side Cvr					2	2	2	2	2	2	
4M149	13011900		Level Eye:KLS-4) U-902	1	1	1	1	1	1	1	1	1	1	Marine=2
4M150	17012900		O-Ring Level Eye:KLS-4)U-902	1	1	1	1	1	1	1	1	1	1	Marine=2
4M151	28046500		Plug with Hexagon Hole 20A	1	1	1	1	1	1	1	1	1	1	
4M152	13017300		VM*VZ* Heater(200W220V)	1	1	1	1	1	1	1	1	1	1	220V
4M153	13017400		VM*VZ* Heater(200W110V)	1	1	1	1	1	1	1	1	1	1	110V
4M154	13017500		VM*VZ* Heater(400W220V)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec, 220V
4M155	13017600		VM*VZ* Heater(400W110V)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec, 110V
4M156	13018100		Thermostat(TH-E421)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec
4M157	13018200		Protect Pipe Thermostat(TH-E421)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec
4M158	13004700	*	VM*VZ* Equalizer Cvr	1	1	1	1	1	1	1	1	1	1	
4M159	*****	X	VM3-4 Case S Blank Cvr A	1	1	1	1	1	1	1	1	1	1	
4M160	13018600		VM*VZ* Equalizer Pt	1	1	1	1	1	1	1	1	1	1	
4M161	17010600		VM*VZ* PK NA Equalizer Cvr	1	1	1	1	1	1	1	1	1	1	
4M162	13004800	*	VM*VZ* Suc Strainer Cvr	1	2	1	2	2	2	2	2	2	2	
4M163	17010700		VM*VZ* PKNA Suc Strainer Cvr	1	2	1	2	2	2	2	2	2	2	
4M164	13012000		VM*VZ* Spring Suc. Screen	1	2	1	2	2	2	2	2	2	2	
4M165	13012100		VM*VZ* Suc. Screen 265							1			1	
4M166	13012200		VM*VZ* Suc. Screen 220	1	2	1	2	2	1	2	1	2	1	
4M167	*****	X	VM*31-1 St. VM*3-4 S Strainer	1		1	1							
4M168	*****	X	VM*21-31 Suc Strainer(H)		1		1							
4M169	*****	X	VM*21 Suc Strainer(L)		1									
4M170	*****	X	VM*6 Suc Strainer					1						
4M171	*****	X	VM*42 Suc Strainer(H)						1					
4M172	*****	X	VM*42-62 Suc Strainer(L)							1			1	
4M173	*****	X	VM*8 Suc Strainer								1			
4M174	*****	X	VM*62 Suc Strainer(H)										1	
4M175	17010800		VM*VZ* PK NA Suc Strainer	2	2	2	2	2	2	2	2	2	2	
4M176	*****	X	VM* Jkt Plug M72(L)	2	2	3	3	2	2	3	3	3	3	Land
4M177	*****	X	VM* Jkt Plug M72(M)	2	2	3	3	2	2	3	3	3	3	Marine
4M178	17024800		VM* PK Jkt Plug M72	2	2	3	3	2	2	3	3	3	3	Teflon
4M179	13069400		ZAP65	2	2	3	3	2	2	3	3	3	3	Sea Water
4M180	17012600		PK ZAP40/50/65	2	2	3	3	2	2	3	3	3	3	Sea Water, Syn Rubber
4M181	05127500		Flg (J5K-SS) 25A	1	1	1		1	1	1	1	1	1	
4M182	17008400		Flg PK (J5K 25A)	1	1	1		1	1	1	1	1	1	Ryn Rubber
4M183	05127100		Bushing (Screwed) 40x20A	2	2	2	2	2	2	2	2	2	2	
4M184	05102000		Nipple V Coat 20A X65	1	1	1		1	1	1	1	1	1	
4M185	05161100		Elbow 90 Threader) 20A	1	1	1		1	1	1	1	1	1	
4M186	05170000		Nipple V Coat 20A X125	1	1	1		1	1	1	1	1	1	
4M187	05127300		T-Piece Threaded) 25X20A	1	1	1		1	1	1	1	1	1	
4M188	05127000		Bushing (Screwed) 25X20A	1	1	1		1	1	1	1	1	1	
4M189	05126600		Nozzle (SUS) 20A	2	2	2	2	2	2	2	2	2	2	
4M190	05127700		Hose Band 20A	2	2	2	2	2	2	2	2	2	2	
4M191	17002200		Wryl Hose TB 20A	1	1	1		1	1	1	1	1	1	
4M192	05126900		Elbow 90 Suc. 20A	1	1	1		1	1	1	1	1	1	



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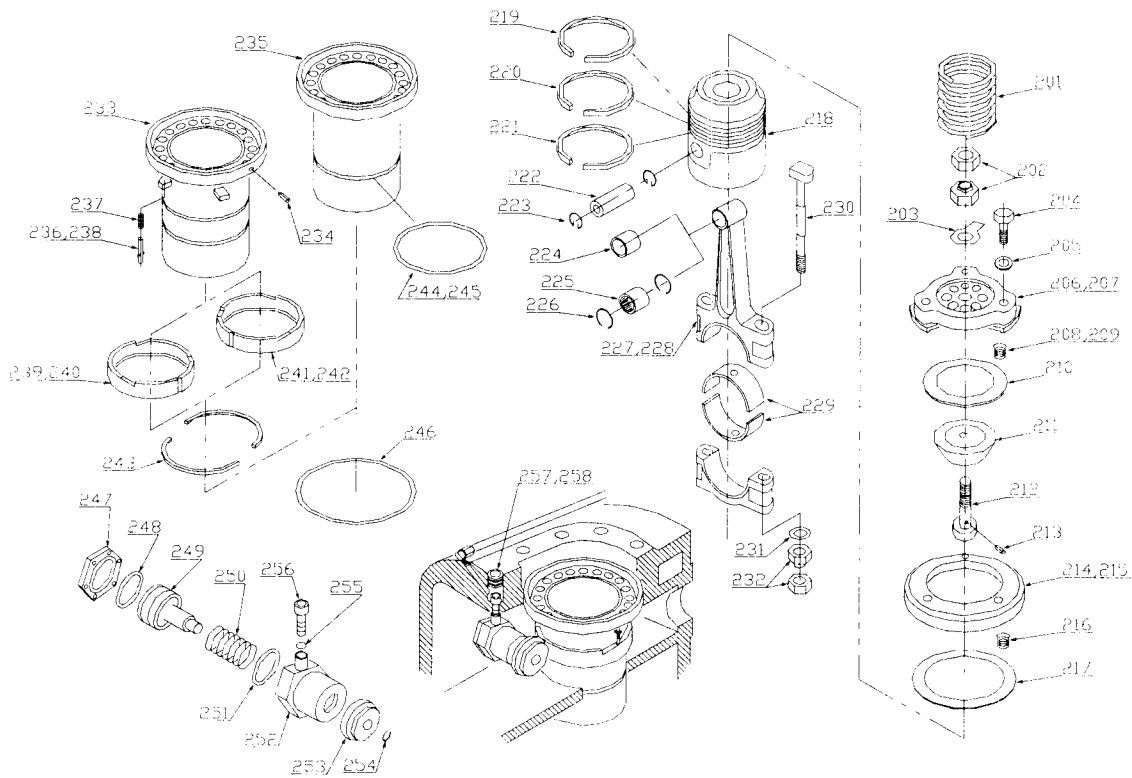


FIG VMVM (M2-IL2-1)VER4.1

Ref. No.	Parts Name Code	Category	Parts Name	VM										Remarks
				3	21	4	31	6	42	8	62			
4M201	1307290		VM Safety Head Spring	3	3	4	4	6	6	8	8		VM	
4M202	1307860	S	VM* Center Bolt Nut DV	3	3	4	4	6	6	8	8			
4M203	1307870	S	VM* Center Bolt Washer DV	3	3	4	4	6	6	8	8			
4M204	29064300		Hexagon Bolt W3 8X50	9	9	12	12	8	18	24	24			
4M205	29064400		Spring Washer W3 8	9	9	12	12	8	18	24	24			
4M206	13076700		VM* DV Guide N	3	3	4	4	6	6	8	8		R717	
4M207	13078800		VM* DV Guide R	3	3	4	4	6	6	8	8		Freon	
4M208	13060400	S	VM* Spring SV DV	18	18	24	24	36	36	48	48		Freon[3pc/1Cyl]	
4M209	13060500	S	VM* Spring DV R	27	27	36	36	54	54	72	72		Freon[3pc/1Cyl]	
4M210	13007600		VM*V2* DV PI	3	3	4	4	6	6	8	8			
4M211	13076500		VM* DV Inlet Seat	3	3	4	4	6	6	8	8			
4M212	13078900	S	VM* Center Bolt DV	3	3	4	4	6	6	8	8			
4M213	29049200	S	Parallel Pin 5X10	3	3	4	4	6	6	8	8			
4M214	13076300		VM* DV Outer Seat N	3	3	4	4	6	6	8	8		R717	
4M215	13076600		VM* DV Outer Seat F	3	3	4	4	6	6	8	8		Freon	
4M216	13060400	S	VM* Spring SV DV	12	12	16	16	24	24	32	32		Freon[3pc/1Cyl]	
4M216	13060400	S	VM* Spring SV DV	18	18	24	24	36	36	48	48		Freon[3pc/1Cyl]	
4M217	13070500		VM* Suc V PI	3	3	4	4	6	6	8	8			
4M218	13071700		VM* Piston	3	3	4	4	6	6	8	8			
4M219	13070600		VM* Piston Ring 1st	3	3	4	4	6	6	8	8			
4M220	13070700		VM* Piston Ring 2nd	3	3	4	4	6	6	8	8			
4M221	13070800		VM* Oil Ring	3	3	4	4	6	6	8	8			
4M222	13053700		VM* Piston Pin	3	3	4	4	6	6	8	8			
4M223	13071200		VM* Piston Pin Stopper	6	6	8	8	12	12	16	16			
4M224	13002600		VM* Piston Pin Metal	3	2	4	3	6	4	8	6			
4M225	13053800		VM* Needle Bearing		1		1		2		2		Dual Stage High Side	
4M226	13070900		VM* Ret Ring Needle Bearing		2		2		4		4		Dual Stage High Side	
4M227	13079000	S	VM* Rod 30	3	2	4	3	6	4	8	6			
4M228	13079100	S	VM* Rod 42		1		1		2		2		Dual Stage High Side	
4M229	13053900		VM* Crank Pin Metal	3	3	4	4	6	6	8	8		(SET)	
4M230	13054900	S	VK*VM* Rod Bolt	6	6	8	8	12	12	16	16			
4M231	13054800	S	VK*VM* Washer Rod Bolt	6	6	8	8	12	12	16	16			
4M232	13055000	S	VK*VM* Nut Rod Bolt	6	6	8	8	12	12	16	16			
4M233	13079200	S	VM* Cyl Liner A	2	1	2	2	4	2	4	4		for Unl Installation	
4M234	29048200	S	Spring Pin 5X8	2	1	2	2	4	2	4	4			
4M235	13072100		VM* Cyl Liner B	1	2	2	2	4	2	4	4			
4M236	13075100	S	VS*VM* Unl Pin	6	3	6	6	12	6	12	12		[3pc/1Cyl]	
4M237	13075200	S	VS*VM* Spring Unl Pin	6	3	6	6	12	6	12	12		[3pc/1Cyl]	
4M238	13079300	S	VS*VM* Unl Pin (S)										Anti-Wear [3pc/1Cyl]	

Ref. No.	Parts Name Code	Category	Parts Name	VM								Remarks
				3	21	4	1	6	42	8	62	
4M239	13071900		VM* Unl Cam Ring A	2	1	2	2	2	1	2	2	Pump Side Cyl
4M240	13078400		VM* Unl Cam Ring A (S)									Anti-Wear
4M241	13072000		VM* Unl Cam Ring B					2	1	2	2	M Seal Side Cyl
4M242	13078500		VM* Unl Cam Ring B (S)									Anti-Wear
4M243	13075400		VM* Unl Stop Ring	2	1	2	2	4	2	4	4	(SET)
4M244	17018700		VM* O-Ring N Cyl Liner		1		1		2		2	R717, H/St Cyl only
4M245	17018600		VM* O-Ring R Cyl Liner		1		1		2		2	Freon, H/St Cyl only
4M246	13070400		VM* Shim Cyl Liner	3	3	4	4	6	6	8	8	
4M247	13012400	S	VM*VZ* Unl Cyl Cvr	2	1	2	2	2	1	2	2	
4M248	17013200	S	VM*VZ* O-Ring Unl Cyl Cvr	2	1	2	2	2	1	2	2	
4M249	13012500	S	VM*VZ* Unl Piston	2	1	2	2	2	1	2	2	
4M250	13012600		VM*VZ* Spring Unl Piston	2	1	2	2	2	1	2	2	
4M251	17013600	S	VM*VZ* PK Unl Piston	2	1	2	2	2	1	2	2	
4M252	13012700	S	VM*VZ* Unl Cyl	2	1	2	2	2	1	2	2	
4M253	13079400	S	VM* Unl Operatng Disk	2	1	2	2	2	1	2	2	
4M254	13012900	S	VM*VZ Ret Ring Unl Disk	2	1	2	2	2	1	2	2	
4M255	17013300	S	VM*VZ* O-Ring Unl Cyl	2	1	2	2	2	1	2	2	
4M256	13013000	S	VM*VZ* Unl Cyl Bolt	2	1	2	2	2	1	2	2	
4M257	29046500		Plug with Hexagor Hole 20A					2	1	2	2	
4M258	05170100		Bushing(Threaded)20X8A	2	1	2	2					
4M259	15205000		VM* Cyl Liner A St									Sold as Set
4M260	15205100		VM* Unl Pin & Spring St									Sold as Set
4M261	15207800		VM* Unl Pin(S) & Spring St									Sold as Set
4M262	15204900		VM*VM* Rod Bolt Nut St									Sold as Set
4M263	15008500		VM* Piston & Rod 30 (ASM)St									Sold as (ASM)SET
4M264	15008400		VM* Piston & Rod 42 (ASM)St									Sold as (ASM)SET
4M265	15008800		VM* Rod 30(ASM)St									Sold as (ASM)SET
4M266	15008900		VM* Rod 42(ASM)St									Sold as (ASM)SET
4M267	15008700		VM* DV N(ASM)St									Sold as (ASM)SET
4M268	15008300		VM* DV R(ASM)St									Sold as (ASM)SET
4M269	15009400		VM* DV I Seat N (ASM)St									Sold as (ASM)SET
4M270	15009500		VM* DV I Seat R (ASM)St									Sold as (ASM)SET
4M271	15205900		VM* DV Center Bolt Nut ST									Sold as Set
4M272	15009600		VM* Unl Cyl (ASM)St									Sold as (ASM)SET
4M273	15201400		VM*VZ* PK St Unl Cyl									Sold as Set
4M274	15205300		VM* DV Spring N St									Sold as Set
4M275	15205200		VM* DV Spring R St									Sold as Set
4M276	15205400		VM* Suc V Spring N St									Sold as Set
4M277	15205500		VM* Suc V Spring R St									Sold as Set



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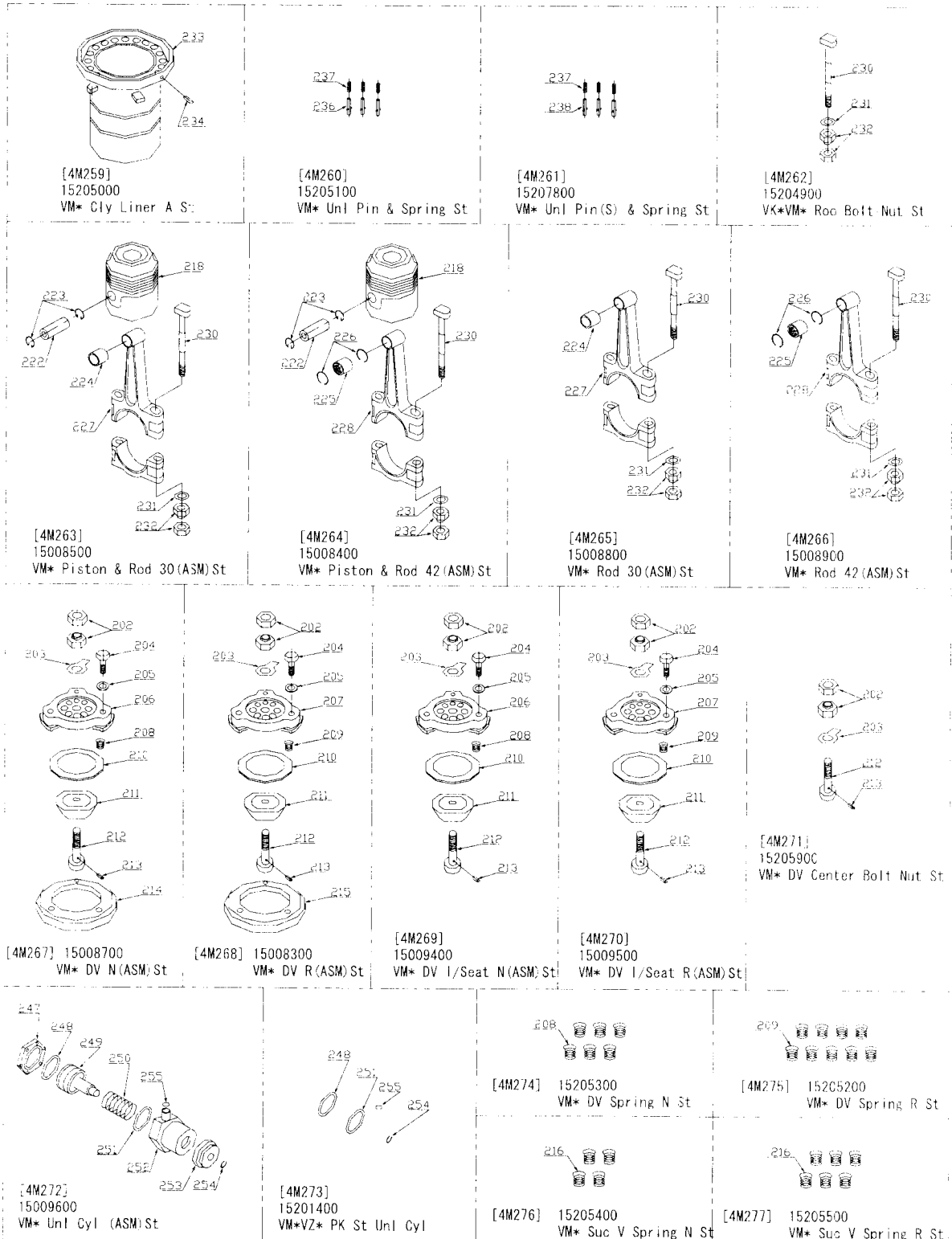


FIG. VMVMLM2-2L2-23VER4.1

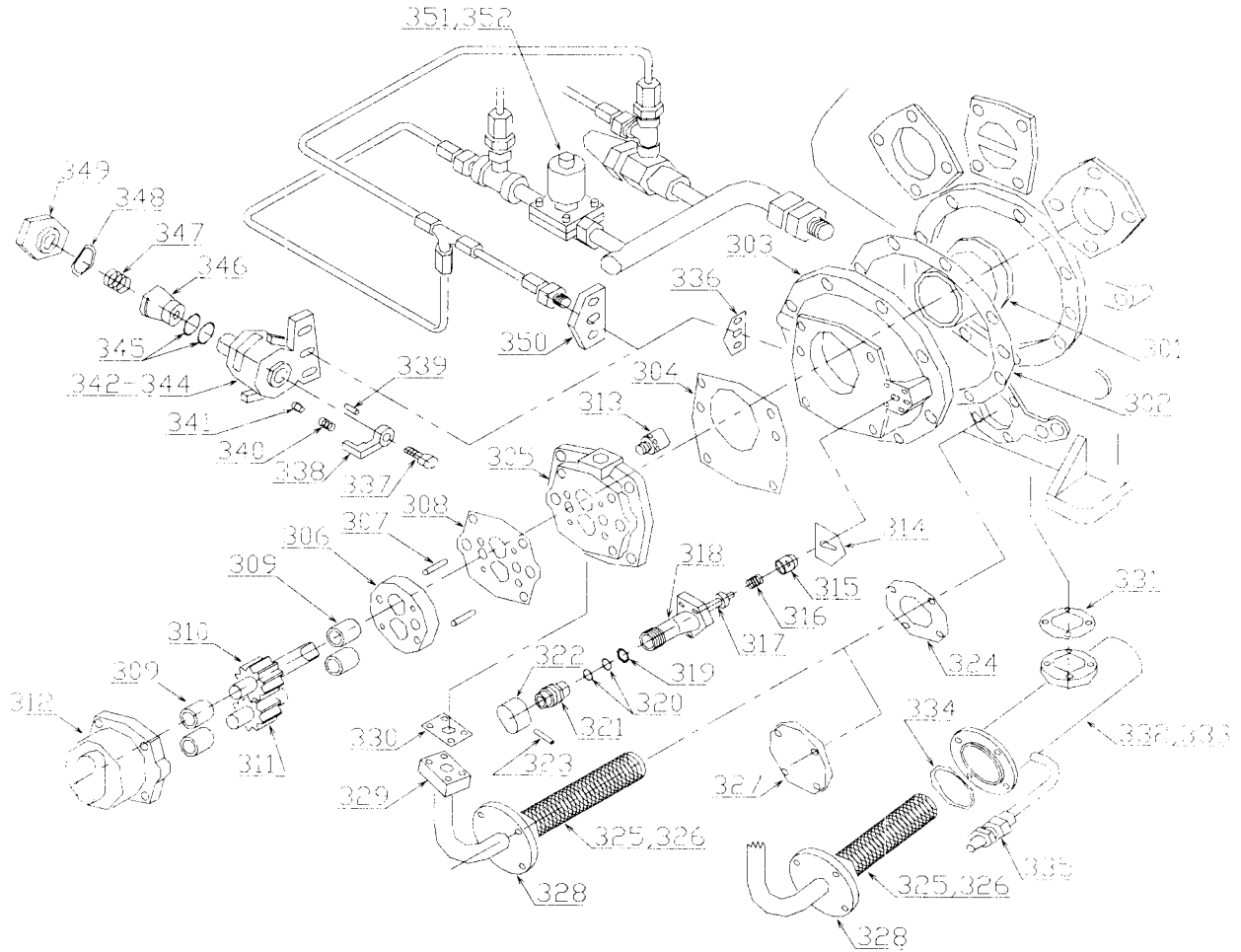


FIG VMVM (M3-11.3-1) VER4.1

Ref No.	Parts Name Code	Material	Parts Name	VM									Remarks	
				3	21	4	31	6	42	8	62			
4M301	13073200		VM* Rear Main Metal											
4M302	17000800		VM* PK NA Rear Cvr											
4M303	*****	X	VM* Rear Cvr											
4M304	17011300		VM*VZ* PK NA O Pump Base											
4M305	13005400	S	VM*VZ* O Pump Base											
4M306	13006500	S	VM*VZ* O Pump End Pl											
4M307	29052300	S	Taper Pin 8X35(Heat Treated)											
4M308	17011100		VM*VZ* PK NA O Pump Body											
4M309	13011800	S	VM*VZ* O Pump Metal B	4	4	4	4	4	4	4	4	4	4	
4M310	13079600		VM* O Pump Gear A											Operating Gear
4M311	13079700	S	VM* O Pump Gear B											Operated Gear
4M312	13079800	S	VM* O Pump Body											
4M313	15001300		VM*VZ* O Pump Rel V ASM St											Sold as ASM/SET
4M314	17011200		VM*VZ* PK NA Oil Rel V Body											
4M315	13015100		VM*VZ*VL Rel V											
4M316	13015200		VM*VZ*VL Rel V Spring											
4M317	13015300	S	VM*VZ*VL Rel V Spindle											
4M318	13015400	S	VM*VZ*VL Rel V Body											
4M319	17013700		VM*VZ*VL PK Rel V Bonnet											
4M320	17013400		VM*VZ*VL Rel V O-Ring	2	2	2	2	2	2	2	2	2	2	
4M321	13015500	S	VM*VZ*VL Rel V Bonnet											
4M322	13015600	S	VM*VZ*VL Rel V Knob											
4M323	29047900	S	Spring Pin 3X40											
4M324	17011300		VM*VZ* PK NA Oil Screen Cvr											
4M325	13076400		VM*3-4 Oil Squeezer											
4M326	13012300		VM*6-8VZ*VL Oil Screen											φ 60X270L φ 60X450L
4M327	13006700	*	VM*VZ* Oil Squeezer Cvr A											Land
4M328	13006800	*	VM*VZ* Oil Squeezer Cvr B											Marine
4M329	13006600	*	VM*VZ* O Pump Flg											
4M330	17011400		VM*VZ* PK NA O Pump Flg											
4M331	17011500		VM*VZ* PK NA Oil Tank Flg C											Marine
4M332	15207700	*	VM*3-4 Oil Tank Shell St											Marine Sold as Set
4M333	15202200	*	VM*VZ* Oil Tank Shell St											Marine Sold as Set

Ref. No.	Parts Name Code	Category	Parts Name	VM								Remarks			
				3	21	4	31	6	42	8	62				
4M334	17011600		VM*VZ* PK NA Cil Tank Flg A	1	1	1	1	1	1	1	1	1	1	1	Marine
4M335	21014400		Hexagon V (AVS-R) 10A	1	1	1	1	1	1	1	1	1	1	1	Marine, Oil Suc. Disc V
4M336	17011700		VM*VZ* PK NA Unl V Body	1	1	1	1	1	1	1	1	1	1	1	
4M337	29054300		Bolt w/ Hex Hole M4X14	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M338	13013100	S	VM*VZ*VL Unl V Lever	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M339	29049200		Parallele Pin 3X10	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M340	13013200		VM*VZ*VL Spring Unl V Click	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M341	13013300		VM*VZ*VL Unl V Click	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M342	13013400	S	VM*VZ*VL Unl V Body (3B)	1	1	1	1	1	1	1	1	1	1	1	3Step Unl V (ASM) SET
4M343	13013500	S	VM*VZ*VL Unl V Body (2B)	1	1	1	1	1	1	1	1	1	1	1	2Step Unl V (ASM) SET
4M344	13013600	S	VM*VZ*VL Unl V Body (1B)	1	1	1	1	1	1	1	1	1	1	1	1Step Unl V (ASM) SET
4M345	17013500	S	VM*VZ*VL O-Ring Unl V Rotor	2	2	2	2	2	2	2	2	2	2	2	Where Unl V (ASM) SET applied
4M346	13013700	S	VM*VZ*VL Unl V Rotor	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M347	13013800		VM*VZ*VL Spring Unl V Rotor	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M348	17013800	S	VM*VZ*VL PK Unl V Plug	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M349	13013900	S	VM*VZ*VL Unl V Plug	1	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM) SET applied
4M350	13014000		VM*VZ* Unl V Blind Pl	1	1	1	1	1	1	1	1	1	1	1	
4M351	19001600	**	Solenoid V (HMV-1003GQ22)												R717 Auto Unl V Hz Various
4M352	19001700	**	Solenoid V (REV-1003GX)												Freon Auto Unl V Hz Various
4M353	15001500		VM*VZ* O/Pump Base (ASM) St NA												Sold as (ASM) SET
4M354	19006500		VM* O/Pump Body (ASM) St NA												Sold as (ASM) SET
4M355	15001600		VM*VZ* Oil Rel V (ASM) St NA												Sold as (ASM) SET
4M356	15201500		VM*VZ* PK St NA Oil Rel V												Sold as Set
4M357	15201600		VM*VZ* PK St NA Unl V												Sold as Set
4M358	15001700		VM*VZ* Unl V 3B (ASM) St NA												Sold as (ASM) SET
4M359	15001800		VM*VZ* Unl V 2B (ASM) St NA												Sold as (ASM) SET
4M360	15001900		VM*VZ* Unl V 1B (ASM) St NA												Sold as (ASM) SET

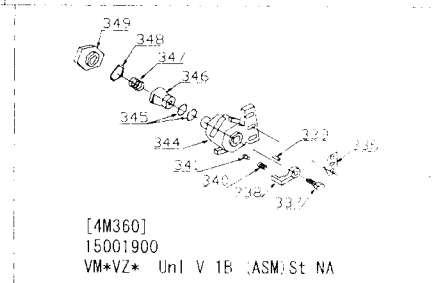
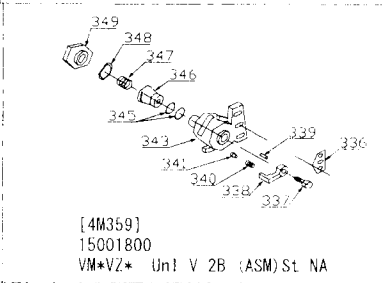
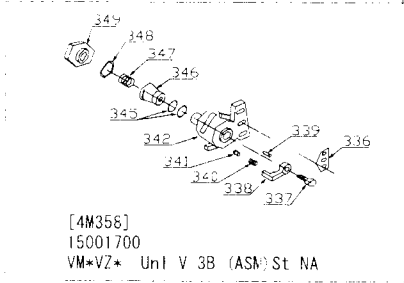
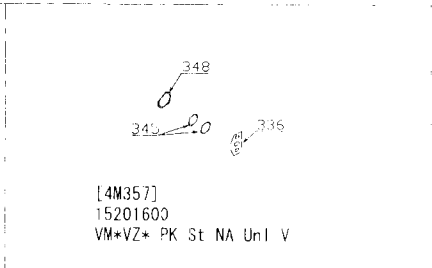
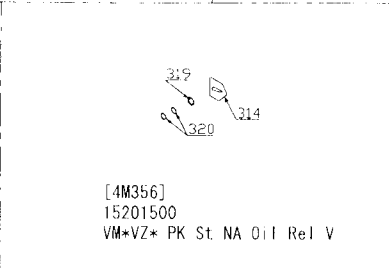
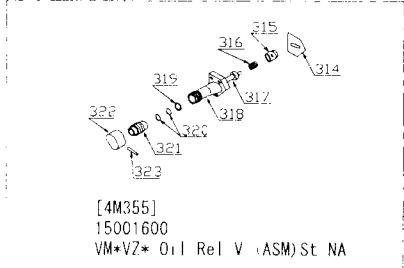
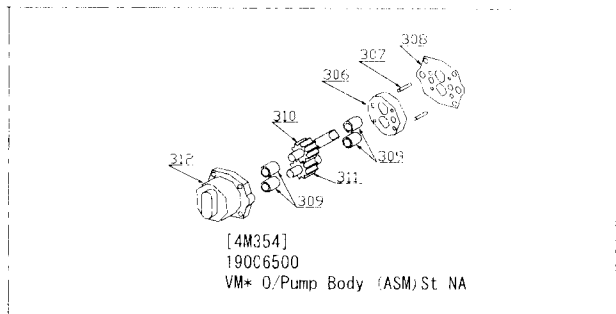
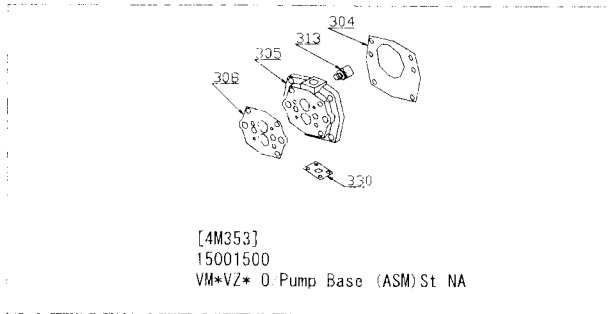


FIG VVWL-M3-213-2 VER.4

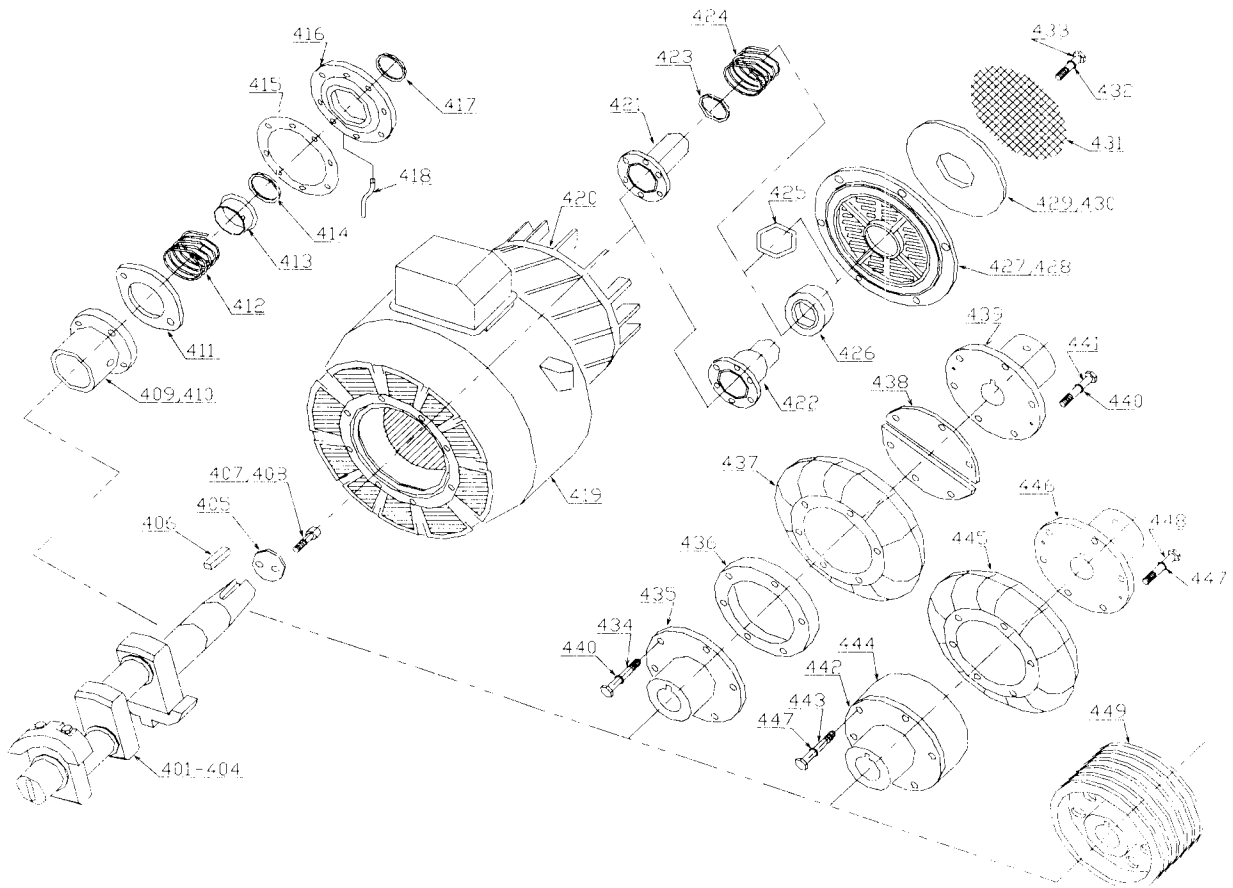


FIG VMML (M4-1) 4-1; VER.4.1

Ref No	Parts Name Code	Category	Parts Name	VM								Remarks	
				3	21	4	31	6	42	8	62		
4M401	13079900	S	VM8-62 Crankshaft										
4M402	13080000	S	VM6-42 Crankshaft										
4M403	13080100	S	VM4-31 Crankshaft										
4M404	13080200	S	VM3-21 Crankshaft										
4M405	13080400	S	VM* Set PI Crankshaft Key										
4M406	13080400	S	VM* Crankshaft Key										
4M407	29013500		Bolt w/ Hex Hole M12X40										
4M408	29054400		Bolt w/ Hex Hole M12X65										
4M409	13073000		VM*3-4 Front Main Metal										Flg Motor Comp
4M410	13073100		VM*6-8 Front Main Metal										
4M411	13080500		VM* Spring Ret M S										
4M412	13055200		VM*SP150 Spring M S										
4M413	15004500		VM*SP150 Rotate Ring (ASM)St										Sold as (ASM)SET
4M414	13060700		VM*SP150 Seal Ring M/S										
4M415	17001400		VM*SP150 PK NA M/S Cvr PI										
4M416	13071500		VM*SP150 M S Cvr PI										
4M417	13075500		VM*SP150 Dust Seal										
4M418	13080600	*	VM* Drain Pipe M S										
4M419	19006600	*	VM* Motor Stator (ASM)St										[V Hz; Option; Sold as ASM)SET
4M420	19006700	*	VM* Motor Rotor										Option depend on M Stator
4M421	13072300		VM* Motor End Shaft (22-30kW)										Flg Motor Comp(22-30kW)
4M422	13015700		VM*VZ* Motor End Shaft										Flg Motor Comp
4M423	13072500		VM* Sp Retain M Bearing22/30										Flg Motor Comp(22-30kW)
4M424	13072400		VM* Spring M Bearing(22-30kW)										Flg Motor Comp(22-30kW)
4M425	13015900		VM*VZ* Spring M Bearing										Flg Motor Comp
4M426	13015800		VM*VZ* Motor Bearing										Flg Motor Comp
4M427	13080700	*	VM* Motor End Cvr 22-30kW										Flg Motor Comp(22-30kW)
4M428	13005200	*	VM*VZ* Motor End Cvr 45-90kW										Flg Motor Comp
4M429	13076100		VM* M A/Filter39[22-30]										Flg Motor Comp
4M430	13016000		VM*VZ* M A/Filter-462[45-90]										Flg Motor Comp
4M431	13016200		VZ* M A/Filter PI[22-90]										Flg Motor Comp
4M432	29054900		Washer M20(High Tensile)										Flg Motor Comp
4M433	29006800		Hexagon Bolt M20X14										Flg Motor Comp

Ref. No.	Parts Name Code	Category	Parts Name	VM								Remarks	
				3	21	4	31	6	42	8	62		
4M434	29068000		Hexagon Bolt(11T) M16X100					6		6			CA445
4M435	14114300	*	VM* Cuplg. Flg. (C) CA445					1		1			CA445
4M436	14114400	*	VM* Cuplg. Space CA445					1		1			CA445
4M437	14102000	*	VM*VZ* Cuplg. Tire CA445					1		1			CA445
4M438	14102100	*	VM*VZ* Cuplg. Spacer CA445					1		1			CA445
4M439	14102200	*	VM*VZ* Cuplg. Flg.(M) CA445					1		1			CA445
4M440	29055000		Spring Washer M18					12		12			CA445
4M441	29054600		Hexagon Bolt M16X75(11T)					6		6			CA445
4M442	14114500	*	VM* Cuplg. Flg. (C) CA340	1	1	1	1		1			1	CA340
4M443	29068100		Hexagon Bolt(11T) M16X130	6	6	6	6		6			6	CA340
4M444	14114600	*	VM* Cuplg. Space CA340	1	1	1	1		1			1	CA340
4M445	14114700	*	VM* Cuplg. Tire CA340	1	1	1	1		1			1	CA340
4M446	14114800	*	VM* Cuplg. Flg. (M) CA340	1	1	1	1		1			1	CA340
4M447	29023900		Spring Washer M16	12	12	12	12		12			12	CA340
4M448	29068200		Hexagon Bolt(11T) M16X50	6	6	6	6		6			6	CA340
4M449	19006800	*	VM* Flywheel	1	1	1	1	1	1	1	1	1	V-Belt Drive
4M450	15009700		VM8 - 62 Crankshaft(ASM)St										Sold as (ASM)SET
4M451	15009800		VM6 - 42 Crankshaft(ASM)St										Sold as (ASM)SET
4M452	15009900		VM4 - 31 Crankshaft(ASM)St										Sold as (ASM)SET
4M453	15010000		VM3 - 21 Crankshaft(ASM)St										Sold as (ASM)SET
4M454	15008000		VM*SP150 M S (ASM)St NA										Sold as (ASM)SET
4M455	15008200		VM*SP150 M S Rep (ASM)St NA										Sold as (ASM)SET

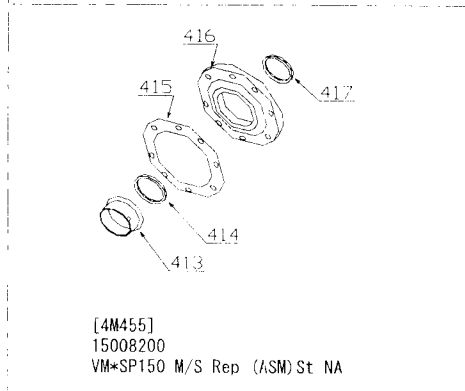
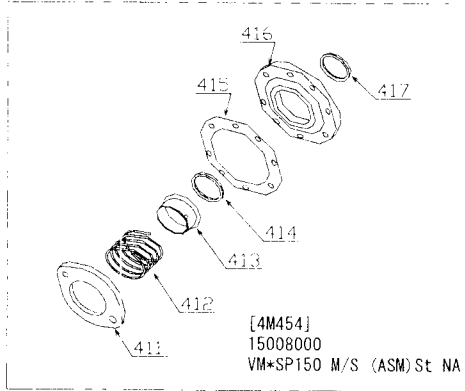
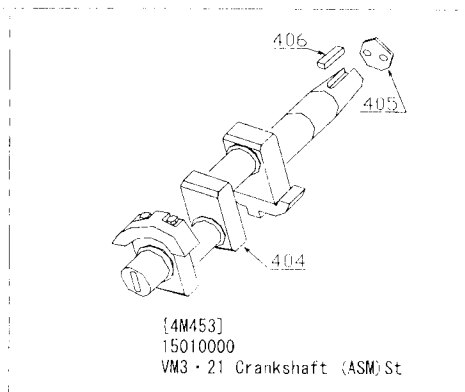
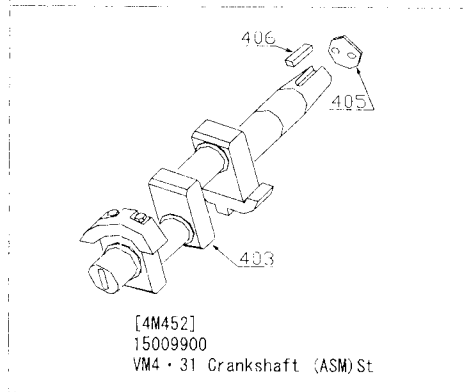
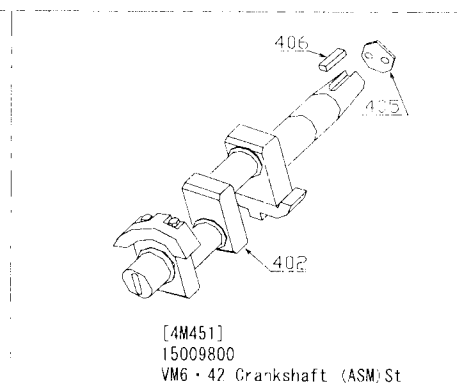
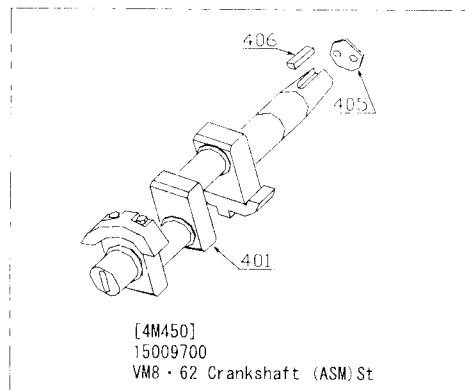


FIG VMVML (M4-21.4-2) VER. 1

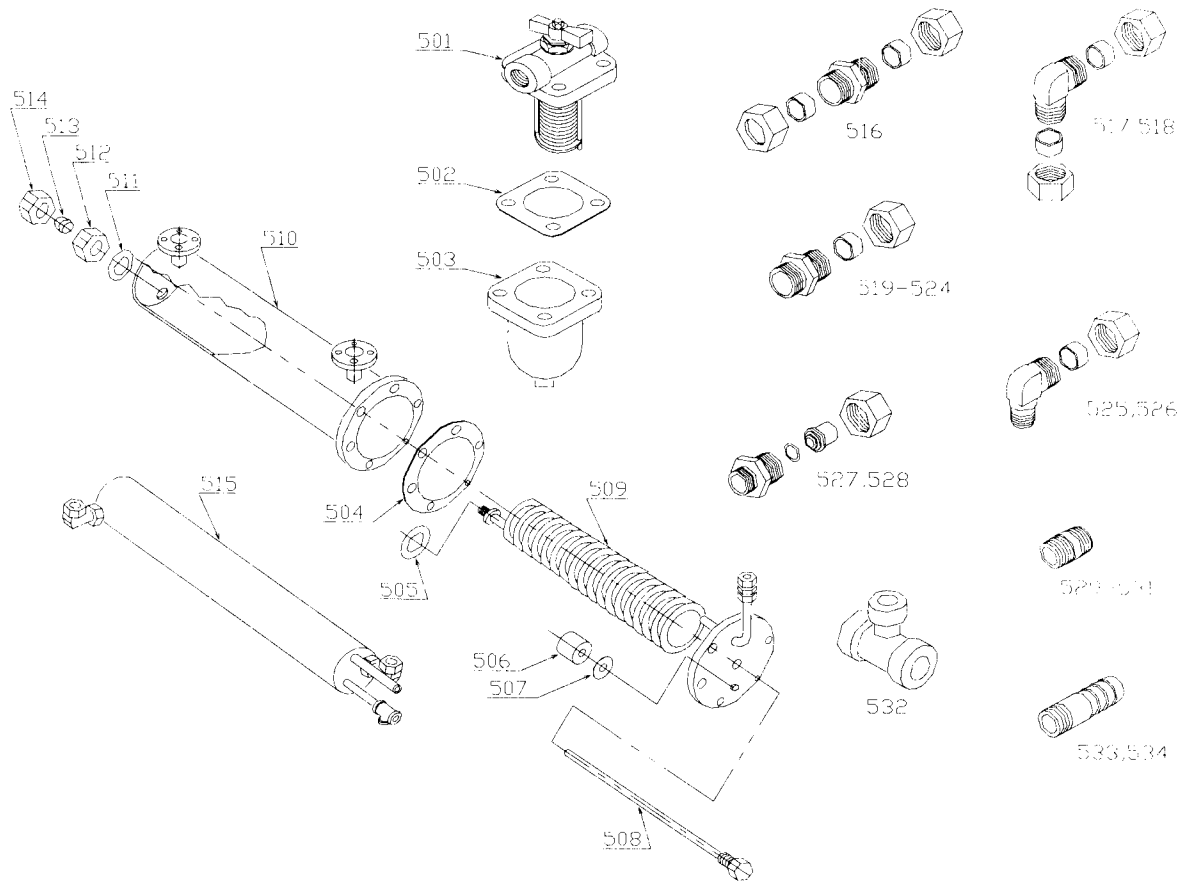


FIG VMVM (MS-11.5-1-VER.1)

Ref. No.	Parts Name Code	Qty	Parts Name	VM								Remarks	
				3	21	4	31	6	42	8	62		
4M501	15002700		VM*VZ O/Filter Cvr (ASM)St										Sold as (ASM)SET
4M502	17011900		VM*VZ*PK NA O/Filter Cvr										
4M503	13005500		VM*VZ O/Filter Body										
4M504	17017100	S	VMVL PK W C O/Cooler Flg A										
4M505	17016700	S	VMVL PK W C O/Cool C										
4M506	13069400		ZAP65										
4M507	17012500		PK ZAP40 50.65										Sea Water
4M508	13069200		VMVL MGNAP 19-05										Sea Water, Syri Rubber F.W
4M509	13401700	*	VMVL W.C O/Cooler Coil(PD)St										
4M510	15007700		VMVL W.C O/Coil Shell (ASM)St										
4M511	13069700		VMVL Washer W C O/Cool Coil										Sold as (ASM)SET
4M512	13069500		VMVL Nut W.C O/Cooler Coil										
4M513	05042000		Sleeve Sleeve Joint 1/2(MS)										W.C Oil Cooler Piping
4M514	05041000		Nut Sleeve Joint 1/2(MN)										W.C Oil Cooler Piping
4M515	15002900		VM*VZ*VL R.C O/Coil (ASM)St										Sold as (ASM)SET
4M516	05020700		Sleeve Joint F1/2(MLU)										W.C Oil Cooler Piping
4M517	05020900		Sleeve Joint F1/2(MLU)										W.C O/Coil Rear S.Oil Sup Piping
4M518	05021000		Sleeve Joint F3/4(MLU)										R.C Oil Cooler Piping
4M519	05019400		Sleeve Joint A6xPT1/8(MC)										Unl Piping
4M520	05019500		Sleeve Joint A6xPT1/4(MC)										Leak Press Gauge Piping
4M521	05019600		Sleeve Joint A6xPT3/8(MC)										Auto Unl Piping
4M522	05019700		Sleeve A6xPT3/8(φ1.2)(MC)										Auto Unl Piping, 1.2mm Orifice
4M523	05019900		Sleeve Joint A3/4:PT3/8(MC)										Oil Drop Piping
4M524	05020200		Sleeve Joint A3/4:PT3/4(MC)										Oil Filter Outlet
4M525	05020300		Sleeve Joint B6xPT1/8(MLN)										Case Side Unl Piping
4M526	05020600		Sleeve Joint B3/4:PT3/4(MLN)										Oil Filter Inlet
4M527	05025400		Pipe Joint (S25C) 3x8A										Marine Press Gauge Piping
4M528	05025500		Pipe Joint (S25C) 10x10A										Oil Return V
4M529	05019000		Nipple #80 8A										Gauge Root V
4M530	05019100		Nipple #80 10A										Oil Return V
4M531	05019200		Nipple #80 15A										Purge Root V
4M532	05035900		T-Piece(thread, rim) 10A										Auto Unl Piping
4M533	05126400		Nozzle (SUS) 10A										Oil Supply V

Ref. No.	Parts Name Code	Category	Parts Name	VM								Remarks		
				3	21	4	51	6	42	8	62			
4M534	05126500		Nozzle (SUS) 15A											Purge Root V
4M535	15007500		VMVL W/C O/Cool C (ZAP)(ASM)St											Sold as (ASM)SET
4M536	15007600		VMVL W/C O/Cool C (MAG)(ASM)St											Sold as (ASM)SET
4M537	15007300		VMVL W/C O/Cool (ZAP)(ASM)St											Sold as (ASM)SET
4M538	15007400		VMVL W/C O/Cool (MAG)(ASM)St											Sold as (ASM)SET
4M539	15207200		VMVL PK St W/C O/Cooler											Sold as Set
4M540	15003500		VM*VZ* O/Filter Cvr(ASM)St NA											Sold as (ASM)SET
4M541	15003400		VM*VZ* O/Filter (ASM)St NA											Sold as (ASM)SET

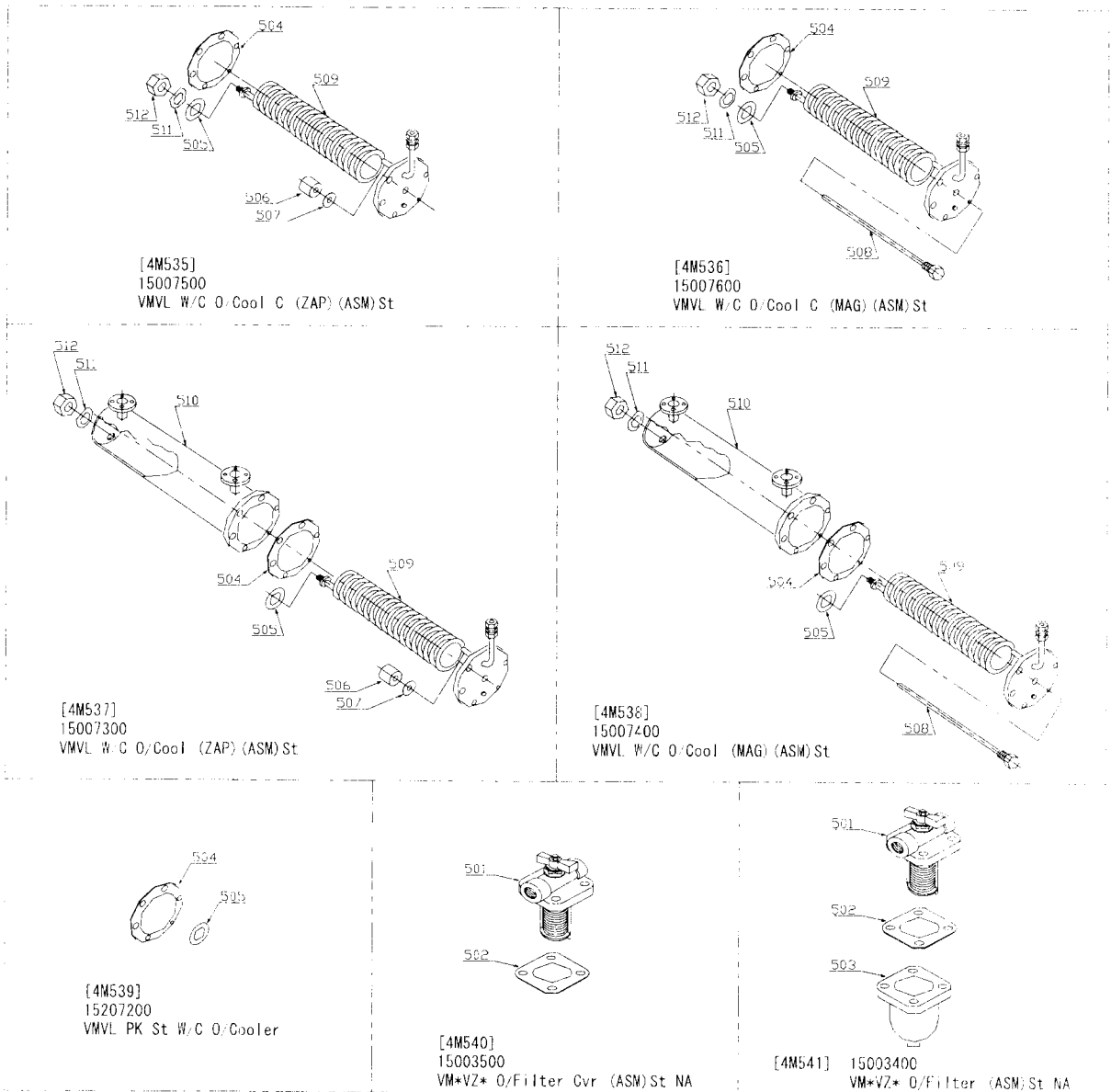


FIG VMVM M5-2L5-2, VER4.1

Ref. No.	Parts Name Code	Category	Parts Name	VM								Remarks		
				3	21	4	31	6	42	8	62			
4M601	21008700		Safety V 1.80M 10A											
4M602	21008800		Safety V 1.93M 10A											
4M603	21009300		Safety V 1.18M 15A											
4M604	21009500		Safety V 1.80M 15A											
4M605	21009600		Safety V 1.93M 15A											
4M606	21010100		Safety V 1.18M 20A											
4M607	21010300		Safety V 1.80M 20A											
4M608	21010400		Safety V 1.93M 20A											
4M609	21010900		Safety V 1.18M 25A											
4M610	21011100		Safety V 1.80M 25A											
4M611	21011200		Safety V 1.93M 25A											
4M612	21011700		Safety V 1.18M 32A											
4M613	21011900		Safety V 1.80M 32A											
4M614	21012000		Safety V 1.93M 32A											
4M615	21012500		Safety V 1.18M 40A											
4M616	21012700		Safety V 1.80M 40A											
4M617	21012800		Safety V 1.93M 40A											
4M618	21013300		Safety V 1.18M 50A											
4M619	21013500		Safety V 1.80M 50A											
4M620	21013600		Safety V 1.93M 50A											

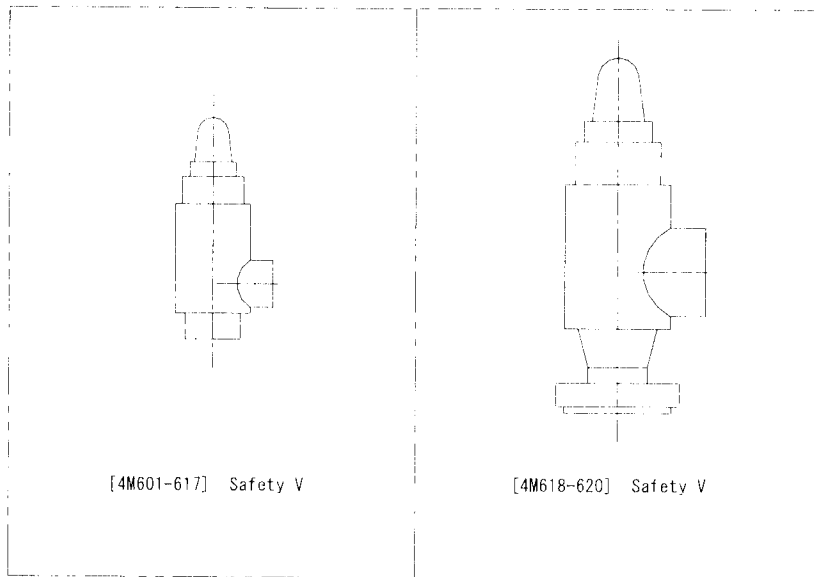


FIG VMVML M6-1LE-1, VER4.1



CENTRAL ICE MACHINE COMPANY
Refrigeration Supplies

800-228-7213

customerservice@centralice.com

Model

VML Compressor

Ver.4.1

VML3 VML21
VML4 VML31
VML6 VML42
VML8 VML62



CENTRAL ICE MACHINE COMPANY

Refrigeration Supplies

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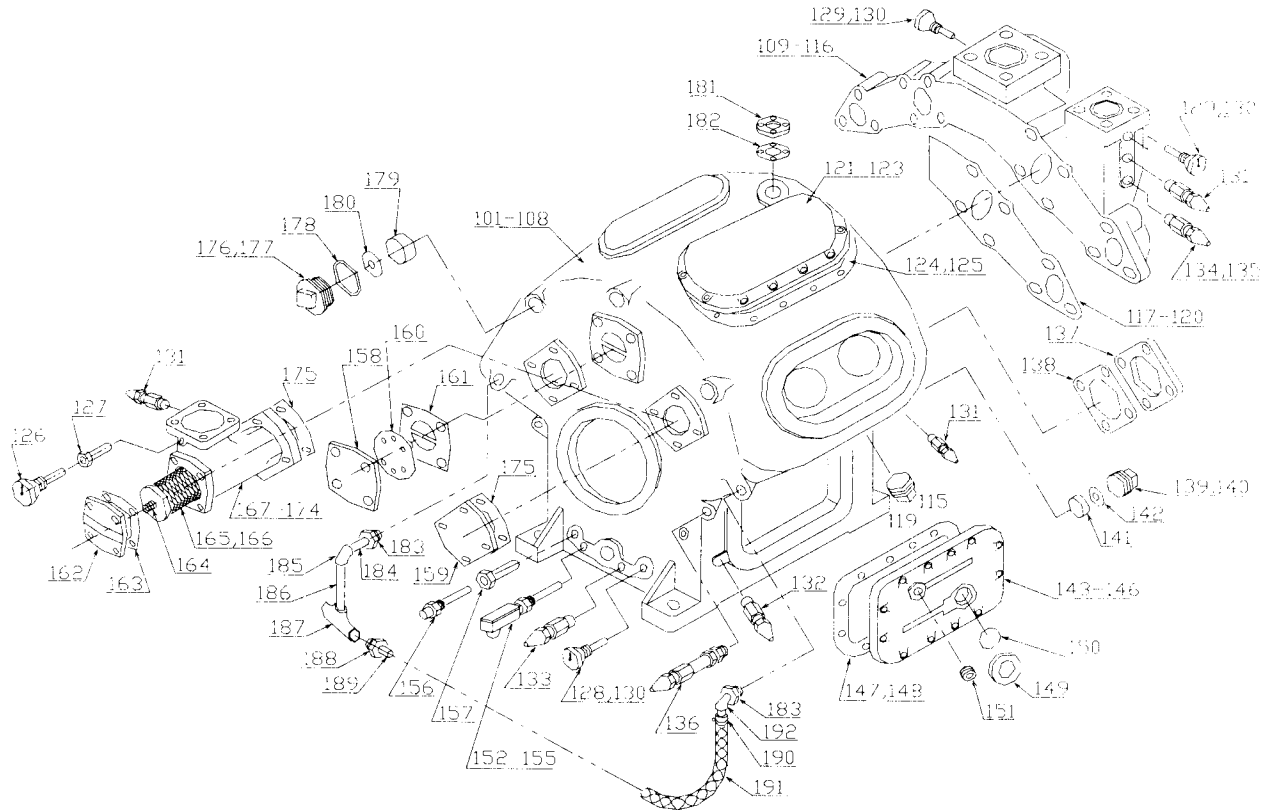


FIG VVVM1-M1-11-1-1-VER4.1

Ref. No.	Parts Name Code	Category	Parts Name	VML										Remarks	
				3	21	4	31	6	42	8	62				
4L101	*****	X	VML3 Case	1											
4L102	*****	X	VML21 Case		1										
4L103	*****	X	VML4 Case			1									
4L104	*****	X	VML31 Case												
4L105	*****	X	VML6 Case					1							
4L106	*****	X	VML42 Case						1						
4L107	*****	X	VML8 Case								1				
4L108	*****	X	VML62 Case									1			
4L109	*****	X	VM*3 Discg. Manifold	1										1	
4L110	*****	X	VM*21 Discg. Manifold		1										
4L111	*****	X	VM*4 Discg. Manifold			1									
4L112	*****	X	VM*31 Discg. Manifold												
4L113	*****	X	VM*6 Discg. Manifold					1							
4L114	*****	X	VM*42 Discg. Manifold						1						
4L115	*****	X	VM*8 Discg. Manifold								1				
4L116	*****	X	VM*62 Discg. Manifold									1			
4L117	15207300		VM*3-21 PK St NA Discg. MF	1	1										Sold as Set
4L118	15207400		VM*4-31 PK St NA Discg. MF			1									Sold as Set
4L119	15207500		VM*6-42 PK St NA Discg. MF					1	1						Sold as Set
4L120	15207600		VM*8-62 PK St NA Discg. MF								1	1			Sold as Set
4L121	*****	X	VM*4-31-3-21 Cyl Cvr A	3	3	3	3								Name Letter Reverse with B
4L122	*****	X	VM*4-31-3-21 Cyl Cvr B				1	1							Name Letter Reverse with A
4L123	*****	X	VM*6-42-3-62 Cyl Cvr						3	3	4	4			
4L124	17001100		VM*3-21-4-31 PK NA Cyl Cvr	3	3	4	4								
4L125	17001200		VM*6-42-3-62 PK NA Cyl Cvr					3	3	4	4				
4L126	13016800		Dial Thermometer(-70+50)10A N	1	2	1	2	1	2	1	2				Suction Temp. with Rubber Cap.
4L127	13017200		Dial Thermometer Folder 10A N	1	2	1	2	1	2	1	2				Land
4L127	13017200		Dial Thermometer Folder 10A N	3	5	3	5	3	5	3	5				Marine
4L128	13016900		Dial Thermometer(0+100)10A T	1	1	1	1	1	1	1	1				Land Use/Oil Temp.
4L129	13017000		Dial Thermometer(0+200)10A T	1	2	1	2	1	2	1	2				Land Use/Discg. Temp.
4L130	13017100		Dial Thermometer(0+150)10A N	2	3	2	3	2	3	2	3				Marine Use/Discg. Temp./ Oil Temp.
4L131	21014100		Gauge V (G AVS-F) 8A	3	4	3	4	3	4	3	4				Gauge Valve
4L132	21014400		Hexagon V (AVS-F) 10A	1	1	1	1	1	1	1	1				(Oil Return V[Option])

Ref. No.	Parts Name Code	Date/Cor.	Parts Name	V.M.								Remarks		
				3	21	4	31	6	42	8	62			
4L133	21014400		Hexagon V (AVS-F) 10A	1	1	1	1	1	1	1	1	1	1	Land Use/Oil Supply V/Oil Disc.
4L134	21014400		Hexagon V (AVS-F) 10A	1	1*		1*							Purge V(+ means Optional)
4L135	21014500		Hexagon V (AVS-F) 15A			1			1	1*	1	1*		Purge V(+ means Optional)
4L136	21014400		Hexagon V (AVS-F) 10A		1		1			1			1	H/ St Oil Drop Pipe
4L137	*****	X	VM* Case S Blank Cvr B	3	3	3	3	3	3	3	3	3	3	
4L138	17024700		VM* PK NA Case S; B Cvr	3	3	3	3	3	3	3	3	3	3	
4L139	*****	X	VM*VZ* Jkt Plug FT1-1/2(L)	2	2	2	2	2	2	2	2	2	2	Land
4L140	*****	X	VM*VZ* Jkt Plug FT1-1/2(M)	2	2	2	2	2	2	2	2	2	2	Marine
4L141	13016500		ZAP40	2	2	2	2	2	2	2	2	2	2	Sea Water Cooling
4L142	17012600		PK ZAP40/50/65	2	2	2	2	2	2	2	2	2	2	
4L143	*****	X	VM*4-31-3-21 Side Cvr A	1	1	1	1							Oil Level Eye Marine-2
4L144	13004500	*	VM6-8VZ* Side Cvr A					1	1	1	1	1	1	Oil Level Eye Marine-2
4L145	*****	X	VM*4-31-3-21 Side Cvr B	1	1	1	1							Marine=0
4L146	13004600	*	VM6-8VZ* Side Cvr B					1	1	1	1	1	1	Marine=0
4L147	17000900		VM3-21-4-31 PK NA Side Cvr	2	2	2	2							
4L148	17010500		VM6-8VZ* PK NA Side Cvr					2	2	2	2	2	2	
4L149	13011900		Level Eye(KLS-4) U-902	1	1	1	1	1	1	1	1	1	1	Marine=2
4L150	17012900		O-Ring Level Eye(KLS-4) U-902	1	1	1	1	1	1	1	1	1	1	Marine=2
4L151	29046500		Plug with Hexagon Hole 20A	1	1	1	1	1	1	1	1	1	1	Marine=2
4L152	13017300		VM*VZ* Heater(20)W220V)	1	1	1	1	1	1	1	1	1	1	220V
4L153	13017400		VM*VZ* Heater(20)W110V)	1	1	1	1	1	1	1	1	1	1	110V
4L154	13017500		VM*VZ* Heater(40)W220V)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec. 220V
4L155	13017600		VM*VZ* Heater(40)W110V)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec. 110V
4L156	13018100		Thermostat(TH-E421)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec.
4L157	13018200		Protect Pipe Therm(TH-E421)	1	1	1	1	1	1	1	1	1	1	Cold Area Spec.
4L158	13004700	*	VM*VZ* Equalizer Cvr	1	1	1	1	1	1	1	1	1	1	
4L159	*****	X	VM3-4 Case S Blank Cvr A	1	1	1	1	1	1	1	1	1	1	
4L160	13018600		VM*VZ* Equalizer Pl	1	1	1	1	1	1	1	1	1	1	
4L161	17010600		VM*VZ* PK NA Equalizer Cvr	1	1	1	1	1	1	1	1	1	1	
4L162	13004800	*	VM*VZ* Suc Strainer Cvr	1	2	1	2	2	2	2	2	2	2	
4L163	17010700		VM*VZ* PKNA Suc Strainer Cvr	1	2	1	2	2	2	2	2	2	2	
4L164	13012000		VM*VZ* Spring Suc. Screen	1	2	1	2	2	2	2	2	2	2	
4L165	13012100		VM*VZ* Suc. Screen 265											
4L166	13012200		VM*VZ* Suc. Screen 220	1	2	1	2	2	1	2	1	2	1	
4L167	*****	X	VM*31 L Str./VM*3-4 S Strainer	1		1	1							
4L168	*****	X	VM*21-31 Suc. Strainer(H)		1		1							
4L169	*****	X	VM*21 Suc. Straine(L)		1		1							
4L170	*****	X	VM*6 Suc. Strainer					1						
4L171	*****	X	VM*42 Suc. Straine(H)						1					
4L172	*****	X	VM*42-62 Suc. Strainer(L)							1				1
4L173	*****	X	VM*8 Suc. Strainer								1			
4L174	*****	X	VM*62 Suc. Straine(H)											1
4L175	17010800		VM*VZ* PK NA Suc. Strainer	2	2	2	2	2	2	2	2	2	2	
4L176	*****	X	VM* Jkt Plug M72(L)	2	2	3	3	2	2	3	3	3	3	Land
4L177	*****	X	VM* Jkt Plug M72(M)	2	2	3	3	2	2	3	3	3	3	Marine
4L178	17024800		VM* PK Jkt Plug M72	2	2	3	3	2	2	3	3	3	3	Teflon
4L179	13059400		ZAP65	2	2	3	3	2	2	3	3	3	3	Sea Water Cooling
4L180	17012600		PK ZAP40/50/65	2	2	3	3	2	2	3	3	3	3	Jct S/W Cool. Syn Rubber
4L181	05127500		Flg (J5K-SS) 25A	1	1	1	1	1	1	1	1	1	1	
4L182	17008400		Flg PK J5K 25A)	1	1	1	1	1	1	1	1	1	1	Synthetic Rubber
4L183	05127100		Bushing (Screwed) 40x20A	2	2	2	2	2	2	2	2	2	2	
4L184	05102000		Nipple V Coat 20AX65	1	1	1	1	1	1	1	1	1	1	
4L185	05161100		Elbow 90 Threaded) 20A	1	1	1	1	1	1	1	1	1	1	
4L186	05170000		Nipple V Coat 20AX125	1	1	1	1	1	1	1	1	1	1	
4L187	05127300		T-Piece Threaded) 25X20A	1	1	1	1	1	1	1	1	1	1	
4L188	05127000		Bushing (Screwed) 45X20A	1	1	1	1	1	1	1	1	1	1	
4L189	05126500		Nozzle (SUS) 20A	2	2	2	2	2	2	2	2	2	2	
4L190	05127100		Hose Band 20A	2	2	2	2	2	2	2	2	2	2	
4L191	18002200		Vinyl Hose TB) 20A	1	1	1	1	1	1	1	1	1	1	
4L192	05126900		Elbow (90 SL 20A	1	1	1	1	1	1	1	1	1	1	



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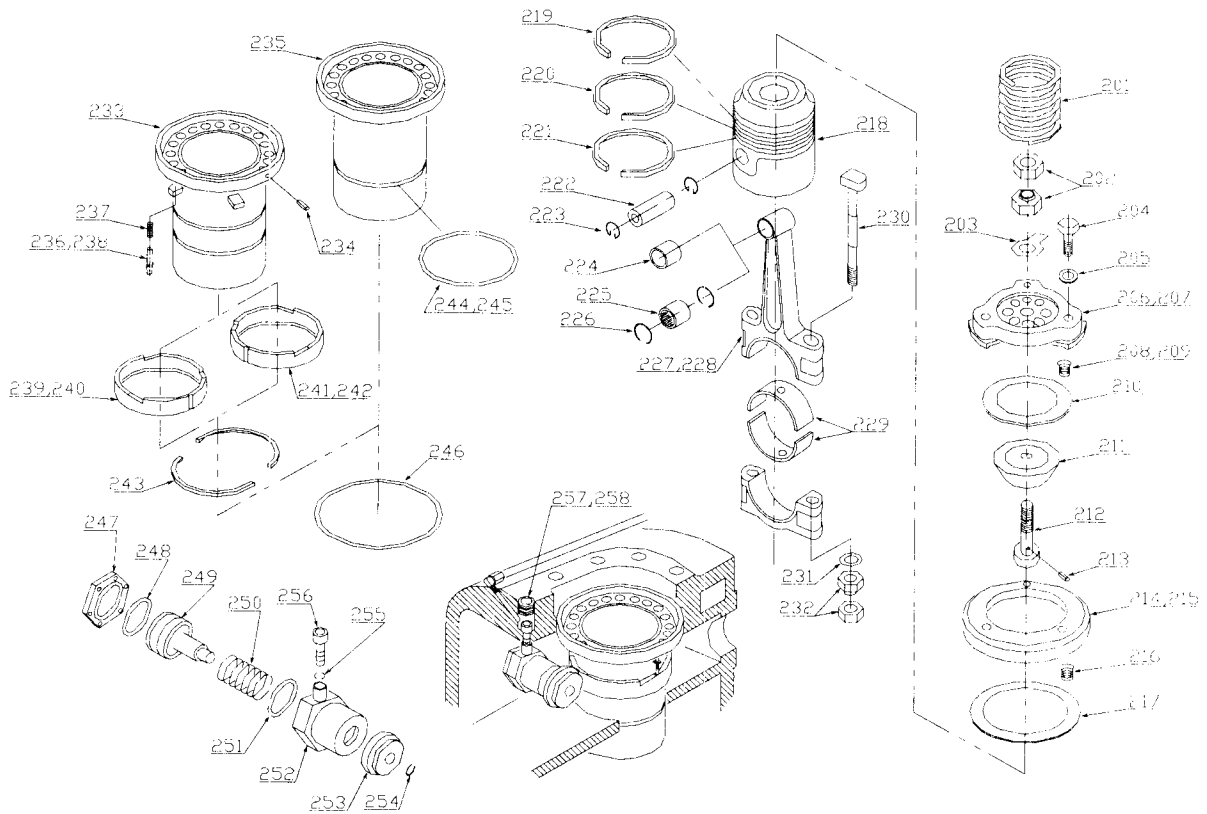


FIG VMVM (M2-1L2-1)VER4.1

Ref. No.	Parts Name Code	category	Parts Name	VML								Remarks
				3	21	4	31	6	42	8	62	
4L201	13077600		VML Safety Head Spring	3	3	4	4	6	6	8	8	VML
4L202	13078600	S	VM* Center Bolt Nut DV	3	3	4	4	6	6	8	8	
4L203	13078700	S	VM* Center Bolt Washer DV	3	3	4	4	6	6	8	8	
4L204	2906430C		Hexagon Bolt W3/8X50	9	9	12	12	18	18	24	24	
4L205	29064400		Spring Washer W3/8	9	9	12	12	18	18	24	24	
4L206	13076200		VM* DV Guide N	3	3	4	4	6	6	8	8	R717
4L207	13078800		VM* DV Guide R	3	3	4	4	6	6	8	8	Freon
4L208	13060400	S	VM* Spring SV/D/	18	18	24	24	36	36	48	48	R717[6pc/1Cyl]
4L209	13060500	S	VM* Spring DV R	27	27	36	36	54	54	72	72	Freon[9pc/1Cyl]
4L210	13076600		VM*VZ* DV PI	3	3	4	4	6	6	8	8	
4L211	13076500		VM* DV Inner Seat	3	3	4	4	6	6	8	8	
4L212	13078900	S	VM* Center Bolt DV	3	3	4	4	6	6	8	8	
4L213	29049800	S	Parallele Pin 5X10	3	3	4	4	6	6	8	8	
4L214	13076300		VM* DV Outer Seat N	3	3	4	4	6	6	8	8	R717
4L215	13076800		VM* DV Outer Seat R	3	3	4	4	6	6	8	8	Freon
4L216	13060400	S	VM* Spring SV/D/	12	12	16	15	24	24	32	32	R717[4pc/1Cyl]
4L216	13060400	S	VM* Spring SV/D/	18	18	24	24	36	36	48	48	Freon[6pc/1Cyl]
4L217	13070500		VM* Succ V PI	3	3	4	4	6	6	8	8	
4L218	13071700		VM* Piston	3	3	4	4	6	6	8	8	
4L219	13070600		VM* Piston Ring 1st	3	3	4	4	6	6	8	8	
4L220	13070700		VM* Piston Ring 2nd	3	3	4	4	6	6	8	8	
4L221	13070800		VM* Oil Ring	3	3	4	4	6	6	8	8	
4L222	13053700		VM* Piston Pin	3	3	4	4	6	6	8	8	
4L223	13071000		VM* Piston Pin Stopper	6	6	8	8	12	12	16	16	
4L224	13002600		VM* Piston Pin Metal	3	2	4	3	6	4	8	6	
4L225	13053800		VM* Needle Bearing		1		1		2		2	High Stage
4L226	13070900		VM* Ret Ring Needle Bearing		2		2		4		4	High Stage
4L227	13079000	S	VM* Rod 30	3	2	4	3	6	4	8	6	
4L228	13079100	S	VM* Rod 42		1		1		2		2	High Stage
4L229	13053900		VM* Crank Pin Metal	3	3	4	4	6	6	8	8	(SET)
4L230	13064900	S	VK*VM* Rod Bolt	6	6	8	8	12	12	16	16	
4L231	13064800	S	VK*VM* Washer Rod Bolt	6	6	8	8	12	12	16	16	
4L232	13065000	S	VK*VM* Nut Rod Bolt	6	6	8	8	12	12	16	16	
4L233	13079200	S	VM* Cyl Liner A	2	1	2	2	4	2	4	4	for Unl Installation
4L234	29048200	S	Spring Pin 5X8	2	1	2	2	4	2	4	4	
4L235	13072100		VM* Cyl Liner B	1	2	2	2	2	4	4	4	
4L236	13075100	S	VS*VM* Unl Pin	6	3	6	6	12	6	12	12	[3pc/1Cyl]
4L237	13075200	S	VS*VM* Spring Unl Pin	6	3	6	6	12	6	12	12	[3pc/1Cyl]
4L238	13079300	S	VS*VM* Unl Pin (S)									Anti-Wear.[3pc/1Cyl]

Ref No.	Parts Name Code	Color	Parts Name	V.M.L.								Remarks
				3	21	4	31	6	42	8	62	
4L239	13071900		VM* Unl Cam Ring A	2	1	2	2	2	1	2	2	Oil Pump Side Cyl
4L240	13078400		VM* Unl Cam Ring A (S)									Anti-Wear
4L241	13072000		VM* Unl Cam Ring B					2	1	2	2	M. Seal Side Cyl
4L242	13078500		VM* Unl Cam Ring B (S)									Anti-Wear
4L243	13075400		VM* Unl Stop Ring	2	1	2	2	4	2	4	4	(SET)
4L244	17018700		VM* O-Ring N Cyl Lner		1		1		2		2	R717, H/St Cyl only
4L245	17018600		VM* O-Ring R Cyl Lner		1		1		2		2	Freon, H/St Cyl only
4L246	13070400		VM* Shim Cyl Lner	3	3	4	4	6	6	8	8	
4L247	13012400	S	VM*VZ* Unl Cyl Cvr	2	1	2	2	2	1	2	2	
4L248	17013200	S	VM*VZ* O-Ring Unl Cyl Cvr	2	1	2	2	2	1	2	2	
4L249	13012500	S	VM*VZ* Unl Piston	2	1	2	2	2	1	2	2	
4L250	13012600		VM*VZ* Spring Unl Piston	2	1	2	2	2	1	2	2	
4L251	17013600	S	VM*VZ* PK Unl Piston	2	1	2	2	2	1	2	2	
4L252	13012700	S	VM*VZ* Unl Cyl	2	1	2	2	2	1	2	2	
4L253	13079400	S	VM* Unl Operating Disk	2	1	2	2	2	1	2	2	
4L254	13012900	S	VM*VZ Ret Ring Unl Disk	2	1	2	2	2	1	2	2	
4L255	17013300	S	VM*VZ* O-Ring Unl Cyl	2	1	2	2	2	1	2	2	
4L256	13013000	S	VM*VZ* Unl Cyl Bolt	2	1	2	2	2	1	2	2	
4L257	29046500		Plug with Hexagon Hole 20A					2	1	2	2	
4L258	05170100		Bushing Threaded 120X8A	2	1	2	2					
4L259	15205000		VM* Cyl Lner A St									Sold as Set
4L260	15205100		VM* Unl Pin & Spring St									Sold as Set
4L261	15207800		VM* Unl Pin(S) & Spring St									Sold as Set
4L262	15204900		VM*VM* Rod Bolt Nut St									Sold as Set
4L263	15008500		VM* Piston & Rod 3(ASM)St									Sold as (ASM)SET
4L264	15008400		VM* Piston & Rod 4(ASM)St									Sold as (ASM)SET
4L265	15008800		VM* Rod 30(ASM)St									Sold as (ASM)SET
4L266	15008900		VM* Rod 42(ASM)St									Sold as (ASM)SET
4L267	15008700		VM* DV N(ASM)St									Sold as (ASM)SET
4L268	15008300		VM* DV R(ASM)St									Sold as (ASM)SET
4L269	15009400		VM* DV I Seat N(ASM)St									Sold as (ASM)SET
4L270	15009500		VM* DV I Seat R(ASM)St									Sold as (ASM)SET
4L271	15205900		VM* DV Center Bolt Nut ST									Sold as Set
4L272	15009600		VM* Unl Cyl(ASM)St									Sold as (ASM)SET
4L273	15201400		VM*VZ* PK St Unl Cyl									Sold as Set
4L274	15205300		VM* DV Spring N St									Sold as Set
4L275	15205200		VM* DV Spring R St									Sold as Set
4L276	15205400		VM* Suc V Spring N St									Sold as Set
4L277	15205500		VM* Suc V Spring R St									Sold as Set



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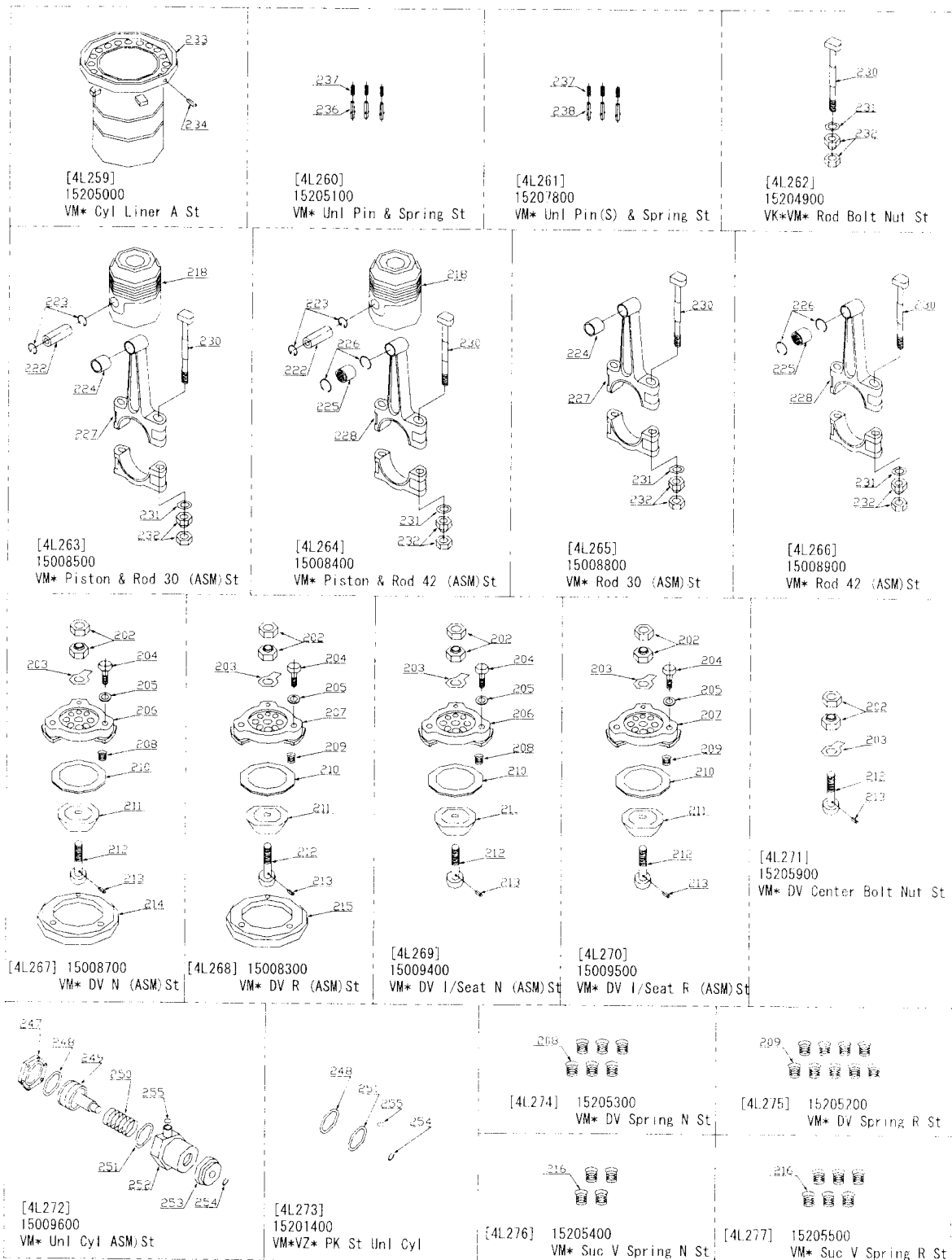


FIG VMVML M2-212-2/VER4.1

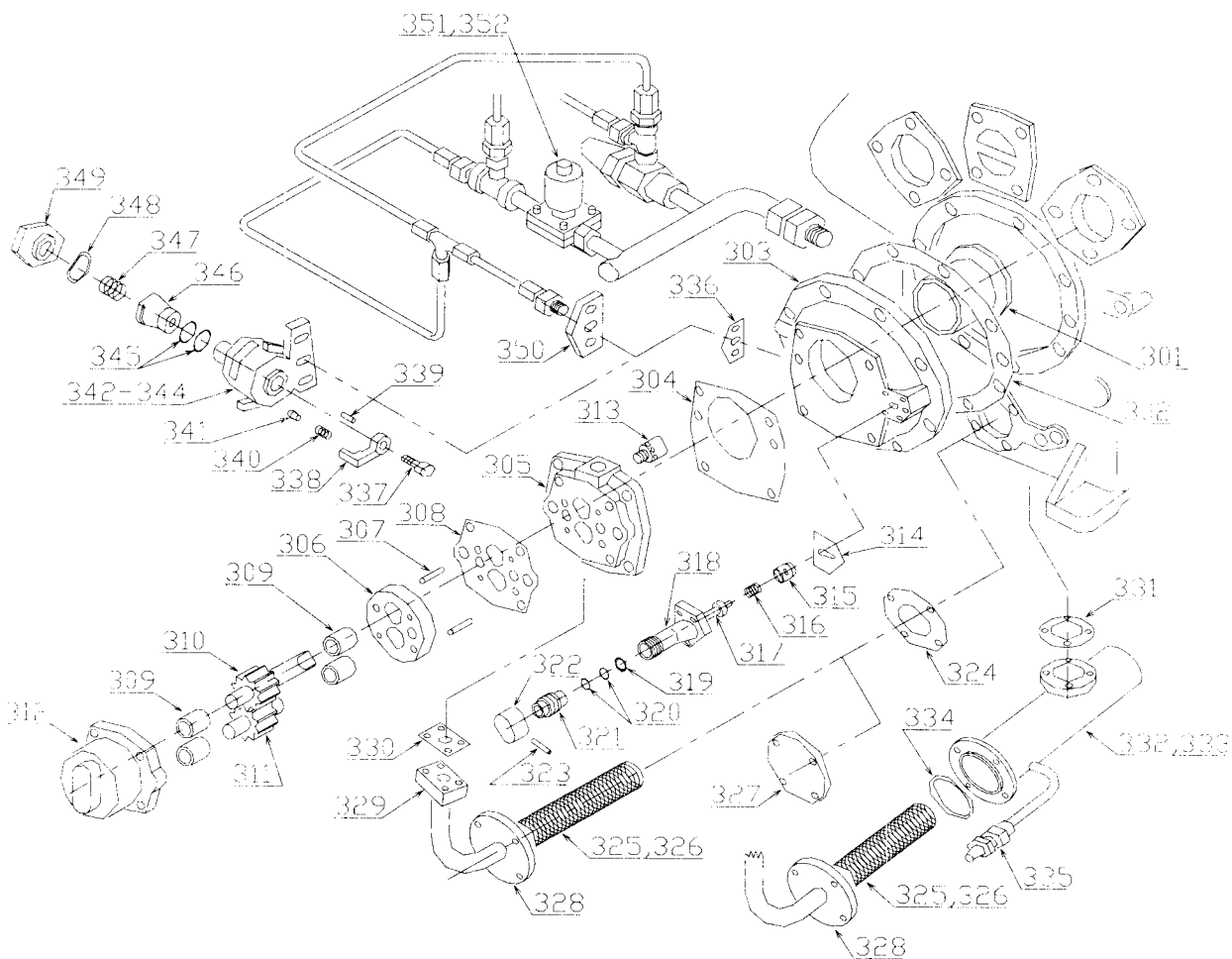


FIG VMVM /M3-1L3-1, VER.4.1

Ref. No	Parts Name Code	Category	Parts Name	VMI					Remarks			
				3	21	4	31	6		42	8	62
4L301	13013200		VM* Rear Main Metal	1	1	1	1	1	1	1	1	
4L302	17000800		VM* PK NA Rear Cvr	1	1	1	1	1	1	1	1	
4L303	*****	X	VM* Rear Cvr	1	1	1	1	1	1	1	1	
4L304	17011000		VM*VZ* PK NA O/Pump Base	1	1	1	1	1	1	1	1	
4L305	13005400	S	VM*VZ* O/Pump Base	1	1	1	1	1	1	1	1	
4L306	13006500	S	VM*VZ* O/Pump End Pl	1	1	1	1	1	1	1	1	
4L307	29052300	S	Taper Pin 8X35(Heat Treated)	1	1	1	1	1	1	1	1	
4L308	17011100		VM*VZ* PK NA O/Pump Body	1	1	1	1	1	1	1	1	
4L309	13011600	S	VM*VZ* O/Pump Metal B	4	4	4	4	4	4	4	4	
4L310	13079600		VM* O/Pump Gear A	1	1	1	1	1	1	1	1	Operating Gear
4L311	13079700		VM* O/Pump Gear B	1	1	1	1	1	1	1	1	Operated Gear
4L312	13079800	S	VM* O/Pump Body	1	1	1	1	1	1	1	1	
4L313	15001300		VM*VZ* O/Pump Rel V (ASM)St	1	1	1	1	1	1	1	1	Sold as ASM SET
4L314	17011200		VM*VZ* PK NA Oil Rel V Body	1	1	1	1	1	1	1	1	
4L315	13015100		VM*VZ*VL Rel V	1	1	1	1	1	1	1	1	
4L316	13015200		VM*VZ*VL Rel V Spring	1	1	1	1	1	1	1	1	
4L317	13015300	S	VM*VZ*VL Rel V Spindle	1	1	1	1	1	1	1	1	
4L318	13015400	S	VM*VZ*VL Rel V Body	1	1	1	1	1	1	1	1	
4L319	17013700		VM*VZ*VL PK Re V Bonnet	1	1	1	1	1	1	1	1	
4L320	17013400		VM*VZ*VL Rel V O-Ring	2	2	2	2	2	2	2	2	
4L321	13015500	S	VM*VZ*VL Rel V Bonnet	1	1	1	1	1	1	1	1	
4L322	13015600	S	VM*VZ*VL Rel V Knob	1	1	1	1	1	1	1	1	
4L323	29047900	S	Spring Pin 3X40	1	1	1	1	1	1	1	1	
4L324	17011300		VM*VZ* PK NA Oil Screen Cvr	1	1	1	1	1	1	1	1	
4L325	13076400		VM*3-4 Oil Screen	1	1	1	1	1	1	1	1	
4L326	13012300		VM*6-8VZ*VL Oil Screen	1	1	1	1	1	1	1	1	φ 60X270L
4L327	13006700	*	VM*VZ* Oil Screen Cvr A	1	1	1	1	1	1	1	1	φ 60X450L
4L328	13006800	*	VM*VZ* Oil Screen Cvr B	1	1	1	1	1	1	1	1	Land
4L329	13006600	*	VM*VZ* O/Pump Flg	1	1	1	1	1	1	1	1	Marine
4L330	17011400		VM*VZ* PK NA O/Pump Flg	1	1	1	1	1	1	1	1	
4L331	17011300		VM*VZ* PK NA Oil Tank Flg C	1	1	1	1	1	1	1	1	Marine
4L332	15207700	*	VM*3-4 Oil Tank Shell St	1	1	1	1	1	1	1	1	Marine Sold as Set
4L333	15202200	*	VM*VZ* Oil Tank Shell St	1	1	1	1	1	1	1	1	Marine Sold as Set

Ref. No.	Parts Name Code	Category	Parts Name	V.M.L.										Remarks
				3	21	4	31	6	42	8	62			
4L334	17011600		VM*VZ* PK NA Oil Tank Flg A	1	1	1	1	1	1	1	1	1	1	Marine
4L335	21014400		Hexagon V (AVS-R) 10A	1	1	1	1	1	1	1	1	1	1	Marine Use/Oil Supply V/Oil Disc
4L336	17011700		VM*VZ* PK NA Unl V Body	1	1	1	1	1	1	1	1	1	1	
4L337	29054300		Bolt w. Hex Hole M4X14	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L338	13013100	S	VM*VZ*VL Unl Valve	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L339	29049200		Parallel Pin 3X10	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L340	13013200		VM*VZ*VL Spring Unl V Click	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L341	13013300		VM*VZ*VL Unl V Check	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L342	13013400	S	VM*VZ*VL Unl V Body 3B											3Step Unl V (ASM)SET
4L343	13013500	S	VM*VZ*VL Unl V Body 2B											2Step Unl V (ASM)SET
4L344	13013600	S	VM*VZ*VL Unl V Body 1B											1Step Unl V (ASM)SET
4L345	17013500	S	VM*VZ*VL O-Ring Unl V Rotor	2	2	2	2	2	2	2	2	2	2	Where Unl V (ASM)SET applied
4L346	13013700	S	VM*VZ*VL Unl V Rotor	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L347	13013800		VM*VZ*VL Spring Unl V Rotor	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L348	17013800	S	VM*VZ*VL PK Unl V Plug	1	1	1	1	1	1	1	1	1	1	Where Unl V (ASM)SET applied
4L349	13013900	S	VM*VZ*VL Unl V Plug											
4L350	13014000		VM*VZ* Unl V Blind Pl	1	1	1	1	1	1	1	1	1	1	
4L351	19001600	**	Solenoid V (HMV-1003GQ22)											R717 Auto Unl/Various V/Hz
4L352	19001700	**	Solenoid V (REV-1003GX)											Freon Auto Unl/Various V/Hz
4L353	19001500		VM*VZ* O/Pump Base (ASM)St NA											Sold as (ASM)SET
4L354	19006500		VM* O/Pump Body (ASM)St NA											Sold as (ASM)SET
4L355	15001600		VM*VZ* Oil Rel V (ASM)St NA											Sold as (ASM)SET
4L356	15201500		VM*VZ* PK St NA Oil Rel V											Sold as (ASM)SET
4L357	15201600		VM*VZ* PK St NA Unl V											Sold as Set
4L358	15001700		VM*VZ* Unl V 3B (ASM)St NA											Sold as (ASM)SET
4L359	15001800		VM*VZ* Unl V 2B (ASM)St NA											Sold as (ASM)SET
4L360	15001900		VM*VZ* Unl V 1B (ASM)St NA											Sold as (ASM)SET

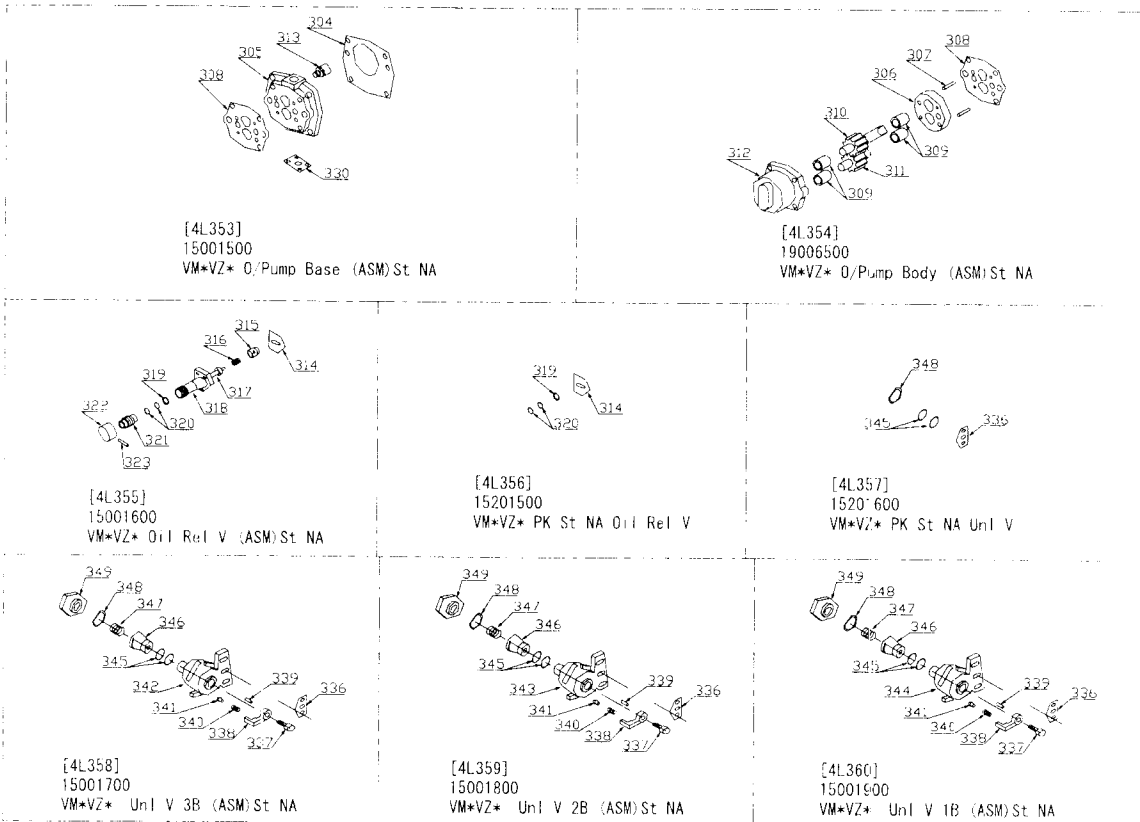


FIG V.M.V.L. (M3-7L3-2) VER4.1

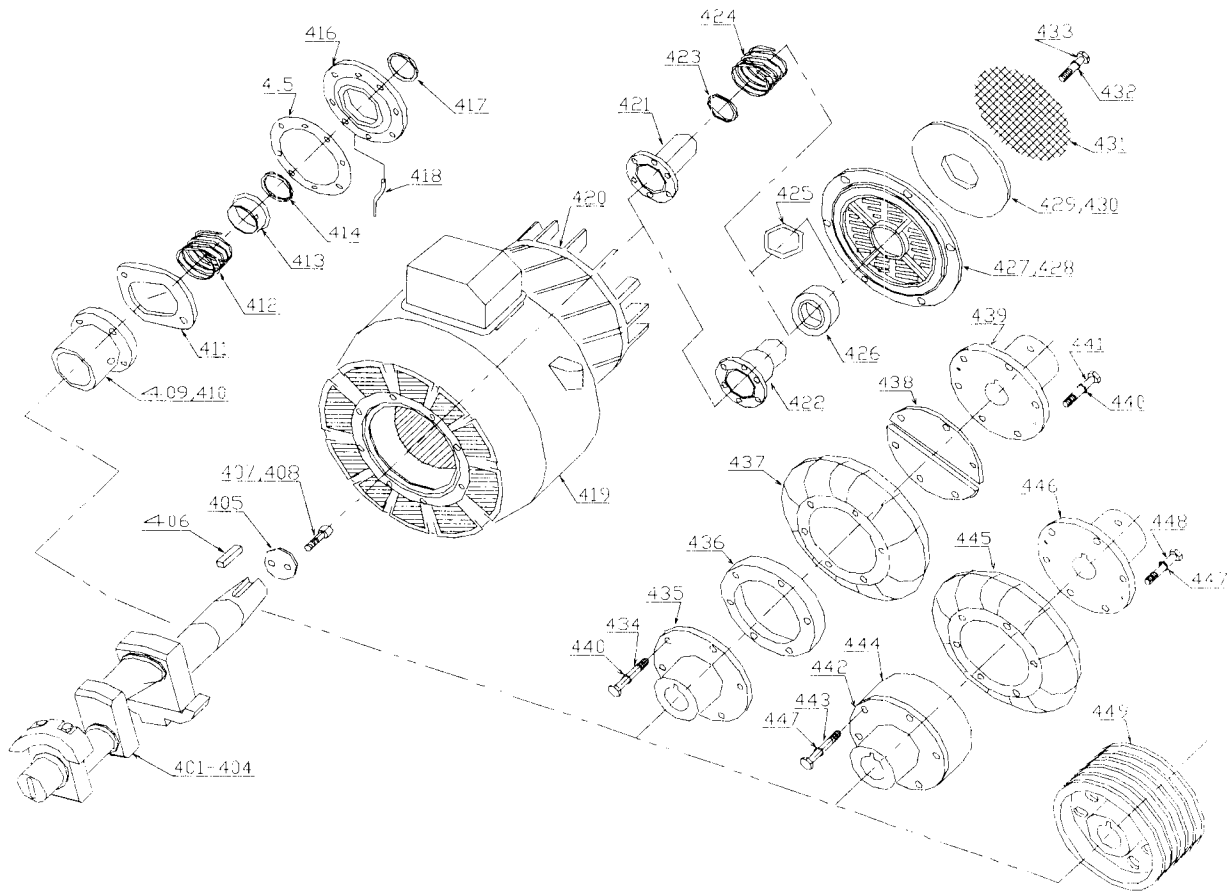


FIG VMVM1 M4-11.4.1.VER4.1

Ref No	Parts Name Code	Category	Parts Name	VMI								Remarks	
				3	21	4	31	6	42	8	62		
4L401	13083800	S	VML6-62 Crankshaft										
4L402	13083900	S	VML6-42 Crankshaft										
4L403	13084000	S	VML4-31 Crankshaft										
4L404	13084100	S	VML3-21 Crankshaft										
4L405	13080300		VM* Set PI Crankshaft Key										
4L406	13080400		VM* Crankshaft Key										
4L407	29013500		Bolt w/ Hex Hole M12X40										
4L408	29054400		Bolt w/ Hex Hole M12X65										
4L409	13073000		VM*3-4 Front Main Metal										FI Motor Comp
4L410	13073100		VM*6-8 Front Main Metal										
4L411	13080500		VM* Spring Ret M/S										
4L412	13056200		VM*SPI150 Spring M/S										
4L413	13004500		VM*SPI150 Rotate Ring (ASM)St										Sold as (ASM)SET
4L414	13060700		VM*SPI150 Seal Ring M/S										
4L415	17001400		VM*SPI150 PK NA M/S Cvr PI										
4L416	13071500		VM*SPI150 M/S Cvr PI										
4L417	13075500		VM*SPI150 Dust Seal										
4L418	13080600	*	VM* Drain Pipe M/S										
4L419	19006600	*	VM* Motor Stator (ASM)St										V/Hz Option, Sold as ASM SET
4L420	19006700	*	VM* Motor Rotor										Varies Depend on Motor Stator
4L421	13072300		VM* Motor End Shaft (22/30kW)										FI Motor Comp 22/30kW)
4L422	13015700		VM*VZ* Motor End Shaft										FI Motor Comp
4L423	13072500		VM* Sp Retain M Bearing 22/30										FI Motor Comp 22/30kW)
4L424	13072400		VM* Spring M Bearing (22/30kW)										FI Motor Comp 22/30kW)
4L425	13015900		VM*VZ* Spring M Bearing										FI Motor Comp
4L426	13015800		VM*VZ* Motor Bearing										FI Motor Comp
4L427	13080700	*	VM* Motor End Cvr 22/30kW										FI Motor Comp 22/30kW)
4L428	13005200	*	VM*VZ* Motor End Cvr 45-90kW										FI Motor Comp
4L429	13076100		VM* M.A. Filter 39 [22/30]										FI Motor Comp 22/30kW)
4L430	13016000		VM*VZ* M.A. Filter 46 [45-90]										FI Motor Comp
4L431	13016200		VZ* M.A. Filter P [22-90]										FI Motor Comp
4L432	29054900		Washer M20 (High Tensile)										FI Motor Comp
4L433	29006800		Hexagon Bolt M20x14										FI Motor Comp

Ref No.	Parts Name Code	Category	Parts Name	VML								Remarks		
				3	21	4	31	6	42	8	62			
4L434	29068000		Hexagon Bolt (11T) M18X100					6		6				CA445
4L435	14114300	*	VM* Cuplg Flg (C) CA445					1		1				CA445
4L436	14114400	*	VM* Cuplg Spacer CA445					1		1				CA445
4L437	14102000	*	VM*VZ* Cuplg Tire CA445					1		1				CA445
4L438	14102100	*	VM*VZ* Cuplg Spacer CA445					1		1				CA445
4L439	14102200	*	VM*VZ* Cuplg Flg (M) CA445					1		1				CA445
4L440	29055000		Spring Washer M18					12		12				CA445
4L441	29054600		Hexagon Bolt M18X75(11T)					6		6				CA445
4L442	14114500	*	VM* Cuplg Flg (C) CA340	1	1	1	1		1				1	CA340
4L443	29068100		Hexagon Bolt (11T) M16X130	6	6	6	6		6				6	CA340
4L444	14114600	*	VM* Cuplg Spacer CA340	1	1	1	1		1				1	CA340
4L445	14114700	*	VM* Cuplg Tire CA340	1	1	1	1		1				1	CA340
4L446	14114800	*	VM* Cuplg Flg (M) CA340	1	1	1	1		1				1	CA340
4L447	29023800		Spring Washer M16	12	12	12	2		12				12	CA340
4L448	29068200		Hexagon Bolt (11T) M16X50	6	6	6	6		6				6	CA340
4L449	19006800	*	VM* Flywheel											V-Belt Drive
4L450	15010300		VML8-62 Crankshaft(ASM)St											Sold as (ASM)SET
4L451	15009300		VML6-42 Crankshaft(ASM)St											Sold as (ASM)SET
4L452	15010400		VML4-31 Crankshaft(ASM)St											Sold as (ASM)SET
4L453	15010500		VML3-21 Crankshaft(ASM)St											Sold as (ASM)SET
4L454	15008000		VM*SP150 M/S (ASM)St NA											Sold as (ASM)SET
4L455	15008200		VM*SP150 M/S Rep (ASM)St NA											Sold as (ASM)SET

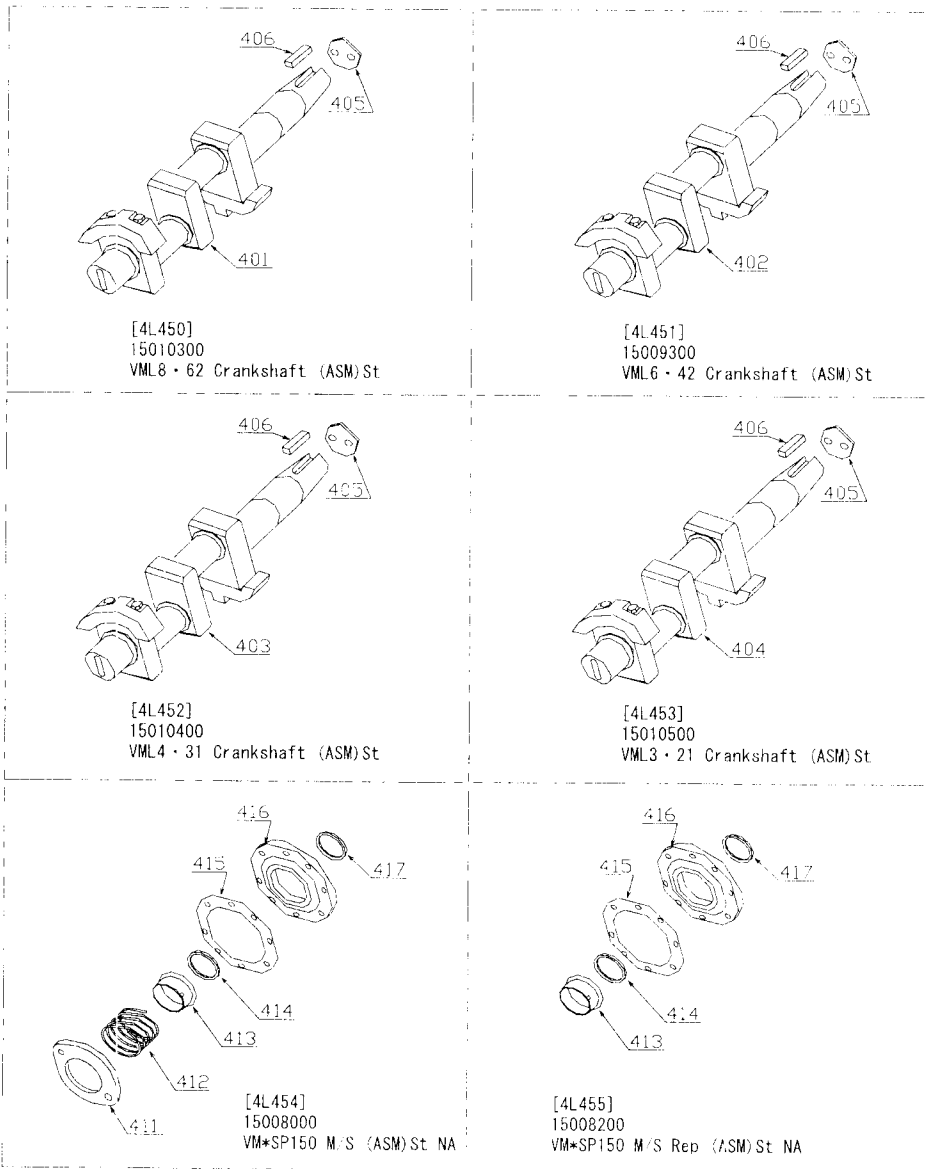


FIG VMVMI (M4-21 4-2) VER 1

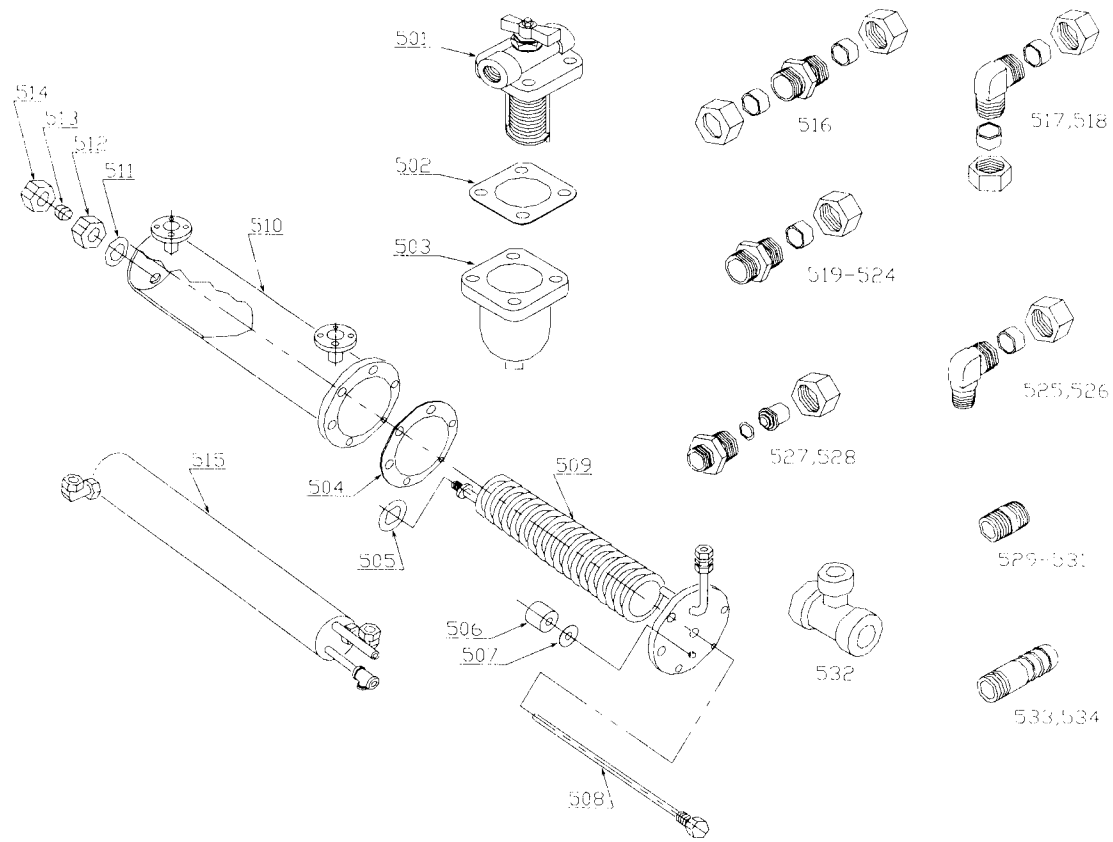


FIG VVM1 (M5-11.5-1) VFR4.1

Ref No.	Parts Name Code	Qty	Parts Name	VML								Remarks	
				3	21	4	31	6	42	8	82		
41.501	1500700		VM*VZ O. Filter Cvr (ASM)St										Sold as (ASM)SET
41.502	1701900		VM*VZ*PK NA O. Filter Cvr										
41.503	13005600		VM*VZ O. Filter Body										
41.504	17017100	S	VMVL PK W. C. O. Cooler Flg A										
41.505	17016700	S	VMVL PK W. C. O. Cooler C										
41.506	13069400		ZAP65										
41.507	17012600		PK ZAP40.50.65										Sea Water
41.508	13098200		VMVL MGNAP 19-05										Sea Water, Synthetic Rubber F.W
41.509	15401700	*	VMVL W. C. O. Cooler Coil(PD)St										
41.510	15007700		VMVL W. C. O. Cool Shell(ASM)St										Sold as (ASM)SET
41.511	13069700		VMVL Washer W. C. O. Cool Coil										
41.512	13069600		VMVL Nut W/C O. Cooler Coil										
41.513	05042000		Sleeve Sleeve Joint 1.2(MS)										W/C Oil Cooler Piping
41.514	05041000		Nut Sleeve Joint 1.2(MN)										W. C. Oil Cooler Piping
41.515	15002900		VM*VZ*VL R/C O. Cool (ASM)St										Sold as (ASM)SET
41.516	05020700		Sleeve Joint E1/2(MU)										W. C. Oil Cooler Piping
41.517	05020900		Sleeve Joint F1/2(MLJ)										W. C. O. Cool. Rear S. Oil Sup Piping
41.518	05021000		Sleeve Joint F3/4(MLJ)										R/C Oil Cooler Piping
41.519	05019400		Sleeve Joint A6xPT1/8(MC)										Unl Piping
41.520	05019500		Sleeve Joint A6xPT1/4(MC)										Connector: sl./Pl. M16mm sl./Pl
41.521	05019600		Sleeve Joint A6xPT3/8(MC)										Auto Unl Piping
41.522	05019700		Sleeve A6xPT3/8[G 1/2](MC)										Auto Unl Piping, 1.2mm Orifice
41.523	05019900		Sleeve Joint A3.8xPT3.8(MC)										Oil Drop Piping
41.524	05020700		Sleeve Joint A3.8xPT3.8(MC)										Oil Filter Outlet
41.525	05020300		Sleeve Joint A3.4xPT3.4(MC)										Case Side Unl Piping
41.526	05020600		Sleeve Joint B3.4xPT3.4(MLN)										Oil Filter Inlet
41.527	05025400		Pipe Joint. S25C; 8x8A										Marine Press Gauge Piping
41.528	05025500		Pipe Joint. S25C; 10x10A										Oil Return V
41.529	05019000		Nipple #80 3A										Gauge Root Valve
41.530	05019100		Nipple #80 10A										Oil Return V
41.531	05019200		Nipple #80 15A										Purge Root Valve
41.532	05035900		T-Piece(thread rim) 13A										Auto Unl Piping
41.533	05126400		Nozzle (SUS) 10A										Oil Supply Valve

Ref No.	Parts Name Code	Category	Parts Name	VMI								Remarks	
				3	21	4	31	6	42	8	62		
4L534	05126500		Nozzle (SUS) 15#										Purge Root Valve
4L535	15007500		VMVL W/C O/Cool C(ZAP)(ASM)St										Sold as (ASM)SET
4L536	15007600		VMVL W/C O/Cool C(MAG)(ASM)St										Sold as (ASM)SET
4L537	15007300		VMVL W/C O/Cool ZAP(ASM)St										Sold as (ASM)SET
4L538	15007400		VMVL W/C O/Cool MAG(ASM)St										Sold as (ASM)SET
4L539	15207200		VMVL PK St W/C O/Cooler										Sold as Set
4L540	15003500		VM*VZ* O/Filter Cvr(ASM)StNA										Sold as (ASM)SET
4L541	15003400		VM*VZ* O/Filter (ASM)St NA										Sold as (ASM)SET

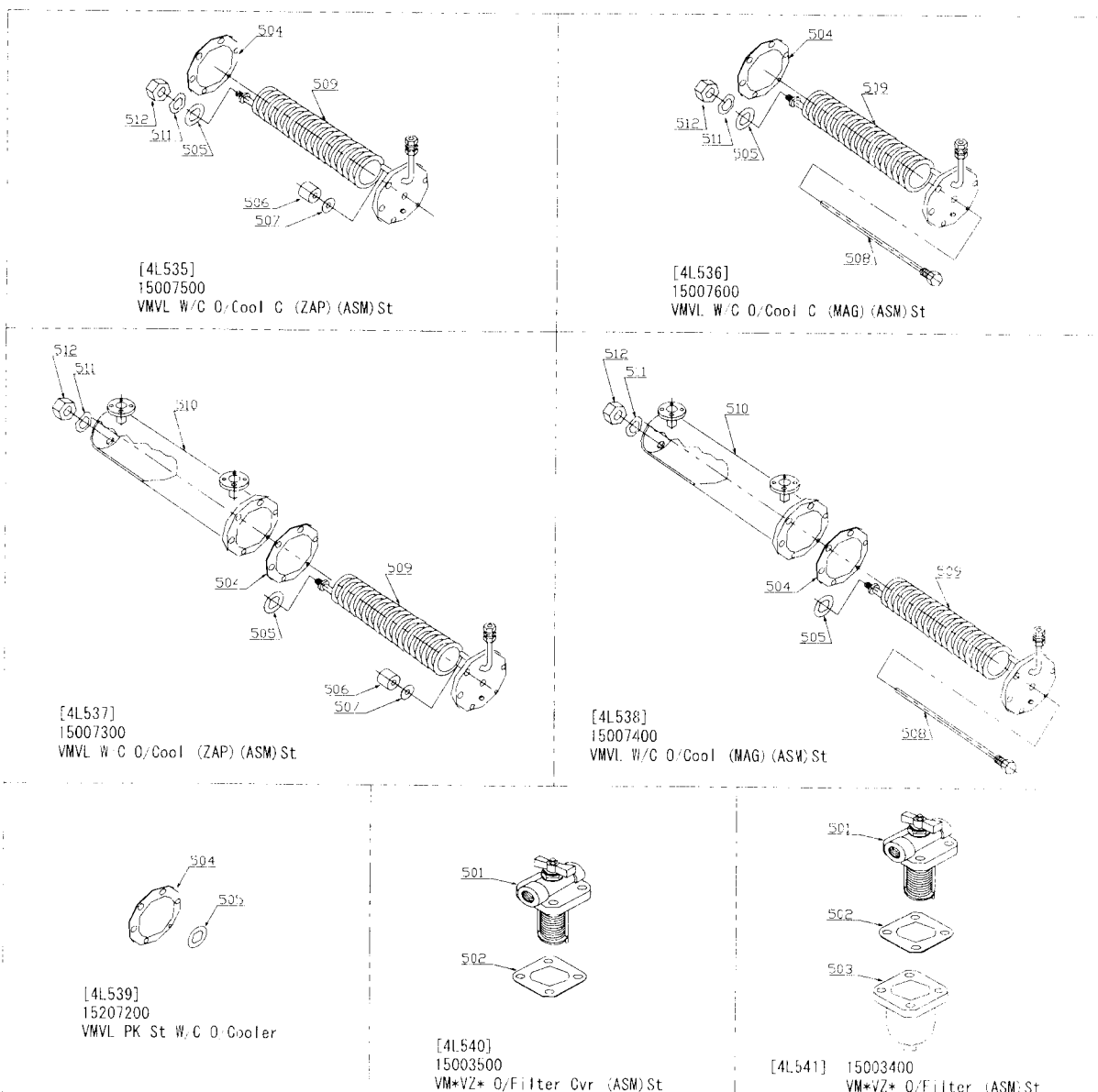


FIG VMVL_M5-2L5-2:VER4.1

Ref. No.	Parts Name Code	Category	Parts Name	VMI								Remarks		
				3	21	4	31	6	42	8	62			
4L601	21008700		Safety V 1.80M 10A											
4L602	21008800		Safety V 1.93M 10A											
4L603	21009300		Safety V 1.18M 15A											
4L604	21009500		Safety V 1.90M 15A											
4L605	21009600		Safety V 1.93M 15A											
4L606	21010100		Safety V 1.18M 20A											
4L607	21010300		Safety V 1.80M 20A											
4L608	21010400		Safety V 1.93M 20A											
4L609	21010900		Safety V 1.18M 25A											
4L610	21011100		Safety V 1.80M 25A											
4L611	21011200		Safety V 1.93M 25A											
4L612	21011700		Safety V 1.18M 32A											
4L613	21011900		Safety V 1.80M 32A											
4L614	21012000		Safety V 1.93M 32A											
4L615	21012500		Safety V 1.18M 40A											
4L616	21012700		Safety V 1.80M 40A											
4L617	21012800		Safety V 1.93M 40A											
4L618	21013300		Safety V 1.18M 50A											
4L619	21013500		Safety V 1.80M 50A											
4L620	21013600		Safety V 1.93M 50A											

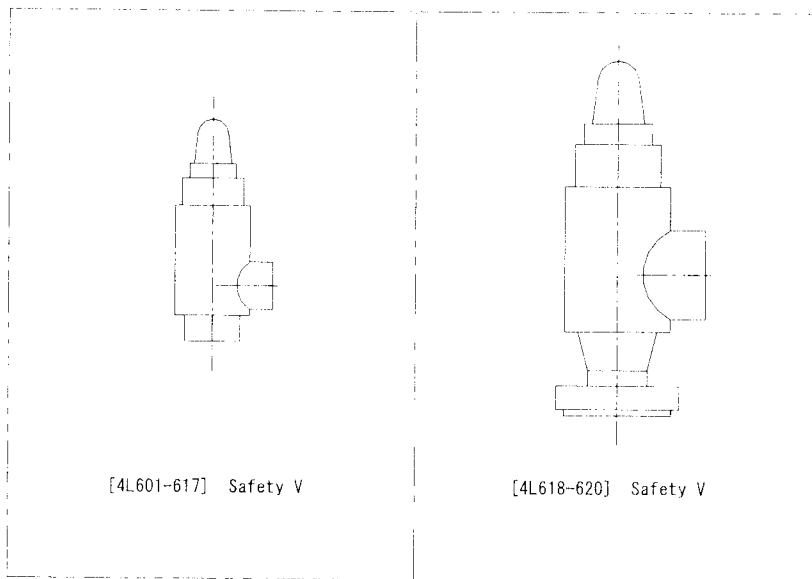


FIG. VM/VML(M6-1LE-1)VER4.1



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