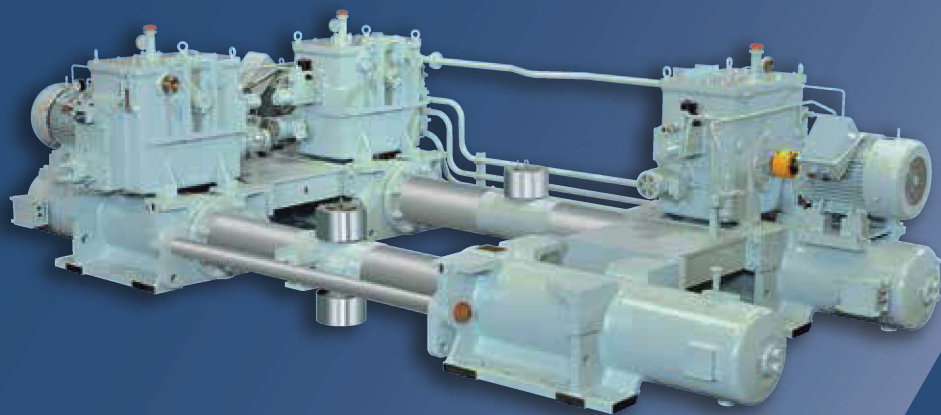


Рулевые устройства судов KAWASAKI серии E

Технические характеристики

Kawasaki Electro-hydraulic Steering Gear



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Якутск (4112)23-90-97
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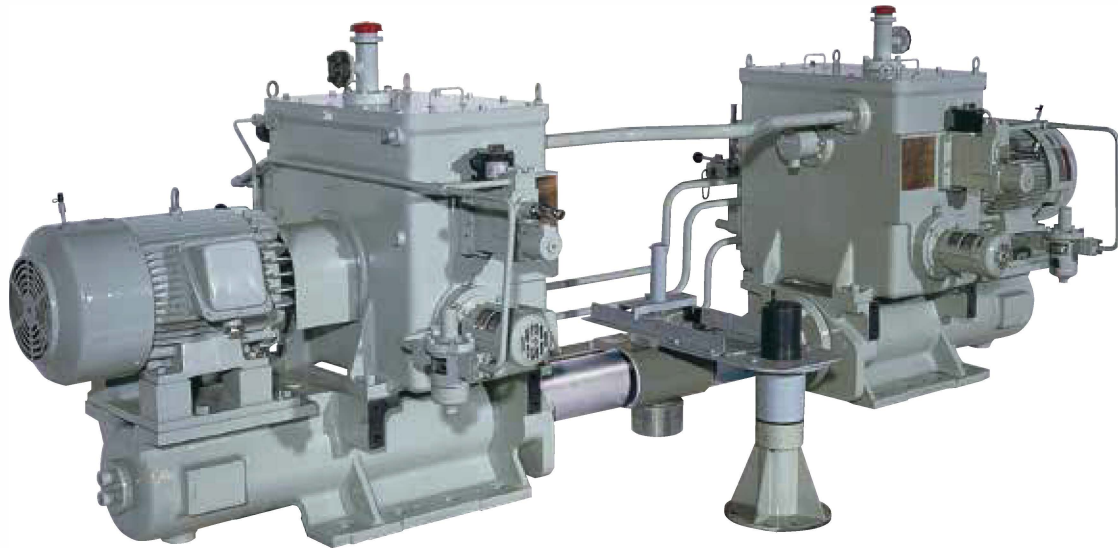
Россия (495)268-04-70

Казахстан (772)734-952-31

Киргизия (996)312-96-26-47

E Series

TYPE **RE** for 35 deg.



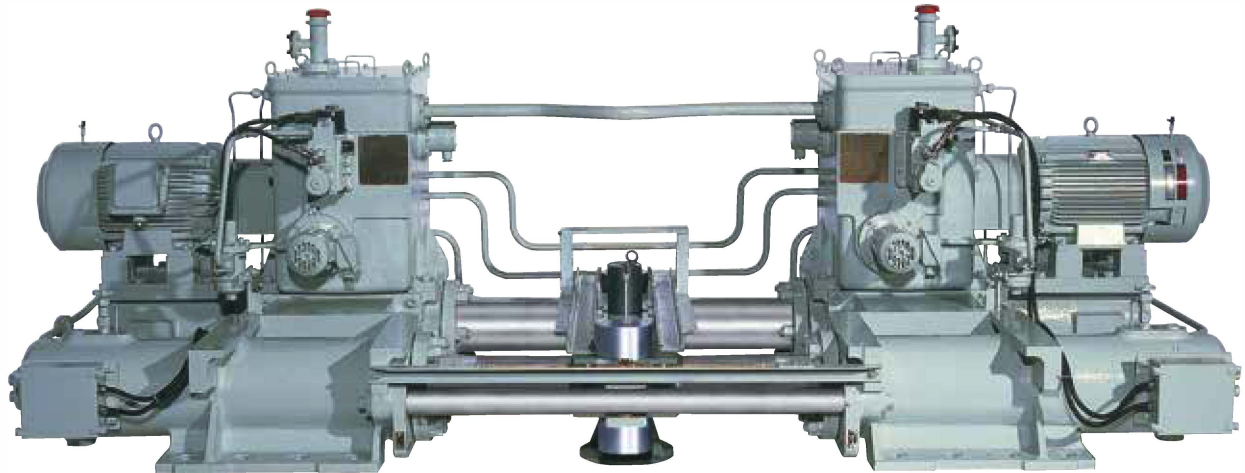
RE21

ARTICULARS & DIMENSIONS

Particulars			Type	RE21-032	RE21-036	RE21-045	RE21-051 RE22-051	RE21-063 RE22-063	RE21-070-20 RE22-070-20	RE21-086-20 RE22-086-20	RE21-104-20 RE22-104-20	RE21-122-20 RE22-122-20	RE21-144-20 RE22-144-20	RE21-175-20 RE22-175-20	
Torque at 35 deg. and max. working pressure			kN·m	314	353	441	500	618	687	844	1,020	1,200	1,410	1,720	
			t·m	32	36	45	51	63	70	86	104	122	144	175	
Rudder turning angle			deg	70											
Rudder turning speed			deg/s	65 / 28											
Normal radius of tiller arm			mm	465	510		580		640		685	715	760	815	
Max. working pressure			MPa	23.5	19.2	23.5	19.2	23.5	19.2	23.5	23.5	23.5	23.5	23.5	
Safety valve set pressure			MPa	29.4	24.0	29.4	24.0	29.4	24.0	29.4	29.4	29.4	29.4	29.4	
RE21	Main pump	Pump type × number		LV-030 × 2			LV-060 × 2					LV-090 × 2		LV-120 × 2	
		Motor output × number	kW	11 × 2	11 × 2	15 × 2	15 × 2	18.5 × 2	22 × 2	25 × 2	30 × 2	37 × 2	45 × 2	50 × 2	
		Motor synchronous speed	min ⁻¹	1,800											
		Motor rating	25% cont. , 100% 1h. , 200% 30s.												
	Servo pump	Pump type × number		TOP 203 × 2											GN206 × 2
		Motor output × number	kW	0.4 × 2											0.75 × 2
		Motor synchronous speed	min ⁻¹	1,800											
		Motor rating	100% cont.												
RE22	Main pump	Pump type × number		—			LV-030 × 2					LV-060 × 2			
		Motor output × number	kW	—			7.5 × 2	11 × 2	11 × 2	15 × 2	15 × 2	18.5 × 2	22 × 2	25 × 2	
		Motor synchronous speed	min ⁻¹	—			1,800								
		Motor rating	—			25% cont. , 100% 1h. , 200% 30s.									
	Servo pump	Pump type × number		—			TOP 203 × 2								
		Motor output × number	kW	—			0.4 × 2								
		Motor synchronous speed	min ⁻¹	—			1,800								
		Motor rating	—			100% cont.									
Approx. dimensions			A	mm	2,000	2,100		2,300		2,450		2,615	2,700	2,850	3,050
			B	mm	1,066	1,076		1,151		1,177		1,140	1,205	1,220	1,305
			C	mm	—			1,075		1,101		1,070	1,155	1,170	1,232
			D	mm	190	200		212		236		250	265	280	300
			E	mm	305	290		325		360		428	445	470	500
			F	mm	1,035	1,180		1,295		1,355		1,370	1,450	1,500	1,630
			G	mm	—			1,250		1,310		1,330	1,450	1,490	1,540

E Series

TYPE **FE** for 35 deg.



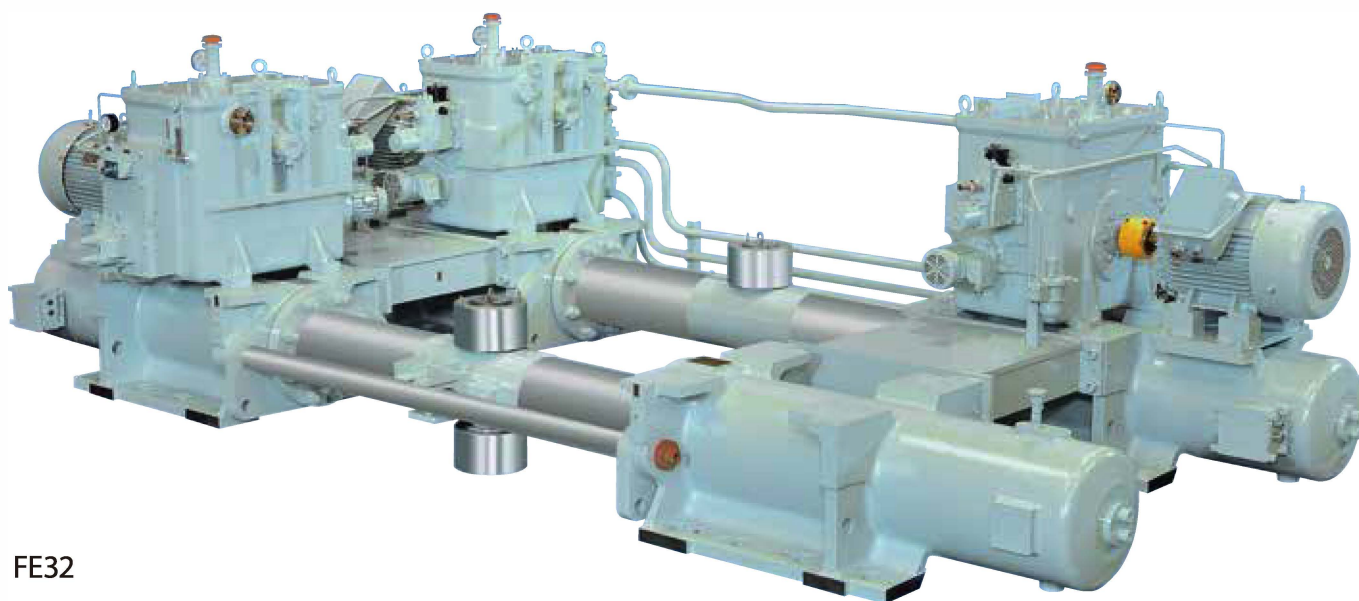
FE21

ARTICULARS & DIMENSIONS

Particulars			Type	FE21-053	FE21-064	FE21-072	FE21-090	FE21-102 FE22-102	FE21-126 FE22-126	FE21-140-20 FE22-140-20	FE21-172-20 FE22-172-20	FE21-207-20 FE22-207-20	FE21-243-20 FE22-243-20	FE21-288-20 FE22-288-20	FE21-350-20 FE22-350-20	FE21-400-20 FE22-400-20	FE21-485-20 FE22-485-20	FE21-560-20 FE22-560-20		
Torque at 35 deg. and max. working pressure			kN·m	520	628	706	883	1,000	1,240	1,370	1,690	2,030	2,380	2,820	3,430	3,920	4,760	5,490		
			t·m	53	64	72	90	102	126	140	172	207	243	288	350	400	485	560		
Rudder turning angle			deg	70																
Rudder turning speed			deg/s	65 / 28																
Normal radius of tiller arm			mm	465		510		580		640		685		715	760	815	850	905	905	
Max. working pressure			MPa	19.2	23.5	19.2	23.5	19.2	23.5	19.2	23.5	23.5	23.5	23.5	23.5	23.5	23.5	24.0		
Safety valve set pressure			MPa	24.0	29.4	24.0	29.4	24.0	29.4	24.0	29.4	29.4	29.4	29.4	29.4	29.4	29.4	30.0		
FE21	Main pump	Pump type x number		LV-060 × 2				LV-090 × 2		LV-120 × 2				LV-180 × 2		LV-260 × 2		LV-500 × 2		
		Motor output x number	kW	15 × 2	18.5 × 2	22 × 2	25 × 2	30 × 2	37 × 2	45 × 2	50 × 2	55 × 2	75 × 2	80 × 2	100 × 2	125 × 2	150 × 2	160 × 2		
		Motor synchronous speed	min ⁻¹	1,800															1,200	
		Motor rating		25% cont. , 100% 1h. , 200% 30s.																
	Servo pump	Pump type x number		TOP 203 × 2						GN 206 × 2						GN 212 × 2				
		Motor output x number	kW							1,800										
		Motor synchronous speed	min ⁻¹	0.4 × 2						0.75 × 2						1.5 × 2				
	Motor rating		100% cont.																	
FE22	Main pump	Pump type x number		—				LV-060 × 2				LV-090 × 2		LV-120 × 2		LV-180 × 2				
		Motor output x number	kW	—				1,800												
		Motor synchronous speed	min ⁻¹	—				15 × 2	18.5 × 2	22 × 2	25 × 2	30 × 2	37 × 2	45 × 2	50 × 2	55 × 2	75 × 2	80 × 2		
		Motor rating		—				25% cont. , 100% 1h. , 200% 30s.												
	Servo pump	Pump type x number		—				TOP 203 × 2						GN 206 × 2						
		Motor output x number	kW	—				0.4 × 2						0.75 × 2						
		Motor synchronous speed	min ⁻¹	—				1,800												
	Motor rating		—				100% cont.													
Approx. dimensions	A		mm	1,975		2,060		2,290		2,445		2,620	2,720	2,870	3,100	3,220	3,520	3,550		
		FE21	mm	1,085		1,095		1,160		1,250		1,260	1,385	1,400	1,525	1,535	1,790	1,805		
	B	FE22	mm	—				1,151		1,177		1,187	1,251	1,266	1,358	1,368	1,493	1,508		
		C	mm	190		200		212		236		250	265	280	300	315	335	355		
	D	mm	780		835		915		1,025		1,080	1,115	1,200	1,305	1,340	1,395	1,425			
	E	FE21	mm	1,180		1,225		1,460		1,540		1,585	1,745	1,790	1,920	1,955	2,130	2,150		
		FE22	mm	—				1,295		1,355		1,400	1,591	1,636	1,715	1,750	1,790	1,955		

E Series

TYPE **FE32** 102~560 for 35 deg.



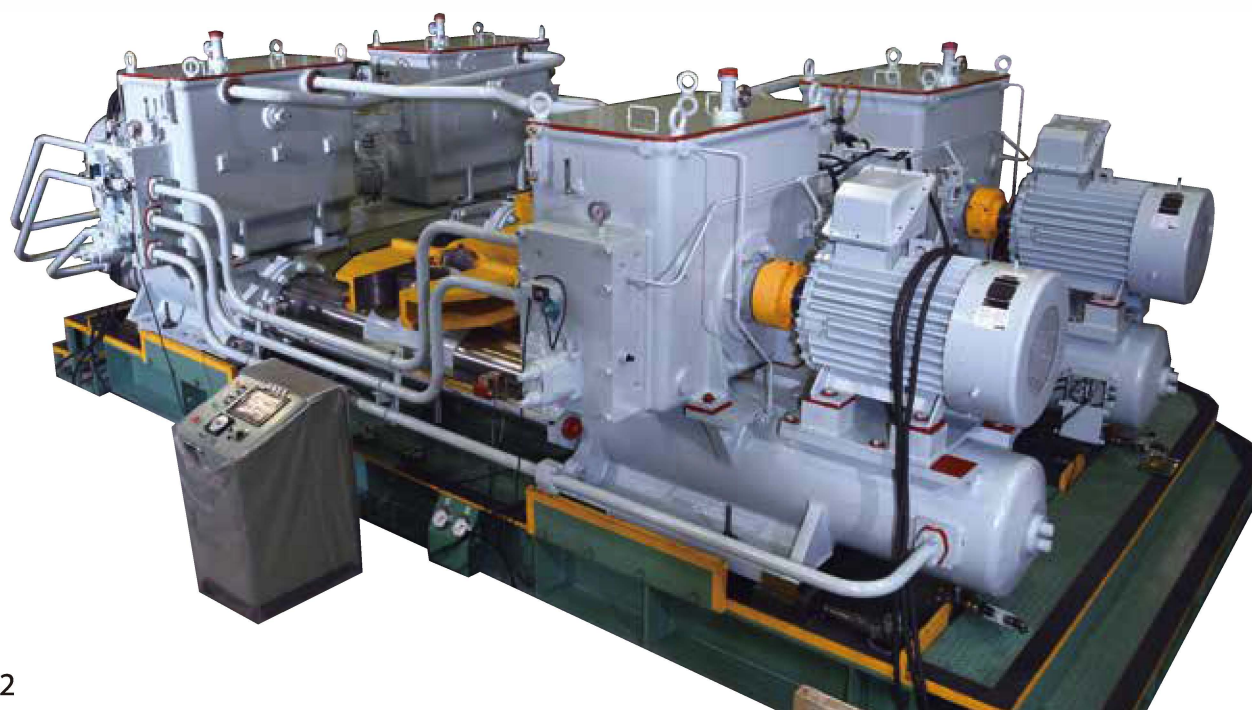
FE32

ARTICULARS & DIMENSIONS

Particulars			Type	FE32-102	FE32-126	FE32-140-20	FE32-172-20	FE32-207-20	FE32-243-20	FE32-288-20	FE32-350-20	FE32-400-20	FE32-485-20	FE32-560-20	
Torque at 35 deg. and max. working pressure			kN·m	1,000	1,240	1,370	1,690	2,030	2,380	2,820	3,430	3,920	4,760	5,490	
			t·m	102	126	140	172	207	243	288	350	400	485	560	
Rudder turning angle			deg	70											
Rudder turning speed			deg/s	65/28											
Normal radius of tiller arm			mm	580		640		685	715	760	815	850	905	905	
Max. working pressure			MPa	19.2	23.5	19.2	23.5	23.5	23.5	23.5	23.5	23.5	23.5	24.0	
Safety valve set pressure			MPa	24.0	29.4	24.0	29.4	29.4	29.4	29.4	29.4	29.4	29.4	30.0	
Main pump	Pump type x number			LV-060 x 3				LV-090 x 3		LV-120 x 3		LV-180 x 3			
	Motor output x number			15 x 3	18.5 x 3	22 x 3	25 x 3	30 x 3	37 x 3	45 x 3	50 x 3	55 x 3	75 x 3	80 x 3	
	Motor synchronous speed		kW	1,800											
	Motor rating		min ⁻¹	25% cont., 100% 1h., 200% 30s.											
Servo pump	Pump type x number			TOP203 x 3							GN206 x 3				
	Motor output x number		kW	0.4 x 3							0.75 x 3				
	Motor synchronous speed		min ⁻¹	1,800											
	Motor rating			100% cont.											
Approx. dimensions			A	mm	2,300		2,470		2,655	2,755	2,910	3,120	3,235	3,480	3,530
			B	mm	1,151		1,130		1,140	1,205	1,220	1,305	1,315	1,440	1,453
			C	mm	212		236		250	265	280	300	315	335	355
			D	mm	1,300		1,350		1,450	1,500	1,550	1,650	1,700	1,900	1,900
			E	mm	1,400		1,450		1,550	1,600	1,650	1,750	1,800	1,900	1,900

E Series

TYPE **FE** 685~1150 for 35 deg.



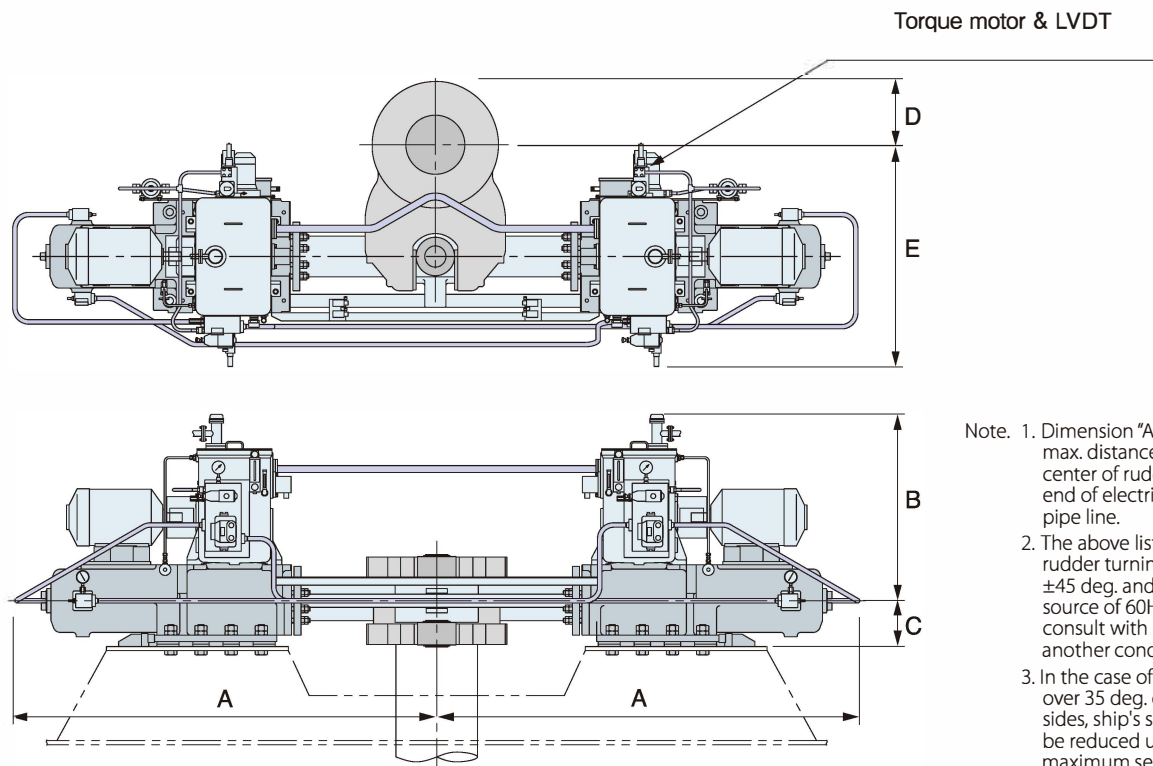
FE42

ARTICULARS & DIMENSIONS

Particulars				Type	FE42-685-20 FE32-685-20	FE42-785-20 FE32-785-20	FE42-825-20 FE32-825-20	FE42-1000-20 FE32-1000-20	FE42-1150-20 FE32-1150-20			
Torque at 35 deg. and max. working pressure				kN·m	6,720	7,700	8,090	9,810	11,280			
				t·m	685	785	825	1,000	1,150			
Rudder turning angle				deg	70							
Rudder turning speed				deg/s	65 / 28							
Normal radius of tiller arm				mm	990	995	1,055	1,125	1,160			
Max. working pressure				MPa	24.0							
Safety valve set pressure				MPa	30.0							
FE42	Main pump	Pump type x number			LV-260 × 4		LV-500 × 4					
		Motor output x number	kW	100 × 4	110 × 4	125 × 4	150 × 4	160 × 4				
		Motor synchronous speed	min ⁻¹	1,800		1,200						
	Motor rating			25% cont. , 100% 1h. , 200% 30s.								
	Servo pump	Pump type x number			GN 206 × 4		GN 212 × 4					
		Motor output x number	kW	0.75 × 4		1.5 × 4						
Motor synchronous speed		min ⁻¹	1,800									
Motor rating			100% cont.									
FE32	Main pump	Pump type x number			LV-260 × 3		LV-500 × 3					
		Motor output x number	kW	100 × 3	110 × 3	125 × 3	150 × 3	160 × 3				
		Motor synchronous speed	min ⁻¹	1,800		1,200						
		Motor rating			25% cont. , 100% 1h. , 200% 30s.							
	Servo pump	Pump type x number			GN 206 × 3		GN 212 × 3					
		Motor output x number	kW	0.75 × 3		1.5 × 3						
		Motor synchronous speed		min ⁻¹	1,800							
		Motor rating			100% cont.							
Approx. dimensions				A	FE42	mm	3,800	3,830	3,940	4,100	4,220	
					FE32	mm						
				B	FE42	mm	1,560	1,580	1,740	1,700	1,730	
					FE32	mm						
				C			mm	330	355	355	370	395
					FE42	mm	2,070	2,075	2,260	2,320	2,360	
				D	FE32	mm	2,015	2,020	2,240	2,300	2,360	
					FE42	mm	2,070	2,075	2,260	2,320	2,360	
E	FE32	mm	2,070	2,075	2,260	2,320	2,360					

E Series

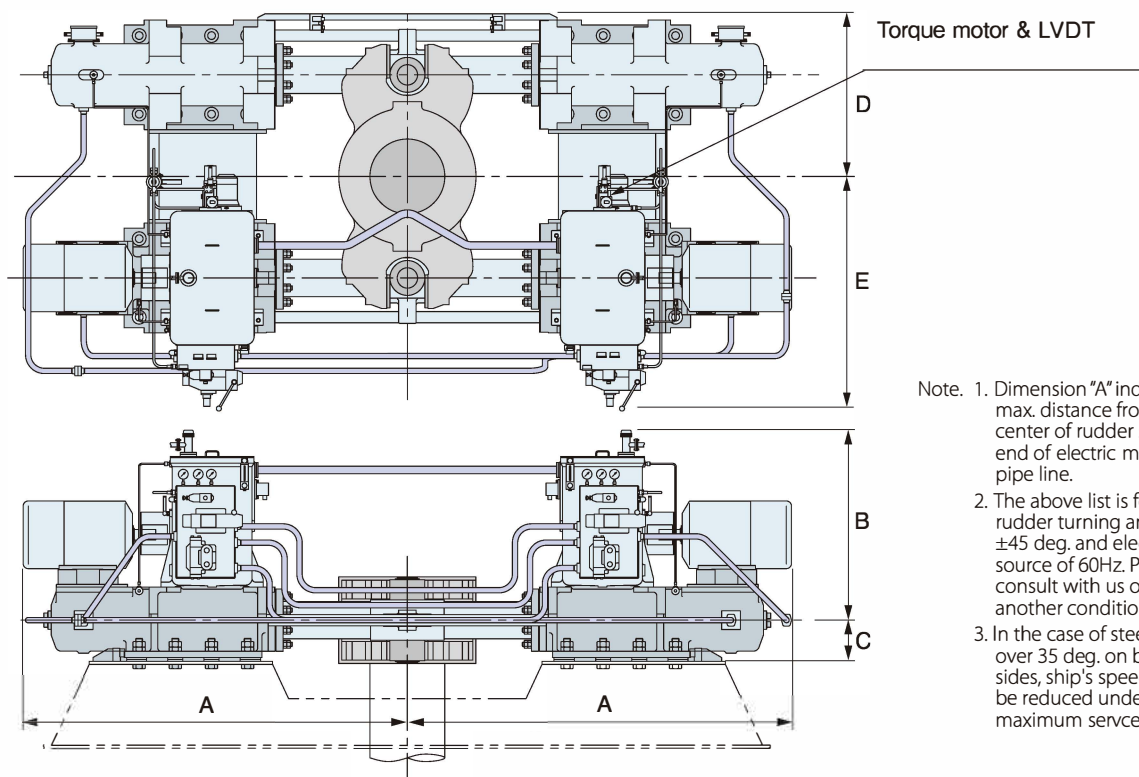
TYPE **RE** for 45 deg.



- Note. 1. Dimension "A" indicates max. distance from center of rudder stock to end of electric motor and pipe line.
2. The above list is for rudder turning angle of ± 45 deg. and electric source of 60Hz. Please consult with us on another condition.
3. In the case of steering over 35 deg. on both sides, ship's speed shall be reduced under half of maximum service speed.

ARTICULARS & DIMENSIONS

Particulars			Type	RE21-031	RE21-038	RE21-044 RE22-044	RE21-054 RE22-054	RE21-061 RE22-061	RE21-075 RE22-075		
Torque at 35 deg. and max. working pressure			kN·m	311	380	436	535	600	735		
			t·m	32	39	45	55	61	75		
Rudder turning angle			deg	90							
Rudder turning speed			deg/s	65/28							
Normal radius of tiller arm			mm	480		540		600			
Max. working pressure			MPa	18.0	22.0	18.0	22.0	18.0	22.0		
Safety valve set pressure			MPa	22.5	27.5	22.5	27.5	22.5	27.5		
RE21	Main pump	Pump type × number		LV-030 × 2		LV-060 × 2					
		Motor output × number	kW	11 × 2	11 × 2	15 × 2	18.5 × 2	18.5 × 2	22 × 2		
		Motor synchronous speed	min ⁻¹	1,800							
	Servo pump	Motor rating		25% cont. , 100% 1h. , 200% 30s.							
		Pump type × number		TOP 203 × 2							
		Motor output × number	kW	0.4 × 2							
		Motor synchronous speed	min ⁻¹	1,800							
Motor rating		100% cont.									
RE22	Main pump	Pump type × number		—		LV-030 × 2					
		Motor output × number	kW	—		7.5 × 2	11 × 2	11 × 2	11 × 2		
		Motor synchronous speed	min ⁻¹	—		1,800					
		Motor rating		—		25% cont. , 100% 1h. , 200% 30s.					
	Servo pump	Pump type × number		—		TOP 203 × 2					
		Motor output × number	kW	—		0.4 × 2					
		Motor synchronous speed	min ⁻¹	—		1,800					
		Motor rating		—		100% cont.					
Approx. dimensions			A	mm	2,350		2,560		2,815		
			B	RE21	mm	1,025		1,160		1,250	
				RE22	mm	—		1,075		1,101	
			C	mm	200		212		236		
			D	mm	350		355		390		
			E	RE21	mm	1,125		1,420		1,500	
				RE22	mm	—		1,210		1,270	



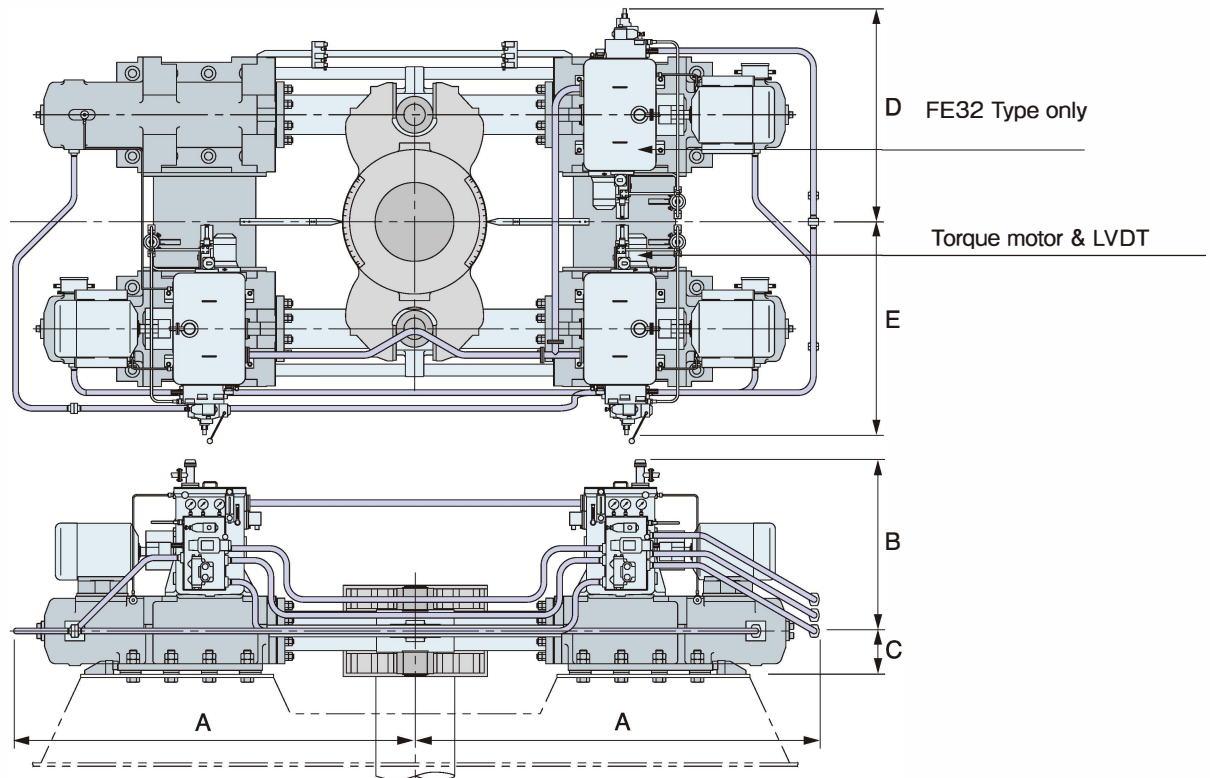
- Note. 1. Dimension "A" indicates max. distance from center of rudder stock to end of electric motor and pipe line.
2. The above list is for rudder turning angle of ± 45 deg. and electric source of 60Hz. Please consult with us on another condition.
3. In the case of steering over 35 deg. on both sides, ship's speed shall be reduced under half of maximum service speed.

ARTICULARS & DIMENSIONS

Particulars				Type	FE21-063	FE21-077	FE21-089 FE22-089	FE21-109 FE22-109	FE21-122 FE22-122	FE21-150 FE22-150	FE21-177 FE22-177	FE21-212 FE22-212	FE21-251 FE22-251	FE21-310 FE22-310	FE21-356 FE22-356	FE21-430 FE22-430	FE21-507 FE22-507			
Torque at 35 deg. and max. working pressure				kN·m	622	760	873	1,070	1,200	1,470	1,740	2,080	2,460	3,040	3,490	4,220	4,970			
				t·m	63	78	89	109	122	150	177	212	251	310	356	430	507			
Rudder turning angle				deg	90															
Rudder turning speed				deg/s	65/28															
Normal radius of tiller arm				mm	480		540		600		635	675	715	765	800	855	900			
Max. working pressure				MPa	18.0	22.0	18.0	22.0	18.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0			
Safety valve set pressure				MPa	22.5	27.5	22.5	27.5	22.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5		
FE21	Main pump	Pump type x number			LV-060 x 2		LV-090 x 2		LV-120 x 2			LV-180 x 2		LV-260 x 2		LV-500 x 2				
		Motor output x number		kW	18.5 x 2	22 x 2	25 x 2	37 x 2	37 x 2	45 x 2	55 x 2	75 x 2	75 x 2	90 x 2	100 x 2	125 x 2	150 x 2			
		Motor synchronous speed		min ⁻¹	1,800													1,200		
		Motor rating			25% cont. , 100% 1h. , 200% 30s.															
	Servo pump	Pump type x number			TOP 203 x 2				GN 206 x 2						GN 212 x 2					
		Motor output x number		kW	0.4 x 2				0.75 x 2						1.5 x 2					
		Motor synchronous speed		min ⁻¹	1,800															
		Motor rating			100% cont.															
FE22	Main pump	Pump type x number			—		LV-060 x 2				LV-090 x 2		LV-120 x 2		LV-180 x 2					
		Motor output x number		kW	—		15 x 2	18.5 x 2	18.5 x 2	22 x 2	25 x 2	30 x 2	37 x 2	45 x 2	55 x 2	75 x 2	75 x 2			
		Motor synchronous speed		min ⁻¹	—		1,800													
		Motor rating			—		25% cont. , 100% 1h. , 200% 30s.													
	Servo pump	Pump type x number			—		TOP 203 x 2						GN 206 x 2							
		Motor output x number		kW	—		0.4 x 2						0.75 x 2							
		Motor synchronous speed		min ⁻¹	—		1,800													
		Motor rating			—		100% cont.													
Approx. dimensions				A	FE21	mm	2,270		2,560		2,815		3,010	3,170	3,350	3,570	3,725	4,000	4,250	
					FE22	mm	—													
				B	FE21	mm	1,095		1,160		1,250		1,260	1,525	1,400	1,525	1,535	1,790	1,805	
					FE22	mm	—													
				C			mm	200		212		236		250	300	280	300	315	335	355
					FE21	mm	805													
				D			mm	—		875		985		1,030	1,075	1,155	1,255	1,290	1,345	1,400
					FE21	mm	1,195													
E			mm	—		1,255		1,315		1,350	1,551	1,591	1,665	1,700	1,740	1,930				

E Series

TYPE FE32 for 45 deg.



- Note:
1. Dimension "A" indicates max. distance from center of rudder stock to end of electric motor and pipe line.
 2. The above list is for rudder turning angle of ± 45 deg. and electric source of 60Hz. Please consult with us on another condition.
 3. In the case of steering over 35 deg. on both sides, ship's speed shall be reduced under half of maximum service speed.

ARTICULARS & DIMENSIONS

Particulars		Type	FE32-600	FE32-725
Torque at 35 deg. and max. working pressure	kN·m		5,880	7,110
	t·m		600	725
Rudder turning angle	deg		90	
Rudder turning speed	deg/s		65/28	
Normal radius of tiller arm	mm		955	1,015
Max. working pressure	MPa		22.0	22.0
Safety valve set pressure	MPa		27.5	27.5
Main pump	Pump type x number		LV-260 x 3	
	Motor output x number	kW	90 x 3	110 x 3
	Motor synchronous speed	min ⁻¹	1,800	
	Motor rating		25% cont., 100% 1h., 200% 30s.	
Servo pump	Pump type x number		GN206 x 3	
	Motor output x number	kW	0.75 x 3	
	Motor synchronous speed	min ⁻¹	1,800	
	Motor rating		100% cont.	
Approx. dimensions		A mm	4,575	4,910
		B mm	1,580	1,840
		C mm	375	400
		D mm	2,040	2,185
		E mm	2,040	2,215

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