

Sulzer 16 ZAV 40 S

Specification and Major Equipment List

Engine No.	1#	2#	3#	4#	5#	6#
Manufacturer	NEW SULZER	NEW SULZER	NEW SULZER	NEW SULZER	NEW SULZER	NEW SULZER
Model	16ZAV40 S	16ZAV40S	16ZAV40S	16ZAV40S	16ZAV40S	16ZAV40S
Qty	1	1	1	1	1	1
Serial number	740463	740464	740363	740364	740465	740317
Generator	GEC ALSTHO M	GEC ALSTHOM	GEC ALSTHOM	GEC ALSTHOM	GEC ALSTHOM	GEC ALSTHOM
Model	RP256-9 OB	RP256-90B	RP256-90B	RP256-90B	RP256-90B	RP256-100
Qty	1	1	1	1	1	1
Rating power (KW)	11520	11520	11520	11520	11520	11520
Rating voltage (V)	10500	10500	10500	10500	10500	10500
Speed (RPM)	500	500	500	500	500	500
Frequency	50	50	50	50	50	50
Turbo charger	ABB	ABB	ABB	ABB	ABB	ABB
Model	VTR454- 21	VTR454-11	VTR454-11	VTR454-11	VTR454-11	VTR454-21
Qty	2	2	2	2	2	2
Manufacture date	1996	1996	1996	1996	1996	1996
Running hour	27265	26677	26080	27695	22914	24493
Runing hour after last overhualing	1500	1500	1500	1500	1500	2000

Mechanical Equipment List

S.N.	Name of equipment	quantity	Model
1	LFO daily tank feeding pump 27P1	2	30 m ³ /h, 6 bar
2	LFO feeding pump filter 27F1	1	
3	LFO transfer pump 27P2	2	10 m ³ /h, 6 bar
4	LFO transfer pressure regulating valve	1	
5	F.O. daily tank feeding pump 28P2	2	55 m ³ /h, 4 bar
6	F.O. feeding pump filter 28F2	1	
7	F.O. transfer pump 28P1	2	
8	F.O. transfer pump 28P3	4	
9	F.O. feeding pump	2	
10	F.O. feeding pump filter 28F2	1	
11	LFO feeding pump	2	
12	LFO feeding pump filter 27F2	1	
13	F.O. daily tank feeding pump 28P1	1	
14	LFO daily tank feeding pump 27P3	1	
15	F.O. pump	1	
16	Lube oil feeding pump 25P1	1	
17	Lube oil daily tank feeding pump	2	
18	Filth oil pump	1	
19	LFO transfer pump 27P2	2	

Fuel booster skid including 26S1		6	
20	F.O. steam heater 26E1	6	
21	Automatic F.O. filter duplex 26F1	6	
22	F.O. booster pump 26P1	6	6.9m ³ /h, 11.5bar
23	Fuel oil mixing tank 26V1	6	
24	Leakage oil recovery tank 29V1	2	
25	Recovery tank lightering pump 29P1	2	1 m ³ /h, 3 bar
F.O. centrifugal skid including 28S1		1	
26	F.O. separator 28N1	3	FOPX613TFD-24-50
27	F.O. separator steam heater 28E1	3	1000 B-GB
28	Control box	3	EC2
29	Electric flow heater	2	4600WN
F.O. sludge vessel 36V1 including		1	
30	Fuel oil separator residue extraction tank lightering pump 36P1	1	
31	Fuel oil separator residue extraction tank heater 36E1	1	
32	F.O. sludge vessel pneumatic valve	2	
33	Fuel oil separator feeding pump 28P3	4	1.7-10m ³ /h, 4 bar
34	Lube oil feeding pump 25P1	1	6.6m ³ /h, 3 bar

35	Expansion bellow L.O Pipe	12	
36	Lube oil pressure regulating valve	6	
37	Lub. Oil circulator tank 23V1	6	20.5m ³
38	Diesel engine main lubricant pump 23P1	6	ABQ110L5 IRYP A328
39	Lube oil primary filter 23F1 (auto filter)	6	LGM-280-AA-25-4-A06
40	Lube oil secondary filter 23F2 (safety filter)	6	1.03.2.420.500 DN200
41	Lube oil cooler 23E1	6	N51-34-012~16
42	Inlet lube oil pressure regulating valve	6	
43	L.O. temperature control valve TCV	6	
44	Cylinder liner L.O. tank 25V1	6	1m ³
45	Cylinder liner lube oil filter 24F1	6	
46	Lube oil temperature/pressure monitor	6 sets	
47	Lube oil pipeline and valves	6 sets	
Lube oil separator device 24S1 (lube oil separator)			
48	L.O. separator 24N1	5	WHPX-410TGD-24-50
49	L.O. steam heater 24E1	5	
50	Control panel	3	
51	Electric heater	5	

L.O. sludge oil tank including 36V2				3
52	Sludge tank heater 36E2	3		
53	Lube oil separator residue extraction tank lightering pump 36P2	3		
54	L.O. separator feed pump 24P1	6		4m ³ /h
55	Cylinder liner L.O. tank 25V1	6		1m ³
56	Cylinder liner water expansion tank 21V1	6		
57	Cylinder liner cooling water pump 21P1	5		AZ125-315/328
58	Cylinder liner cooling water condenser 21E1	5		N46-26-104~108
59	Cylinder liner cooling water temperature control valve	6		
60	Cylinder liner cooling water buffer tank 21V2	6		15L
61	Cylinder liner cooling water storage tank 21V3	2		5M ³
62	Cylinder liner cooling water storage lightering pump 21P3	1		10m ³ /h, 1.5 bar
63	Cylinder liner cooling water temperature / pressure monitor	6 sets		
64	Cylinder liner cooling water pipeline and valves	6 sets		
Oil atomizer cooling water tank including 22V1				6
65	Oil atomizer cooling water tank heater 22E1	6		N16N0.1,5
66	Oil atomizer cooling water pump 22P1	6		8 m ³ /h, 3.66 bar

67	Oil atomizer cooling water condenser 22E2	6	
68	Oil atomizer cooling water temperature control valve	6	
69	Oil atomizer cooling water pneumatic valve	6	
70	Oil atomizer cooling water temperature / pressure monitor	6 sets	
71	Diesel engine cooling water tower fans (electromotor)	6	
72	Raw water circulating pump 19P1	6	AZ 200-400/375-U3D-W1
73	Cooling water tower feeding pump	2	IS15125-100-200B&A
74	Air intake filter 33F1	6	
75	Air inlet silencer 33V1	6	
76	Turbine outlet expansion joint	12	
77	Boiler expansion joint	12	
78	Turbine inlet expansion joint	12	
79	Main engine turbo charger	12	VTR452-11
80	M.E. exhaust pipe and expansion bellow	96	KS81166&KS81258
81	Turbo charge out elbow pipe	12	
82	M.E. turbo charge inlet pipe square flange reduce	12	
83	M.E. air cooler air inlet pipe	12	
84	Exhaust pipe casing	6 sets	
85	Start-up air compressor 30K1 (30 bar)	2	L80II
86	Start-up air bottle 30V1 (30 bar)	3	2.6 m ³ /h, 30 bar

Power Plant Division

87	Control air compressor 30K3 (7 bar)	1	7 bar
88	Control air bottle 30V4 (7 bar)	1	7 bar
89	Start-up air buffer bottle 30V2	5	
90	Control air buffer bottle 30V3	5	
91	Control air filter 30F1	1	
92	Control air dryer 30E1	1	
93	Boiler	5 sets	
94	Boiler circulation water pump 32P1	3	HKP-SX-32 12S
95	Steam container	1	
96	Cooled condensates vessel 32V2	1	
97	Steam feeding pump 32P2	2	
98	Soft water producing device	1	
99	Soft water device feeding water pump 17P1	2	
100	Soft water feeding pump 17P2	2	
101	L.O. separator bowl	5	ALFA-LAVAL
102	F.O. separator bowl	3	ALFA-LAVAL
103	Coupling blots & foundation nuts	6 sets	

Electrical Equipment List:

S.N.	Name of equipment	quantity	Model
1	OBT4-24V DC battery charge panel	1	H3300LV 24V25A
2	OBT3-220V DC battery charge panel	1	H3300LV 220V60A
3	Battery		
OBF2-400V main distribution panel including			
4	Panel of OBF2 A 400V II	1	
5	Panel of OBF2 B 400V II. III	1	
6	Panel of OBF2 400V	3	
OBH2-220V main distribution panel including			
7	OBH2 BUS A panel	1	
8	OBH2 BUS B panel	1	
9	OCW11-15 Generator control protection panel	5	
10	OCW51/61-outging panel 2/3#	1	
11	Auxiliary transformer OBBT2/3#	1	
12	OCW08-supervisory and coupling	1	
13	Generator incoming panel	5	
14	Generator neutral frame and CT	6	
15	Generator neutral frame and PT	6	
16	Generator neutral terminal box	6	
17	OAK51-set up transformer 2# switch cabinet	1	
18	OAK61-set up transformer 3# switch cabinet	1	
19	OAK04-NO.2 auxiliary transformer feeder 2# switch cabinet	1	

20	OAK05-NO.3 auxiliary transformer feeder 3# switch cabinet	1	
21	OAK08-coupling bus tie switch cabinet	1	
22	OAK09 II. III CT	1	
23	OAK06-bus bar A voltage transformer PT	1	
24	OAK07-bus bar B voltage transformer PT	1	
25	Engine control panel (EC)	6	
26	Common engine control panel	1	
27	Auxiliary motor control panel	6	
28	Common auxiliary motor control panel	1	
29	Fuel pump house MCC	1	
30	Engine local regrouping box	6	
31	Auxiliary local regrouping box	6	
32	Expansion tanks regrouping box	2	
33	Expansion tanks level signal regrouping box	1	
34	Oil tank level signal regrouping box	4	
35	Turning gear control box	6	
36	Generator main excitation	6	
37	Generator secondary excitation	6	
38	Generator journal bearing	6	
39	Generator journal bearing bracket	6	
40	Pump	6	
41	Oil mist detector	6	VN115/87

42	Cooling tower fan switch control local box	5	
43	19P1 control local box for raw water pump	6	
44	Temperature sensor terminal box	5	
45	23P1 Control local box for lube oil pump	6	
46	27P2G/H control local box for diesel oil feed pump	4	
47	F.O. transfer pump 28P3I/J&K/L control local box	4	
48	Generator sensor terminal box	5	
49	29P1 F/G Control local box	2	
50	17P1 control local box for soft water device water supplying pump	1	
51	21P3 Control local box for liner water pump	2	
52	32P1 Control local box for steam circulation water pump	5	
53	32P2 Control local box for steam water pump	4	
54	33F1 Control local box for inlet air filter net	6	
55	Crankcase pressure switch	6	
56	Generator bottom level switch	5	
57	PT100 temperature sensor	45	
58	Carbon brush	5 sets	
59	24P1 control box for lube oil separator pump	6	
60	Temperature switch	Passel	
61	Diesel engine speed pick up sensor	6 sets	