

Technical Information • Data Sheet

R20

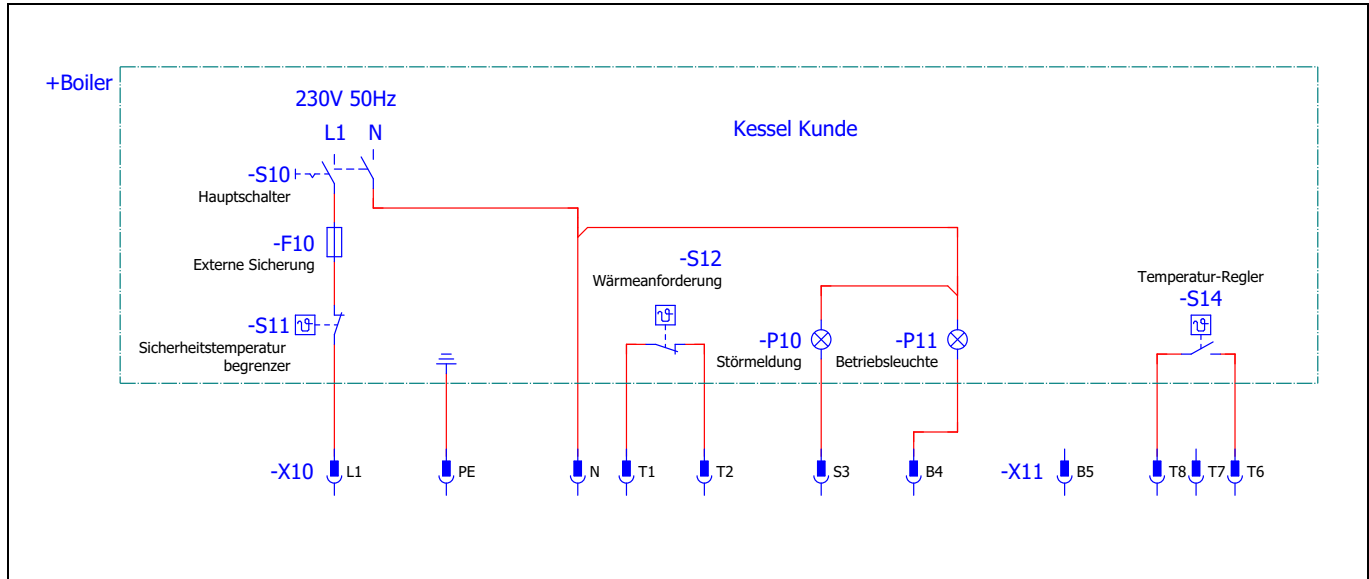
Issued April 2024
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changes in the interest of product im-
provement !

Oil



Electrical connections

Connection diagram for R20-ZS-L

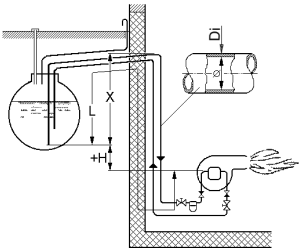


Oil connection

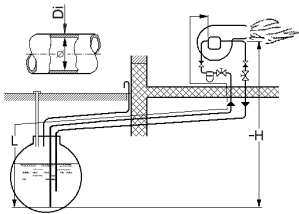
The table refers to heating oil EL 4.8 cSt and the inner diameter of the oil pipes. In the case of the suction line length 4 elbows, 1 valve and 1 check valve have been taken into consideration for the resistance. On account of possible gassing-off of the oil, dimension X should not exceed a length of 4 mtrs.

- Using the metal hoses provided connect the oil pump to the oil line.
- The pump should be connected to the feed and return lines (two-line system).
- If the tanks are positioned higher the pump can be converted to a single-line system.

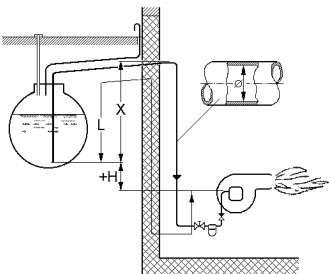
Two-pipe system



pump	Di [mm]	H [m]								
		4	3	2	1	0	-1	-2	-3	-4
Suntec or Danfoss	6	21	18	16	13	11	8	5	-	-
	8	67	58	50	42	34	25	17	9	-
	10	100	100	100	100	82	62	42	21	-



Single pipe system



Oil throughput [kg/h]	Di [mm]	H [m]								
		4	3	2	1	0	-1	-2	-3	-4
bis 2,5	4	77	68	58	49	40	31	22	13	-
	6	100	100	100	100	100	100	87	64	18
	8	100	100	100	100	100	100	100	100	56
2,5-5,0	4	39	34	29	25	20	16	11	6	-
	6	100	100	100	100	100	79	56	32	9
	8	100	100	100	100	100	100	100	65	28
5,0-10,0	4	19	17	15	12	10	8	-	-	-
	6	98	86	74	63	51	39	28	16	4
	8	100	100	100	100	100	100	88	51	14
10,0-23,0	6	42	37	32	27	22	17	12	7	-
	8	100	100	100	85	69	54	38	22	6

Technical specifications

Technical data	Burner type			
	R20(-WLE)	R20-V(-WLE)	R20-AE(-WLE)	R20-ZS-L(WLE)
Burner output in kW	36 - 166	36 - 77	36 - 166	
Boiler output in kW	33 - 153	31 - 71	33 - 153	
Fuel oil	Type EL, to DIN51603			
Method of operation	1-stage	1-stage	1-stage with startup relief	2-stage
Voltage	1 / N / PE ~50 Hz / 230 V			
Current consumption Max. start / operation in A	2.3 / 1.1	3.2 / 2.0	2.3 / 1.1	
Electric motor (2850rpm) in W	180			
Oil pump in l/h	54			
Photoelectric cell	QRB4			
Control box	LMO24			
Weight in kg	16.5	17.8	17.5	18.5
Noise emission in db(A)	≤ 73	≤ 65	≤ 73	≤ 73
Gasburner class	3			
NOx Limit value	≤ 120 mg/kWh			

Adjustment tables

R20(-AE)

Burner output	Boiler output where $\eta_k = 92\%$	Nozzle size	Nozzle spray angle	Oil pump pressure*	Oil throughput	Nozzle stem position dimension "A"
[kW]	[kW]	[USgal/h]	[°]	[bar]	[kg/h]	[mm]
40	37	0.75	60°S	13	3.4	13
45	41	0.85	60°S	13	3.8	15
55	51	1.00	60°S	13	4.6	16
60	55	1.10	60°S	13	5.1	18
65	60	1.25	45°S	13	5.5	19
75	69	1.35	45°S	13	6.3	20
85	78	1.50	45°S	13	7.2	22
95	87	1.75	45°S	13	8.0	23
110	101	2.00	45°S	13	9.3	26
125	115	2.25	45°S	13	10.6	29
140	129	2.50	45°S	13	11.8	32
150	138	2.75	45°S	13	12.7	39
165	152	3.00	45°S	13	13.9	50

*Startup relief pressure 10 bar

R20-V

Burner output	Boiler output where $\eta_k = 92\%$	Nozzle size	Nozzle spray angle	Oil pump pressure	Oil throughput	Nozzle stem position dimension "A"
[kW]	[kW]	[USgal/h]	[°]	[bar]	[kg/h]	[mm]
35	32	0.85	60°S/45°S	9.5	3.0	14
39	36	1.00	60°S/45°S	8.5	3.4	16
46	42	1.25	45°S	8.5	4.0	17
52	48	1.50	45°S	8.5	4.5	19
59	54	1.75	45°S	8.5	5.1	20
65	60	2.00	45°S	8.5	5.6	21
72	66	2.25	45°S	8.5	6.2	22

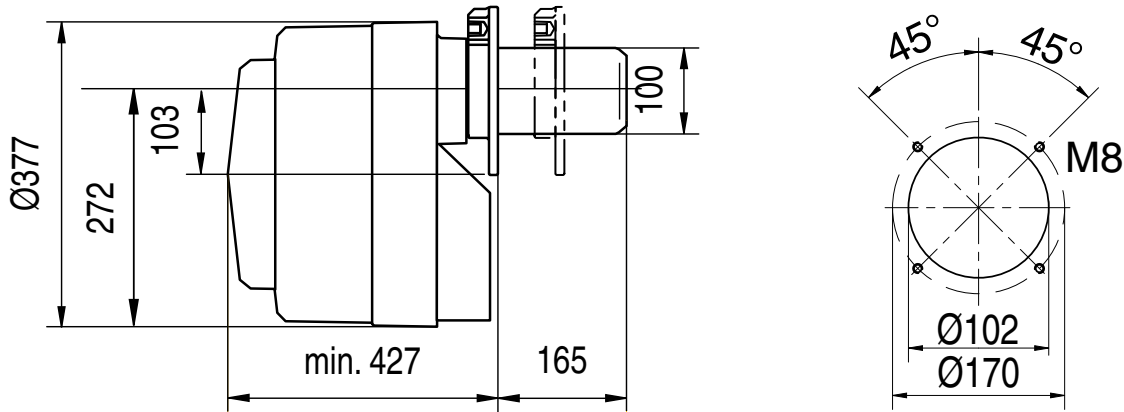
R20-ZS-L

Burner output		Boiler output where $\eta_k=92\%$	Nozzle size	Nozzle spray angle	Oil pump pressure		Oil throughput		Nozzle stem position dimension "A"	Air throttle position dimension "B"	Servomotor				Compression	
ST2	ST1				ST2	ST1	ST2	ST1			ST0	ST2	MV2	ST1	ST1	ST2
[kW]	[kW]	[kW]	[USgal/h]	[°]	[bar]	[bar]	[kg/h]	[kg/h]	[mm]	[mm]					[mbar]	[mbar]
49	36	45	0.75	60°S	20	10	4.2	3.0	7 - 9	15-17	0	80	10	5	3	6
56	39	52	0.85	60°S	20	10	4.8	3.3	9 - 11	16-19	0	80	15	8	3	6
66	43	61	1.00	45°S	20	10	5.	3.7	12-14	18-20	0	80	15	9	3	6
72	51	68	1.10	45°S	20	10	6.1	4.3	14 - 16	21-23	0	80	25	18	3	6
81	57.5	75	1.25	45°S	20	10	6.9	4.8	16-18	22-24	0	105	30	15	3	6
89	64	82	1.35	45°S	20	10	7.5	5.4	17-19	29-31	0	105	50	20	3	6
97	61	89	1.50	45°S	20	10	8.2	5.2	19-21	36-38	0	105	50	25	3	6
111	77	102	1.75	45°S	20	10	9.4	6.5	21-23	42-44	0	105	50	30	3	6
129	90	119	2.00	45°S	20	10	10.9	7.6	27-29	47-50	0	105	50	32	3	6
142	101	131	2.25	45°S	20	10	12.0	8.5	29-31	47-50	0	105	50	35	2.5	5
153	114	141	2.50	45°S	20	10	12.9	9.7	48-52	47-50	0	105	60	40	2.5	5

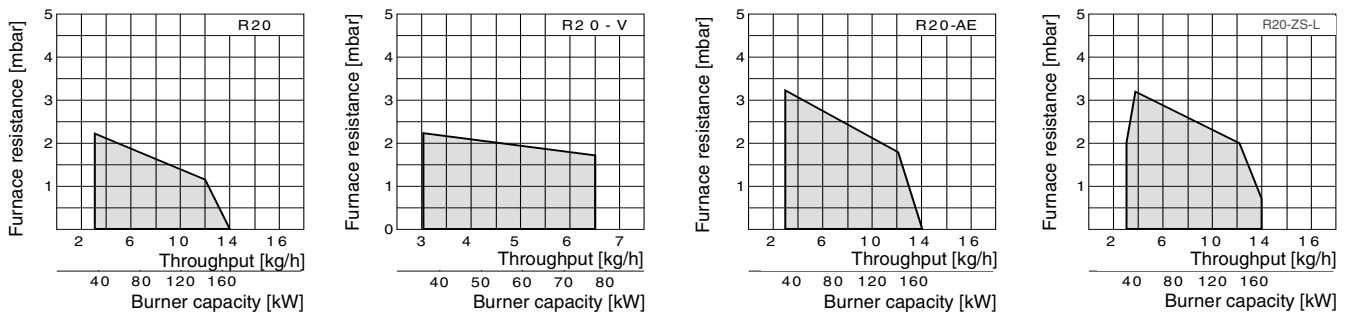
The setting values were determined using Danfoss nozzles.

Burner overall dimensions / boiler connection dimensions

All dimensions in mm



Working ranges



Working fields tested in accordance with DIN EN 267. The working fields refer to an altitude of approx. 200 m above sea level and a room temperature of 20°C.

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