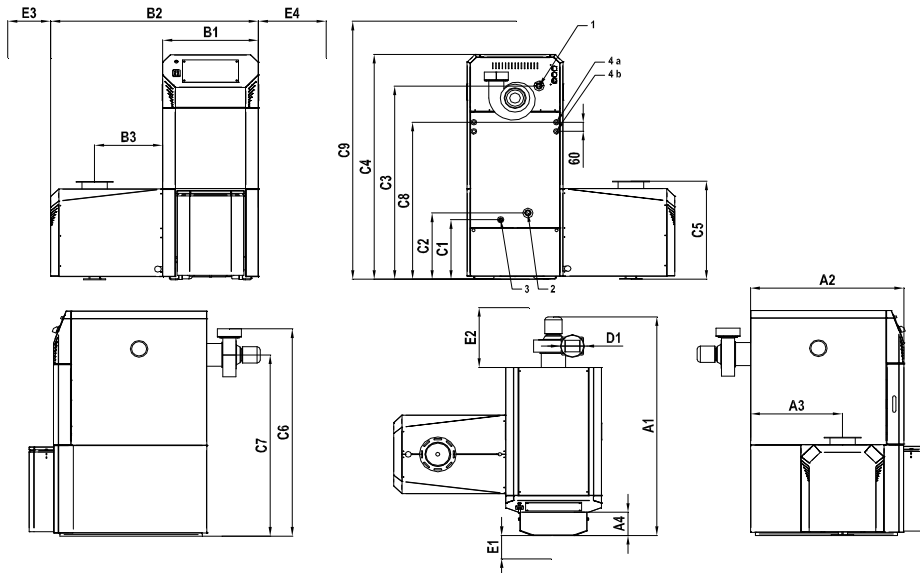


HERZ firematic 20-101

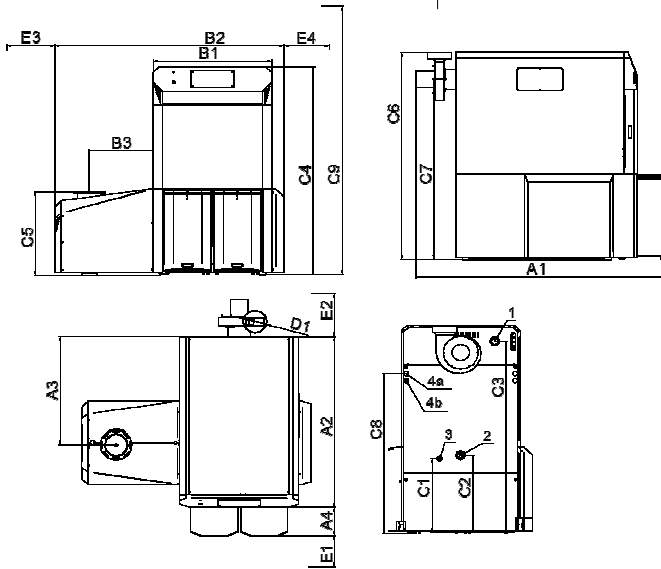
Standard specification sheet

Vers.2.6

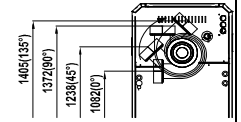
firematic 20-60



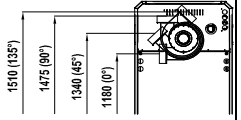
firematic 80-101



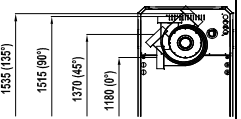
firematic 20-35



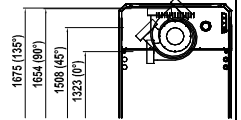
firematic 45



firematic 60

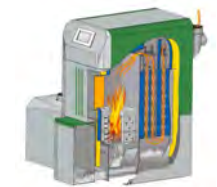


firematic 80-101

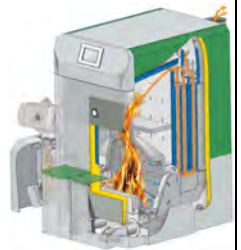


firematic	20	35	45	60	80	100	101
Power range - Declaration at nameplate [kW] - wood chips (pellets)	6,0-20,0 (-)	6,0-35 (10,2- 40)	12,1- 45 (13,9 - 48)	12,1 - 60,0 (13,9 - 70,0)	23,2 - 80 (23,2 - 80)	23,2 - 99 (23,2 - 99)	23,2- 101 (23,2 - 101)
Power range - measured [kW] - wood chips (wood pellets)	6,0-21,1 (-)	6,0-35,4 (10,2-41,3)	12,1-45,5 (13,9 - 48,4)	12,1 - 60,8 (13,9- 71,6)	23,2 - 81,5 (23,2 - 81,0)	23,2-101,4 (23,2-100,4)	23,2 - 101,4 (23,2 - 100,4)
Continuance of combustion max. [h]	-	-	-	-	-	-	-
A1 Length	1389			1495			1709
A2 Length	960			1070			1178
A3 Length	575			635			719
A4 Length	156			152			256
B1 Width	600			710			846
B2 Width without disassembly of the cover	1300			1410			1636
B3 Width	430			430			477
C1 Height	395			395			519
C2 Height	440			500			690
C3 Height	1280			1375			1520
C4 Height	1490			1590			1690
C5 Height	646			646			646
C6 Height	1376			1475			1654
C7 Height	1200			1300			1441
C8 Height	1040			1125			1263
C9 Height minimal	2100			2300			2300
D1 Diameter flue pipe	150		150	180			180
E1 minimal gap	600			700			800
E2 minimal gap	500			530			450
E3 minimal gap	300			300			300
E4 minimal gap	300			300			700
Inserting dimensions							
Length	960			1070			1177
Width	-			-			800
Width without disassembly of the cover	621			731			907
Height	1490			1590			1692

Mounting dimensions in [mm]



firematic 20-60



firematic 80-301

fm 20-35: 1...Flow(1"), 2...Return flow(1"), 3...filling/depletion (1/2"), 4 a...Safety heat exchanger - Input (1/2" IG), 4 b...Safety heat exchanger - Output (1/2" IG)
 fm 45-60: 1...Flow (6/4"), 2...Return (6/4"), 3...filling/depletion (1/2"), 4 a...Safety heat exchanger - Input (1/2" IG), 4 b...Safety heat exchanger - Output (1/2" IG)
 fm 80-101: 1...Flow(2"), 2...Return(2"), 3...filling/depletion (3/4"), 4 a...Safety heat exchanger - Input (1/2" IG), 4 b...Safety heat exchanger - Output (1/2" IG)

HERZ firematic 20-101

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firematic	20	35	45	60	80	100	101
weight of boiler [kg]	517		620		1032		
Volume of combustion chamber [ltr.]	-		-		-		
Volume ash drawer combustion chamber [ltr.]	23		38		50		
Volume ash drawer heat exchanger [ltr.]	23		23		50		
min./max. delivery pressure [mbar]	0,05/0,1		0,05/0,1		0,05/0,1		
operating overpressure Min/Max [bar]	1,5/3		1,5/3		1,5/3		
max. operating temperature [°C]	95		95		95		
Max. setting Safetytemperaturelimiter - STL (°C)	95		95		95		
Water capacity [ltr.]	80		116		179		
boiler electrical connection [V,Hz,A] / delivery rate [kW]	~230,50,16/2,6		~230,50,16/2,6		~230,50,16/2,6		
Agitator - electrical connection [V]	1x230 (option: 3x400)		1x230 (option: 3x400)		3 x 400		
Resistance of boiler at dt=35K [mbar] **	-		-		-		
Resistance of boiler at dt=20K [mbar] *	5,4 (-)	10,8 (13,4)	2,2 (2,4)	4,1 (4,5)	5,7 (5,7)	8,8 (8,8)	8,8 (8,8)
Resistance of boiler at dt=10K [mbar] *	20,6 (-)	39,9 (51,9)	7,5 (8,5)	15,3 (16,3)	22,4 (22,4)	34,6 (34,6)	34,6 (34,6)
min. recomm. Flow rate dt=18K [kg/h] **	955 (-)	1672 (1911)	2150 (2293)	3105 (3344)	3822 (3822)	4729 (4729)	4825 (4825)
Flow rate dt=15K [kg/h] **	1433 (-)	2006 (2293)	2580 (2752)	3726 (4013)	4586 (4586)	5675 (5675)	5790 (5790)
Electric power consumption, nominal load [kW] *	0,214 (-)	0,266 (0,141)	0,215 (0,138)	0,285 (0,196)	0,318 (0,145)	0,386 (0,166)	0,386 (0,166)
Electric power consumption, part load [kW] *	0,097 (-)	0,097 (0,083)	0,097 (0,105)	0,097 (0,105)	0,106 (0,072)	0,106 (0,072)	0,106 (0,072)
Size of heat exchanger [m2]	1,74		2,65		4,16		
Size of combustion surface[m2]	0,0289		0,0484		0,174		
Volume combustion chamber [m3]	0,0689		0,1101		0,183		
Necessary quantity of water for safety heat exchanger [ltr./h]	-		-		-		
Heat exchanger - Number of conduits / tubes [qty.]	2 / 2x4:1x4		2 / 1x6:2x6		2 / 2x6:2x6		
Area safety heat exchanger [m²]	0,091		0,12		0,33		
Opening temperature thermal safety valve (°C)	95		95		95		
Number of thermal safety valve	1		1		1		
Recommended minimal volume of the buffer [ltr.]	800		1000		1000		
Emission-Nominal load (Data according to valid test reports)	Wood chips (Pellets)						
Exhaust gas temperature [°C]	~110 (-)	~140 (~155)	~110 (~110)	~140 (~150)	~115 (~110)	~125 (~130)	~125 (130)
Mass flow flue gas [kg/s] **	0,014 (-)	0,023 (0,027)	0,026 (0,024)	0,035 (0,036)	0,046 (0,046)	0,057 (0,059)	0,057 (0,059)
Mass flow flue gas [Nm³/h] ** (0°C / 1013 mbar / 13%O2)	37,3 (-)	62,3 (79)	72,4 (71)	97,3 (107)	128 (129)	157 (162)	157 (162)
Mass flow flue gas [***Om³/h] **	52,4 (-)	94,3 (124)	101,5 (99)	147,2 (165)	182 (180)	229 (240)	229 (240)
CO2 content [Vol. %] *	12,5 (-)	12,9 (12,2)	13,9 (15,5)	14,8 (15,6)	13,00 (13,70)	13,5 (13,4)	13,5 (13,4)
Efficiency [%] *	93,3 (-)	92,0 (91,0)	94,0 (95,2)	93,4 (93,2)	92,6 (92,7)	92,5 (92,7)	92,5 (92,7)
Emission - Part load (Data according to valid test reports)	Wood chips (Pellets)						
Exhaust gas temperature [°C]	~85 (-)	~85 (~85)	~85 (~85)	~85 (~ 85)	~85 (~85)	~85 (~85)	~85 (~85)
Mass flow flue gas [kg/s] **	0,004 (-)	0,004 (0,009)	0,008 (0,009)	0,008 (0,009)	0,015 (0,016)	0,015 (0,016)	0,015 (0,016)
Mass flow flue gas [Nm³/h] ** (0°C / 1013 mbar / 13%O2)	11,4 (-)	11,3 (25)	22,3 (28)	22,3 (28)	41 (43)	41 (43)	41 (43)
Mass flow flue gas [***Om³/h] **	14,9 (-)	14,8 (32)	29,3 (34)	29,3 (35)	54 (56)	54 (56)	54 (54)
CO2 content [Vol. %] *	12,0 (-)	12,0 (9,4)	12,8 (11,7)	12,8 (11,7)	11,5 (11,6)	11,5 (11,6)	11,5 (11,6)
Efficiency [%] *	91,0 (-)	91,0 (90,8)	94,3 (90,3)	94,3 (90,3)	92,4 (93,3)	92,4(93,3)	92,4 (93,3)
Test reports							
Test report - reference number	- (-)	- (147/12)	- (148/12)	- (149/12)	- (-)	- (-)	- (-)
Test report - approval number	32-0129/T3 (-)	32-0129/T3 (006/13)	32-0129/T4 (007/13)	32-0129/T4 (008/13)	32-0129/T1 (32-0129/T1)	32-0129/T1 (32-0129/T1)	32-0129/T1 (32-0129/T1)
Testing institute	SZU (-)	SZU (BLT)	SZU (BLT)	BLT (BLT)	SZU (SZU)	SZU (SZU)	SZU (SZU)
* measured value acc. to Test report ** calculated with fuel values from test report *** cubic metres at operating pressure with fuel values from test report							
electrical power input							
Induced-draught fan - flue gas fan [kW]	0,072	0,072	0,072	0,12	0,12	0,12	0,12
Ind.-dr. fan-flue g.-fan-cross s.of electric cable [mm²]/amount of w.	1 / 3+3	1 / 3+3	1 / 3+3	1 / 3+3	1 / 3+3	1 / 3+3	1 / 3+3
Stoker screw [kW]	0,25	0,25	0,25	0,25	0,37	0,37	0,37
Stoker screw-cross section of el. cable [mm2]/amount of wires	0,75 / 3+2	0,75 / 3+2	0,75 / 3+2	0,75 / 3+2	0,75 / 3+2	0,75 / 3+2	0,75 / 3+2
Motor Tipping grate [kW]	0,065	0,065	0,065	0,065	0,065	0,065	0,065
Motor Tipping grate-cross s. of el. cable [mm²]/amount of wires	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3
Motor push grate [kW]	-	-	-	-	0,065	0,065	0,065
Motor push grate- cross s. of electric ca [mm²] / amount of wires	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3
Heat exchanger [kW]	0,065	0,065	0,065	0,065	0,065	0,065	0,065
Heat exchanger-cross section of electric c. [mm²] / amount of w.	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3
Ash screw - auto de ash drive [kW]	0,065	0,065	0,09	0,09	0,09	0,09	0,09
Ash screw - auto de ash dr.-cross s. of el. c.[mm²]/amount of w.	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3	0,75 / 3
Hot-air blower; ignition fan [kW]	1,5	1,6	1,6	1,6	1,6	1,6	1,6
Hot-air blower; ignition fan-cross s. of el. c. [mm²]/amount of w.	5x1,5 / 5	1,5 / 3	1,5 / 3	1,5 / 3	1,5 / 3	1,5 / 3	1,5 / 3

Technical Data

Note:

Design Pressure = 3.0 barg

Test Pressure = 4.5barg

Maximum setting for pressure relief valve = 2.7 barg (assuming 10% variance)

Rural Energy recommends a maximum target flow temperature of 85°C in order to allow adequate margin for boiler control. A higher flow temperature can be achieved by using the Herz High Temperature Program. This is available as an optional extra. When using the High Temperature Program the user must ensure that the rest of the system components have a suitable temperature rating i.e. 110°C minimum, in particular the buffer vessel.

Acceptable fuel:
wood chips quality class A1, A2 and B1, particle size P16B, P 31.5, P45A according to EN 14961-1/4, bulk density (BD) > 150¹, (BD) > 200² or G30-G50, W 15-40 according to ONORM M 7133; nominal power at max. M25 (W25) or heating value (Q) > 3.5 kWh/kg.
wood pellets quality class A1 and A2² according to EN 14961-2, ENplus, ONORM M 7135, DIN plus, Swiss Pellets.
A2² by firematic 80-301
¹ soft wood, ² hard wood

Changes in the sense of the technical progress reserve!

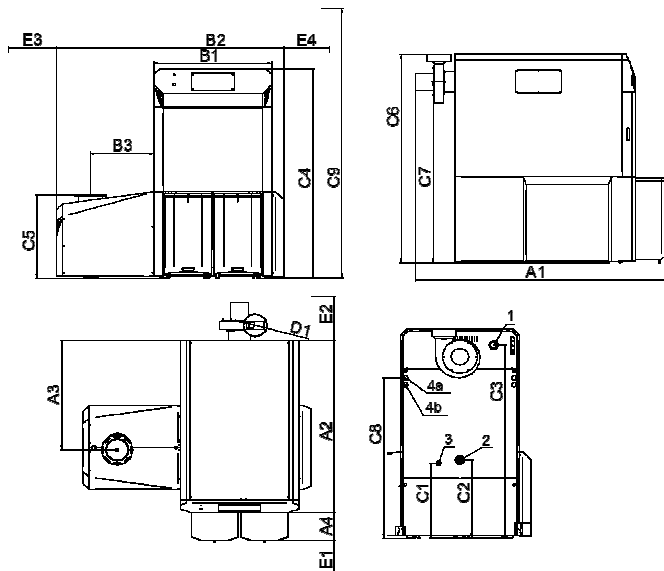
fm 20-35: 1...Flow(1¹), 2...Return flow(1¹), 3...filling/depletion (1/2²), 4 a...Safety heat exchanger - Input (1/2² IG), 4 b...Safety heat exchanger - Output (1/2² IG)
fm 45-60: 1...Flow (6/4¹), 2...Return (6/4¹), 3...filling/depletion (1/2²), 4 a...Safety heat exchanger - Input (1/2² IG), 4 b...Safety heat exchanger - Output (1/2² IG)
fm 80-101: 1...Flow(2²), 2...Return(2²), 3...filling/depletion (3/4¹), 4 a...Safety heat exchanger - Input (1/2² IG), 4 b...Safety heat exchanger - Output (1/2² IG)

HERZ firematic 130 - 301

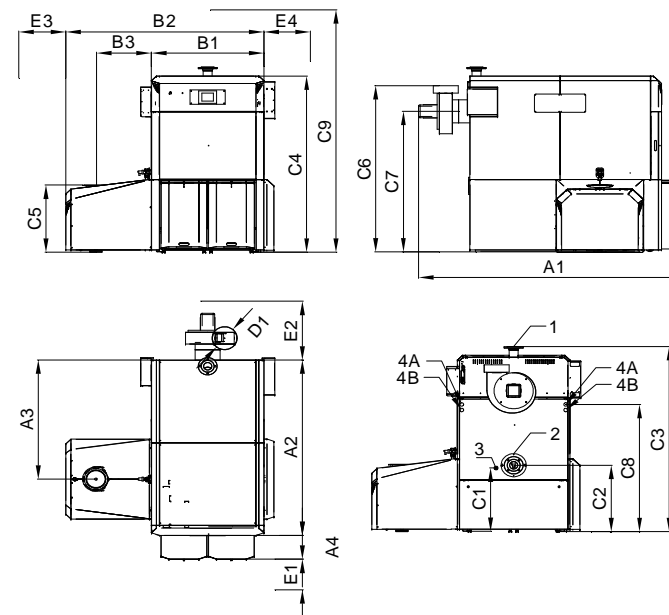
Standard specification sheet

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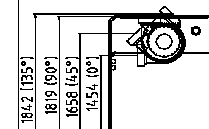
firematic 130 - 201



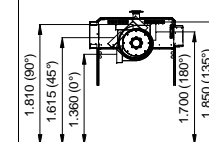
firematic 249-301



firematic 130-201

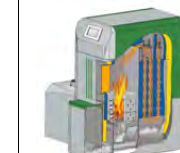


firematic 249-301

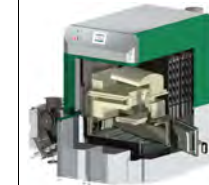


	firematic	130	149	151	180	199	201	199HD	251	299	301
Power range - Declaration at nameplate [kW] - wood chips (pellets)		36,7 - 130 (35,9-130)	36,7 - 149 (35,9-149)	36,7 - 151 (35,9-151)	36,7-180 (35,9-180)	36,7-199 (35,9 - 199)	36,7-201 (35,9-201)	69,6-199 (76,8-199)	69,6-251 (76,8-256)	69,6-299 (76,8-299)	69,6-301 (76,8-301)
Power range - measured [kW] - wood chips (wood pellets)		36,7 - 125,3 (35,9 -136,2)	36,7 - 149,6 (35,9-153,1)	36,7 - 149,6 (35,9-153,1)	36,7-181,4 (35,9-179,7)	36,7-196,3 (35,9 - 199,0)	36,7-196,3 (35,9-199,0)	69,6-199 (76,8-199)	69,6-250,3 (76,8-262,9)	69,6-301,1 (76,8-306,4)	69,6-301,1 (76,8-306,4)
Continuance of combustion max. [h]		-	-	-	-	-	-	-	-	-	-
A1 Length					2071				2672		
A2 Length					1494				1906		
A3 Length					952				1293		
A4 Length					247				257		
B1 Width					980				1116		
B2 Width without disassembly of the cover					1888				2096		
B3 Width					523				552		
C1 Height					648				690		
C2 Height					678				717		
C3 Height					1679				2004		
C4 Height					1818				1911		
C5 Height					765				765		
C6 Height					1813				1807		
C7 Height					1578				1525		
C8 Height					1400				1380		
C9 Height minimal					2400				2600		
D1 Diameter flue pipe					200				250		
E1 minimal gap					750				750		
E2 minimal gap					600				800		
E3 minimal gap					300				300		
E4 minimal gap					700				700		
Inserting dimensions											
Length					1494				2065		
Width					950				1065		
Width without disassembly of the cover					1024				1230		
Height					1818				2010		

Mounting dimensions in [mm]



firematic 20-60



firematic 80-301

fm 130-201: 1...Flow (2°), 2...Return (IG 2°), 3...filling/depletion (IG 3/4°), 4 a...Safety heat exchanger - Input (1/2° IG), 4 b...Safety heat exchanger - Output (1/2° IG)
 fm 249-301: 1...Flow(DN80, PN 6), 2...Return(DN80, PN 6), 3...filling/depletion (IG 3/4°), 4 a...Safety heat exchanger - Input (1/2° IG), 4 b...Safety heat exchanger - Output (1/2° IG)

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firematic	130	149	151	180	199	201	199HD	251	299	301	
weight of boiler [kg]							1370				
Volume of combustion chamber [ltr.]							2264				
Volume ash drawer combustion chamber [ltr.]							75				
Volume ash drawer heat exchanger [ltr.]							75				
min./max. delivery pressure [mbar]							0,05/0,1				
operating overpressure Min/Max [bar]							1,5/5				
max. operating temperature [°C]							95				
Max. setting Safetytemperaturelimiter - STL (°C)							95				
Water capacity [ltr.]							254				
boiler electrical connection [V,Hz,A] / delivery rate [kW]							-230,50,16/2,8				
Agitator - electrical connection [V]							3 x 400				
Resistance of boiler at dt=35K [mbar] **							-				
Resistance of boiler at dt=20K [mbar] *	10,1 (13,4)	13,4 (13,4)	13,4 (13,4)	13,0 (13,0)	16,9 (16,9)	16,9 (16,9)	8,7 (9,1)	8,7 (9,1)	12,4 (12,4)	12,4 (12,4)	
Resistance of boiler at dt=10K [mbar] *	38,7 (51,4)	51,4 (51,4)	51,4 (51,4)	50,2 (50,2)	54,3 (65,2)	54,3 (65,2)	33,8 (35,5)	33,8 (35,5)	48,7 (48,7)	48,7 (48,7)	
min. recomm. Flow rate dt=18K [kg/h] **	6210 (6831)	7118 (7022)	7404 (7404)	8598 (8742)	9506 (9506)	9602 (9602)	11895 (11895)	11990 (11990)	14283 (14283)	14379 (14379)	
Flow rate dt=15K [kg/h] **	7452 (8197)	8541 (8426)	8885 (8885)	10318 (10490)	11407 (11407)	11522 (11522)	14273 (14273)	14388 (14388)	17140 (17140)	17254 (17254)	
Electric power consumption, nominal load [kW] *	0,173 (0,145)	0,173 (0,173)	0,215 (0,161)	0,27 (0,239)	0,29 (0,261)	0,29 (0,261)	0,286 (0,240)	0,286 (0,240)	0,436 (-)	0,436 (-)	
Electric power consumption, part load [kW] *	0,090 (0,073)	0,090 (0,073)	0,090 (0,073)	0,095 (0,106)	0,095 (0,106)	0,095 (0,106)	0,089 (0,085)	0,089 (0,085)	0,089 (-)	0,089 (-)	
Size of heat exchanger [m ²]							7,2				
Size of combustion surface[m ²]							0,307				
Volume combustion chamber [m ³]							0,3181				
Necessary quantity of water for safety heat exchanger [ltr./h]							>1050				
Heat exchanger - Number of conduits / tubes [qty.]							2 / 3x10;3x10				
Area safety heat exchanger [m ²]							0,57				
Opening temperature thermal safety valve (°C)							95				
Number of thermal safety valve							1				
Recommended minimal volume of the buffer [ltr.]	1500	1500	2000	2000	3000	3000	3000	3000	4000	4000	
Emission-Nominal load (Data according to valid test reports)							Wood chips (Pellets)				
Exhaust gas temperature [°C]	-140 (-130)	-140 (-130)	-160 (-140)	-130 (-160)	-160 (-170)	-160 (-170)	- 130 (-145)	- 130 (-145)	-150 (-160)	-150 (-160)	
Mass flow flue gas [kg/s] **	0,076 (0,079)	0,089 (0,087)	0,089 (0,087)	0,110 (0,105)	0,119 (0,114)	0,119 (0,114)	0,145 (0,165)	0,145 (0,165)	0,177 (0,193)	0,177 (0,193)	
Mass flow flue gas [Nm ³ /h] ** (0°C / 1013 mbar / 13%O ₂)	212 (218)	246 (241)	246 (241)	305 (290)	329 (315)	329 (315)	402 (455)	402 (455)	490 (539)	490 (539)	
Mass flow flue gas [***Om ³ /h] **	320 (321)	372 (356)	390 (365)	451 (459)	521 (511)	521 (511)	594 (722)	594 (722)	759 (854)	759 (854)	
CO ₂ content [Vol. %] *	13,1 (13,3)	14,2 (14,5)	14,2 (14,5)	14,1 (14,3)	14,2 (14,8)	14,2 (14,8)	13,6 (12,2)	13,6 (12,2)	13,8 (12,3)	13,8 (12,3)	
Efficiency [%] *	92,3 (92,0)	93,5 (93,7)	93,5 (93,7)	92,3 (92,3)	92,1 (91,8)	92,1 (91,8)	93,1 (92,8)	93,1 (92,8)	92,4 (91,2)	92,4 (91,2)	
Emission - Part load (Data according to valid test reports)							Wood chips (Pellets)				
Exhaust gas temperature [°C]	-85 (-85)	-85 (-85)	-85 (-85)	-85 (-85)	-85 (-85)	-85 (-85)	- 85 (-85)	- 85 (-85)	- 85 (-85)	- 85 (-85)	
Mass flow flue gas [kg/s] **	0,023 (0,022)	0,023 (0,022)	0,023 (0,022)	0,023 (0,022)	0,023 (0,022)	0,023 (0,022)	0,045 (0,05)	0,045 (0,05)	0,045 (0,05)	0,045 (0,05)	
Mass flow flue gas [Nm ³ /h] ** (0°C / 1013 mbar / 13%O ₂)	64 (61)	64 (61)	64 (61)	64 (61)	64 (61)	64 (61)	126 (-)	126 (-)	126 (-)	126 (-)	
Mass flow flue gas [***Om ³ /h] **	84 (80)	84 (80)	84 (80)	84 (80)	84 (80)	84 (80)	165 (-)	165 (-)	165 (-)	165 (-)	
CO ₂ content [Vol. %] *	12,2 (12,3)	12,2 (12,3)	12,2 (12,3)	12,2 (12,3)	12,2 (12,3)	12,2 (12,3)	12,0 (11,3)	12,0 (11,3)	12,0 (11,3)	12,0 (11,3)	
Efficiency [%] *	94,2 (94,1)	94,2 (94,1)	94,2 (94,1)	94,2 (94,1)	94,2 (94,1)	94,2 (94,1)	93,1 (95,2)	93,1 (95,2)	93,1 (95,2)	93,1 (95,2)	
Test reports											
Test report - reference number	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	(-) (121/12)	(-) (122/12)	(-) (123/12)	(-) (124/12)	
Test report - approval number	32-0129/T5	32-0129/T5	32-0129/T5	32-0129/T5	32-0129/T5	32-0129/T5	32-0129/T2 (044/13)	32-0129/T2 (045/13)	32-0129/T2 (046/13)	32-0129/T2 (047/13)	
Testing institute	SZU (SZU)	SZU (SZU)	SZU (SZU)	SZU (SZU)	SZU (SZU)	SZU (SZU)	SZU (BLT)	SZU (BLT)	SZU (BLT)	SZU (BLT)	

Note:
Design Pressure = 5.0 barg

Test Pressure = 7.5 barg

Maximum setting for pressure relief valve = 4.5 barg (assuming 10% variance)

Rural Energy recommends a maximum target flow temperature of 85°C in order to allow adequate margin for boiler control. A higher flow temperature can be achieved by using the Herz High Temperature Program. This is available as an optional extra. When using the High Temperature Program the user must ensure that the rest of the system components have a suitable temperature rating i.e. 110°C minimum, in particular the buffer vessel.

A buffer is not required if guaranteed:
permanent minimum heat decline: 100% of the nominal power for min. 0,75 hours or 30% of the nominal power for min. 1 hour

The size of the buffer depends on the system. This must be calculated by a planner in accordance with the present heating system!

* measured value acc. to Test report ** calculated with fuel values from test report *** cubic metres at operating pressure with fuel values from test report

electrical power input											
Induced-draught fan - flue gas fan [kW]							0,31				
Ind.-dr. fan-flue g.-fan-cross s.of electric cable [mm ²]/amount of w.							3x1 - 3x0,25 / 3+3				
Stoker screw [kW]							0,37				
Stoker screw-cross section of el. cable [mm ²]/amount of wires							0,75 / 3+2				
Motor Tipping grate [kW]							0,085				
Motor Tipping grate-cross s. of el. cable [mm ²]/amount of wires							0,75 / 3				
Motor push grate [kW]							0,085				
Motor push grate- cross s. of electric ca.[mm ²] / amount of wires							0,75 / 3				
Heat exchanger [kW]							0,09				
Heat exchanger-cross section of electric c. [mm ²] / amount of w.							0,75 / 3				
Ash screw - auto de ash drive [kW]							0,09				
Ash screw - auto de ash dr.-cross s. of el. c.[mm ²]/amount of w.							0,75 / 3				
Hot-air blower; ignition fan [kW]							1,6				
Hot-air blower; ignition fan-cross s. of el. c. [mm ²]/amount of w.							1,5 / 3				

Acceptable fuel:
wood chips quality class A1, A2 and B1, particle size P16B, P 31.5, P45A according to EN 14961-1/4, bulk density (BD) > 150¹, (BD) > 200² or G30-G50, W 15-40 according to ONORM M 7133; nominal power at max. M25 (W25) or heating value (Q) > 3.5 kWh/kg
wood pellets quality class A1 and A2* according to EN 14961-2, ENplus, ONORM M 7135, DIN plus, Swiss Pellets:
A2* by firematic 80-301
¹ soft wood, ² hard wood

Changes in the sense of the technical progress reserved

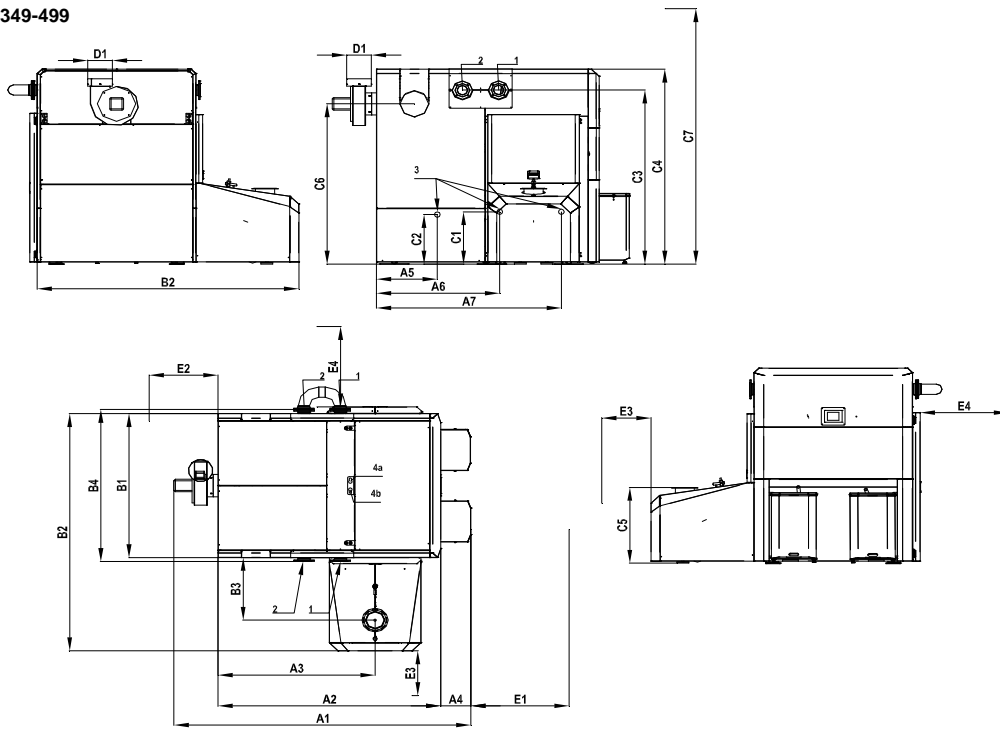
Im 130-201: 1...Flow (2°), 2...Return (IG 2°), 3...filling/depletion (IG 3/4°), 4 a...Safety heat exchanger - Input (1/2° IG), 4 b...Safety heat exchanger - Output (1/2° IG)
Im 249-301: 1...Flow(DN80, PN 6), 2...Return(DN80, PN 6), 3...filling/depletion (IG 3/4°), 4 a...Safety heat exchanger - Input (1/2° IG), 4 b...Safety heat exchanger - Output (1/2° IG)

HERZ firematic 349-499

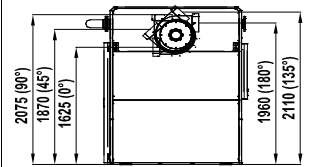
Standard specification sheet

Vers. 2.7

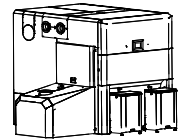
firematic 349-499



firematic 349-499



Mounting dimensions in [mm]



picture firematic 349-499

firematic	349 / 351	399 / 401	499
Power range - Declaration at nameplate [kW] - wood chips (pellets)	103,9-349 / 351 (104,0-349 / 351)	103,9 - 399 / 401 (104,0 - 399 / 401)	103,9 - 499 (104,0- 499)
Power range - measured [kW] - wood chips (wood pellets)	103,9-372,2 (104,0-375,1)	103,9 - 372,2 (104,0 - 375,1)	103,9 - 511,7 (104,0- 497,4)
Continuance of combustion max. [h]	-	-	-
A1 Length	3015	3015	3015
A2 Length	2260	2260	2260
A3 Length	1595	1595	1595
A4 Length	305	305	305
A5 Length	615	615	615
A6 Length	1250	1250	1250
A7 Length	1875	1875	1875
B1 Width	1610	1610	1610
B2 Width	2655	2655	2655
B3 Width	700	700	700
B4 Width	1700	1700	1700
C1 Height	585	585	585
C2 Height	555	555	555
C3 Height	1950	1950	1950
C4 Height	2185	2185	2185
C5 Height	850	850	850
C6 Height	1795	1795	1795
C7 Height	2800	2800	2800
D1 Diameter flue pipe	250	250	250
E1 minimal gap ahead	1000	1000	1000
E2 minimal gap behind	700	700	700
E3 minimal gap left	500	500	500
E4 minimal gap right	900	900	900
Inserting dimensions			
Length		1850	
Width by disassembly of the cover		1200	
Width without disassembly of the cover		-	
Height		2180	

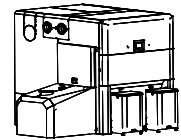
fm 349-499: 1...flow (DN100,PN 6) , 2...return (DN100,PN 6) , 3...filling/depletion (IG 3/4") left + right, 4 a... Safety heat exchanger - Input (1/2"), 4 b... Safety heat exchanger - Output (1/2")

HERZ firematic 349-499

Standard specification sheet

Vers. 2.7

Technical Data



Note:
Design Pressure = 5.0 barg

Test Pressure = 7.5 barg

Maximum setting for pressure relief valve = 4.5 barg (assuming 10% variance)

Rural Energy recommends a maximum target flow temperature of 85°C in order to allow adequate margin for boiler control. A higher flow temperature can be achieved by using the Herz High Temperature Program. This is available as an optional extra. When using the High Temperature Program the user must ensure that the rest of the system components have a suitable temperature rating i.e. 110°C minimum, in particular the buffer vessel.

A buffer is not required if guaranteed:
permanent minimum heat decline: 100% of the nominal power for min. 1 hour or 30% of the nominal power for min. 1,5 hours

The size of the buffer depends on the system. This must be calculated by a planner in accordance with the present heating system!

firematic	349 / 351	399 / 401	499
weight of boiler [kg]	4393	4393	4393
weight of burner module [kg]	2010	2010	2010
weight of heat exchanger module [kg]	1960	1960	1960
weight of slide-in part (slide-in screw with RSE) [kg]	170	170	170
weight of boiler casing [kg]	253	253	253
Volume of combustion chamber [ltr.]	-	-	-
Volume ash drawer combustion chamber [ltr.]	75	75	75
Volume ash drawer heat exchanger [ltr.]	75	75	75
min./max. delivery pressure [mbar]	0,05/0,1	0,05/0,1	0,05/0,1
operating overpressure Min/Max [bar]	1,5/5	1,5/5	1,5/5
max. operating temperature [°C]	95	95	95
Max. setting Safetytemperaturelimiter - STL (°C)	95	95	95
Water capacity [ltr.]	1130	1130	1130
boiler electrical connection [V,Hz,A] / delivery rate [kW]	~3x400,50,16/3,0		
Agitator - electrical connection [V]	3x400		
Resistance of boiler at dt=35K [mbar] **	-	-	-
Resistance of boiler at dt=20K [mbar] *	-	-	-
Resistance of boiler at dt=10K [mbar] **	-	-	-
min. recomm. Flow rate dt=18K [kg/h] **	16.715 / 16.810	19.109 / 19.205	23.898
Flow rate dt=15K [kg/h] **	20.057 / 20.172	22.931 / 23.046	28.678
Electric power consumption, nominal load [kW] *	0,352 (0,483)	0,352 (0,483)	0,953 (0,725)
Electric power consumption, part load [kW] *	0,123 (0,145)	0,123 (0,145)	0,123 (0,145)
Size of heat exchanger [m2]	25,58	25,58	25,58
Size of combustion surface[m2]	0,58	0,58	0,58
Volume combustion chamber [m3]	1,39	1,39	1,39
Necessary quantity of water for safety heat exchanger [ltr./h]	-	-	-
Heat exchanger - Number of conduits / tubes [qty.]	2 / 96:80		
Area safety heat exchanger [m2]	1,68	1,68	1,68
Opening temperature thermal safety valve (°C)	95	95	95
Number of thermal safety valve	1	1	1
Recommended minimal volume of the buffer [ltr.]	5000	5000	5000
Emission-Nominal load (Data according to valid test reports)	wood chips (pellets)		
Exhaust gas temperature [°C]	~ 130 (130)	~ 140 (140)	~ 150 (150)
Mass flow flue gas [kg/s] **	0,20 (0,214)	0,20 (0,214)	0,28 (0,275)
Mass flow flue gas [Nm³/h] ** (0°C / 1013 mbar / 13%O2)	552 (592)	552 (592)	765 (762)
Mass flow flue gas [***Om³/h] **	815 (874)	835 (896)	1186 (1180)
CO2 content [Vol. %] *	13,51 (13,3)	13,51 (13,3)	13,83 (13,47)
Efficiency [%] *	93,4 (93,4)	93,4 (93,4)	92,4 (93,0)
Emission - Part load (Data according to valid test reports)	wood chips (pellets)		
Exhaust gas temperature [°C]	~ 90 (90)	~ 90 (90)	~ 90 (90)
Mass flow flue gas [kg/s] **	0,067 (0,068)	0,067 (0,068)	0,067 (0,068)
Mass flow flue gas [Nm³/h] ** (0°C / 1013 mbar / 13%O2)	187 (189)	187 (189)	187 (189)
Mass flow flue gas [***Om³/h] **	248 (251)	248 (251)	248 (251)
CO2 content [Vol. %] *	11,19 (11,37)	11,19 (11,37)	11,19 (11,37)
Efficiency [%] *	93,8 (93,7)	93,8 (93,7)	93,8 (93,7)
Test reports			
Test report - reference number	31-9515/T1	31-9515/T1	31-9515/T1
Test report - approval number	-	-	-
Testing institute	SZU	SZU	SZU
* measured value acc. to Test report ** calculated with fuel values from test report *** cubic metres at operating pressure with fuel values from test report			
Elektrische Anschlussleistung			
Induced-draught fan - flue gas fan [kW]	1,50	1,50	1,50
Ind.-dr. fan-flue g.-fan-cross s.of electric cable [mm²]/amount of w.	5x1,5 / 5		
Stoker screw [kW]	0,75	0,75	0,75
Stoker screw-cross section of el. cable [mm²]/amount of wires	0,75 / 3+2		
Motor Tipping grate [kW]	0,060	0,060	0,060
Motor Tipping grate-cross s. of el. cable [mm²]/amount of wires	0,75 / 3		
Motor push grate [kW]	0,060	0,060	0,060
Motor push grate- cross s. of electric ca.[mm²] / amount of wires	0,75 / 3		
Heat exchanger [kW]	0,18	0,18	0,18
Heat exchanger-cross section of electric c. [mm²] / amount of w.	0,75 / 3		
Ash screw - auto de ash drive [kW]	0,18	0,18	0,18
Ash screw - auto de ash dr.-cross s. of el. c.[mm²]/amount of w.	0,75 / 3		
Hot-air blower; ignition fan [kW]	1,6	1,6	1,6
Hot-air blower; ignition fan-cross s. of el. c. [mm²]/amount of w.	1,5 / 3	1,5 / 3	1,5 / 3

Acceptable fuel:
wood chips quality class A1, A2 and B1
particle size P18B, P 31.5, P18A according to EN 14961-1/4, bulk density (BD) > 150', (BD) > 200' or G30-G50, W 15-40 according to ONORM M 7133; nominal power at max. M25 (W25) or heating value (Q) > 3.5 kWh/kg.
wood pellets quality class A1 and A2' according to EN 14961-2, ENplus, ONORM M 7135, DIN plus, Swiss Pellets.
A2' by firematic 80-301
1 soft wood, 2 hard wood

Changes in the sense of the technical progress reserve!

fm 349-499: 1...flow (DN100,PN 6) , 2...return (DN100,PN 6) , 3...filling/depletion (IG 3/4") left + right, 4 a... Safety heat exchanger - Input (1/2"), 4 b... Safety heat exchanger - Output (1/2")