



MODEL: S97V Modulating Downflow/ Horizontal Gas Furnaces

FORM NO. GRR-554



Russell™ By Rheem S97V Modulating Downflow/Horizontal Gas Furnaces

- **97% A.F.U.E.†**
Input Rates from 60 to 115 kBtu [11.57 to 33.71 kW]

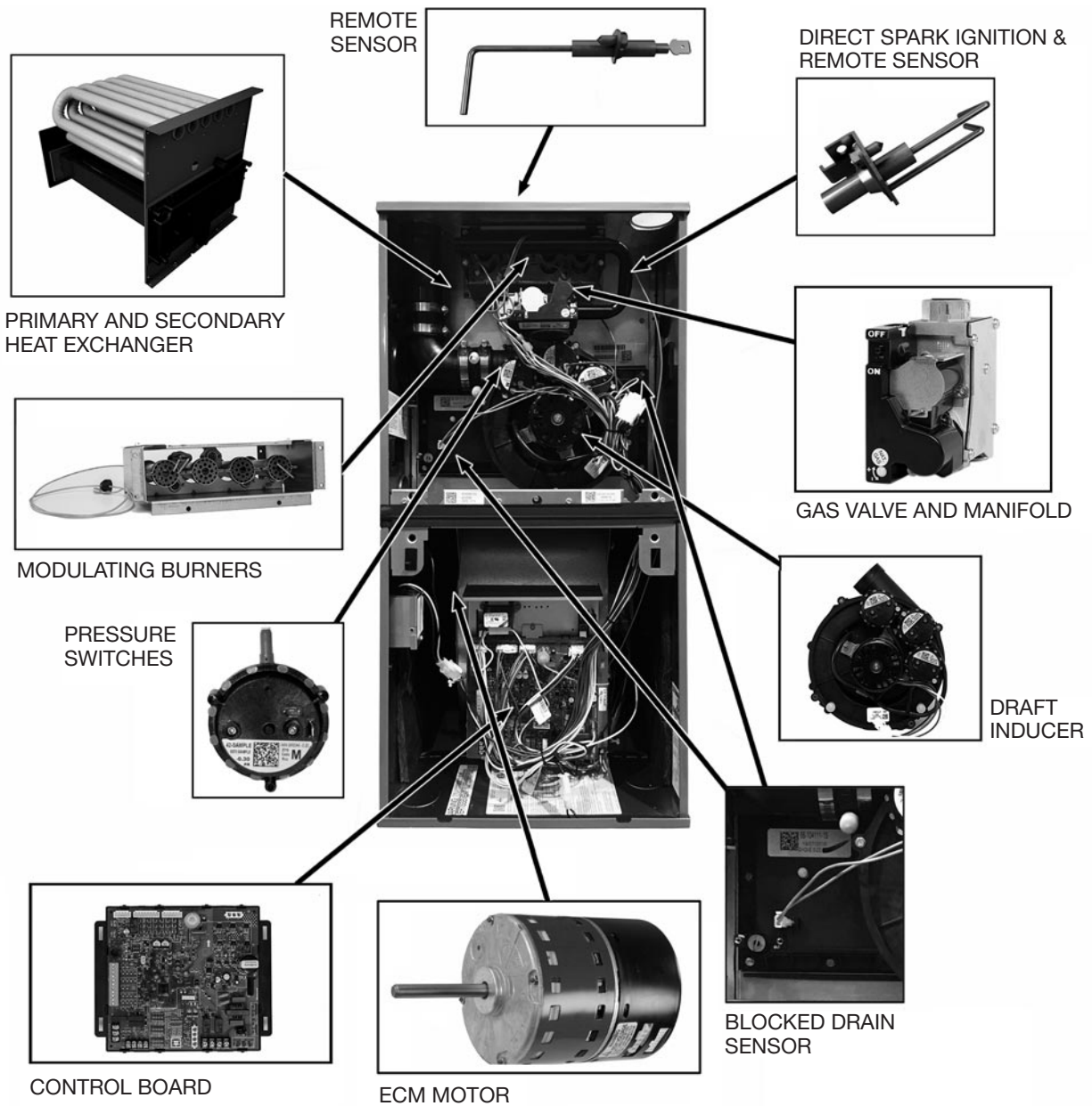


†A.F.U.E. (Annual Fuel Utilization Efficiency) calculated in accordance with Department of Energy test procedures.

- **97% Residential Gas Furnace CSA Certified**
- **Downflow/Horizontal**
- **Modulating Operation** to save energy and maintain optimal comfort level.
- **Variable Speed Blower Motor** technology provides ultimate humidity control, quieter sound levels, and year round energy savings.
- **Diagnostics 7-Segment LED** all units
- **Ignition System** – DSI for reliability and longevity
- **Water Management System** with patented Blocked Drain Sensor
- **Removable Heat Exchanger** for improved serviceability. Aluminized steel primary and stainless steel secondary construction provide maximum corrosion resistance and thermal fatigue reliability.
- **Low Profile “34 Inch” Cabinet** ideal for space constrained installations.
- **Blower Shelf Design** – serviceable in all furnace orientations
- **Pre Marked Hoses** – insures proper system drainage
- **Vent With 2" Or 3" PVC**
- **Replaceable Collector Box**
- **Hemmed Edges** on cabinet and doors
- **Quarter Turn Door Fasteners** for tool less access
- **Integrated Control Boards** feature dip switches for easy system set up
- **Self Priming Condensate Trap**
- **Two-Stage Function:** when used with a two-stage thermostat, furnace operates at 40% on first stage, and stages up to 65%, then 100% for second stage.
- **Multistage Function:** when used with a single-stage thermostat, furnace functions as a three stage furnace operating at 40%, 65% and 100% of total capacity.
- **Cabinet Air Leakage Less Than 2%** at 1 inch H₂O when tested in accordance with ASHRAE standard 193

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STANDARD EQUIPMENT

Completely assembled and wired; blocked drain sensor, 7 segment LED and marked hoses; heat exchanger; primary: aluminized steel, secondary: 29-4C stainless steel; variable speed 3 phase induced draft motor; pressure switches; digitally controlled modulating gas valve with internal redundancy and manual shut off; blower compartment door safety switch; solid state time on/off blower control; limit controls; 100% safety lock out; cool fan off delay; field selectable heat fan off delay; one hour automatic retry; power and self-test diagnostics; flame sense current diagnostics; electronic air cleaner connections; humidifier connections; humidifier on/off delay; low CFM continuous fan option; transformer; direct drive, variable speed electrically commutated blower motor (ECM). (Please note: a thermostat is not included as standard equipment.)

OPTIONAL EQUIPMENT

Downflow and horizontal return air filter racks available for all cabinet widths.

NOTE: Furnace is not listed for use with fuels other than natural or L.P. (propane) gas.

All models can be converted by a qualified distributor or local service dealer to use L.P. (propane) gas without changing burners. Factory approved kits must be used to convert from natural to L.P. (propane) gas and may be ordered as optional accessories from a parts distributor.

For L.P. (propane) operation, refer to Gas Conversion Kit Index Natural to LP Gas. The L.P. Conversion kit contains components unique to Modulating furnaces, the correct kit must be used.

WARNING

THIS FURNACE IS NOT APPROVED
OR RECOMMENDED
FOR USE IN MOBILE HOMES

**Physical Data and Specifications—Downflow Models
U.S. and Canadian Models**

MODEL NUMBER	S97VA060M317KSA	S97VA070M317KSA	S97VA085M521KSA	S97VA100M521KSA	S97VA115M524KSA
HIGH FIRE INPUT BTU/HR [kW]	56,000 [16.41]	70,000 [20.50]	84,000 [24.61]	98,000 [28.72]	112,000 [32.82]
LOW FIRE INPUT	22,400 [6.56]	28,000 [8.21]	33,600 [9.85]	39,000 [11.49]	44,800 [13.13]
HEATING CAPACITY BTU/HR [kW]	55,000 [16.12]	69,000 [20.22]	83,000 [24.32]	96,000 [28.13]	110,000 [32.24]
BLOWER (D x W) [mm]	11 x 8 [279 x 203]	11 x 8 [279 x 203]	11 x 10 [279 x 254]	11 x 10 [279 x 254]	11 x 11 [279 x 279]
MOTOR H. P. [W]-TYPE	1/2 [373] E. C. M.	1/2 [373] E. C. M.	3/4 [559] E. C. M.	3/4 [559] E. C. M.	3/4 [559] E. C. M.
MIN. CIRCUIT AMPACITY	10.00	10.00	12.00	13.00	12.00
MIN. OVERLOAD PROTECTION DEVICE	15.00	15.00	15.00	15.00	15.00
MAX. OVERLOAD PROTECTION DEVICE	15.00	15.00	20.00	20.00	20.00
MINIMUM EXT. STATIC PRESSURE IN. W.C. [kPa]	.20 [.050]	.23 [.057]	.28 [.070]	.28 [.070]	.28 [.070]
MAXIMUM EXT. STATIC PRESSURE IN. W.C. [kPa]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]	1.0 [0.249]
MAXIMUM HEATING CFM [L/s]	954 [450]	1109 [523]	1062 [501]	1250 [590]	1628 [769]
COOLING CFM @ .50" W.C. [.124 kPa] E.S.P. [L/s]	1050 [496]	1050 [496]	1750 [825]	1750 [825]	1750 [825]
TEMPERATURE RISE- HIGH FIRE °F [°C]	40 - 70 [22 -39]	40 - 70 [22 -39]	50 - 80 [27 -44]	50 - 80 [27 -44]	40 - 70 [22 -39]
TEMPERATURE RISE- LOW FIRE °F [°C]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	20 - 50 [11 - 28]	20 - 50 [11 - 28]
APPROX. SHIPPING WEIGHT (LBS) [kg]	128 [58]	132 [60]	147.5 [67]	152 [69]	165 [75]
AFUE ①	97.00%	97.00%	97.00%	97.00%	97.00%

NOTES: All models are 115V, 60HZ, 1 phase Gas connection size for all models is 1/2" [13 mm] N.P.T.

① In accordance with D.O.E. test procedures.

*S=Standard Models

NOTE: Standard model complies with California low NOx requirements.

This furnace does not meet air district requirements of 14 ng/J NOx emissions limit, and thus is subject to a mitigation fee of up to \$450. This furnace is not eligible for the Clean Air Furnace Rebate Program: www.CleanAirFurnaceRebate.com.

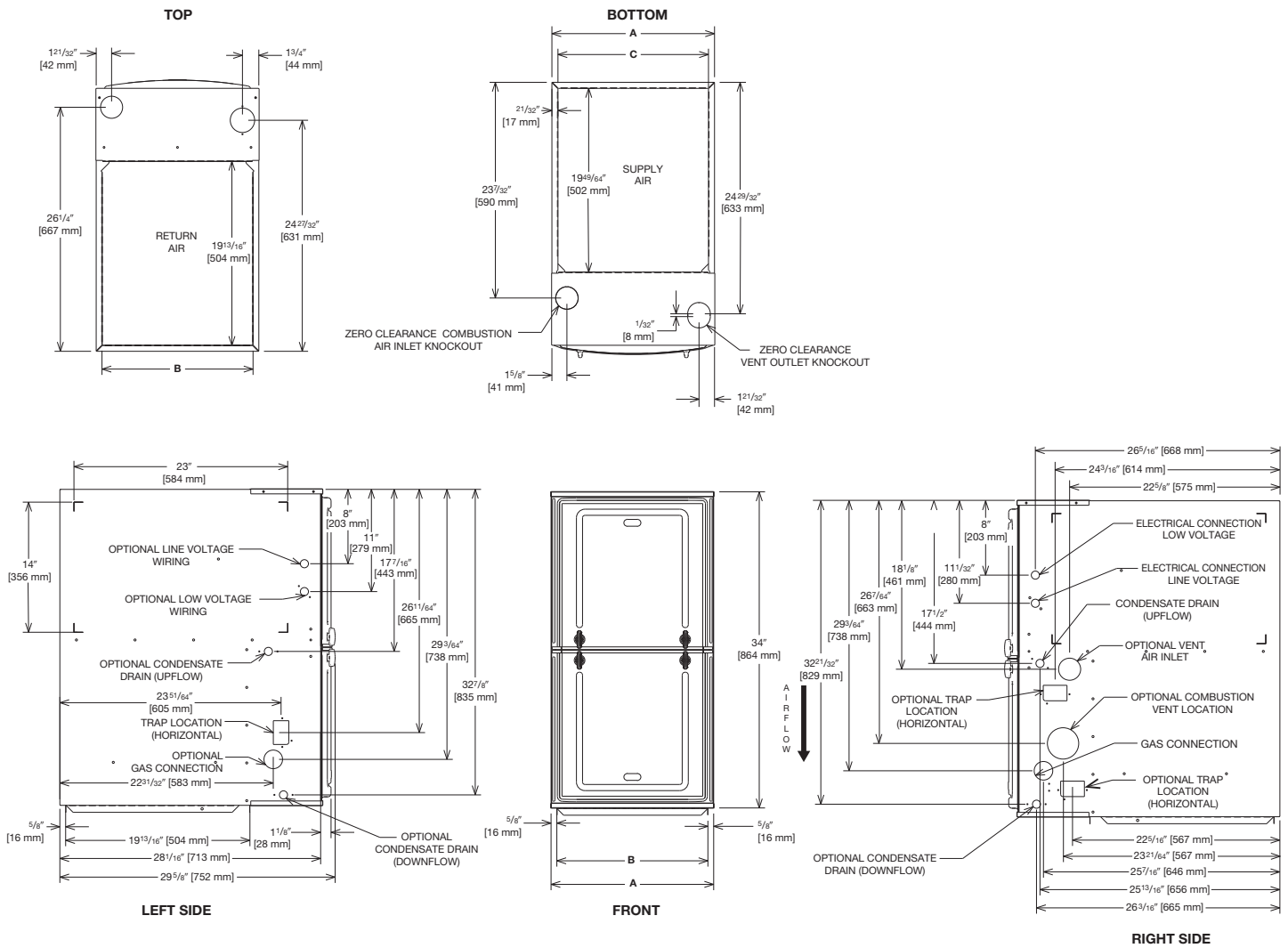
This furnace is to be installed for propane firing only in air districts requiring 14 ng/J NOx emission limits. Operating in natural gas mode is in violation of these Rules.

[] Designates Metric Conversions

Model Number Identification

<u>S</u>	<u>97</u>	<u>V</u>	<u>A</u>	<u>—</u>	<u>060</u>	<u>M</u>	<u>3</u>	<u>17</u>	<u>K</u>	<u>S</u>	<u>A</u>
Russell™ by Rheem	97% Efficient	Motor - ECM	Design Series A = 1st Design		Input BTU/HR	Modulating	Airflow 3 - Up to 3 Tons 5 - Up to 5 Tons	Cabinet Width 17 = 17.5" 21 = 21.0" 24 = 24.5"	Configuration - Downflow/ Horizontal	S = Standard	Revision - Marketing (A - First Time Release) (B - First Revision)
					060 = 56,000 [16.41 kW]						
					070 = 70,000 [20.51 kW]						
					085 = 84,000 [24.62 kW]						
					100 = 98,000 [28.72 kW]						
					115 = 112,000 [32.82 kW]						

[] Designates Metric Conversions



ST-A1250-03-00

UNIT DIMENSIONS (CLEARANCE TO COMBUSTIBLES)

MODEL	LEFT SIDE	MINIMUM CLEARANCE (IN.) [mm]					SHIPPING WEIGHTS
		RIGHT SIDE	BACK	TOP	FRONT	VENT	
(-)97V(-)060	0	0	0	1 [25]	2 [51]	0	
(-)97V(-)070	0	0	0	1 [25]	2 [51]	0	
(-)97V(-)085	0	0	0	1 [25]	2 [51]	0	
(-)97V(-)100	0	0	0	1 [25]	2 [51]	0	
(-)97V(-)115	0	0	0	1 [25]	2 [51]	0	

*A service clearance of at least 24" is recommended in front of all furnaces

FLANGE DIMENSIONS		
A	B	C
17 1/2 [445]	16 17/64 [413]	16 13/64 [412]
21 [533]	19 49/64 [502]	19 45/64 [500]
24 1/2 [622]	23 17/64 [591]	23 13/64 [589]

Supply and return depicted as downflow configuration.
Flange configuration will vary depending on installation orientation.

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Comfort Select – CFM Options (factory setting)						
Model Number		S97VA060M317KSA	S97VA070M317KSA	S97VA085M521KSA	S97VA100M521KSA	S97VA115M524KSA
HEATING CFM [L/s]	LOW HEAT (40%)	428 [202]	466 [220]	579 [276]	683 [322]	778 [367]
	MEDIUM HEAT (65%)	562 [265]	635 [300]	685 [323]	807 [381]	990 [467]
	HIGH HEAT (100%)	749 [353]	871 [411]	833 [393]	982 [463]	1286 [607]
Efficiency Select – CFM Options						
HEATING CFM [L/s]	LOW HEAT (40%)	550 [260]	599 [283]	745 [352]	910 [429]	1000 [472]
	MEDIUM HEAT (65%)	690 [325]	778 [367]	845 [399]	1014 [479]	1217 [574]
	HIGH HEAT (100%)	885 [418]	1029 [486]	985 [465]	1160 [547]	1520 [717]
	MAX HEAT (-4°F)	954 [450]	1109 [524]	1067 [501]	1251 [590]	1628 [769]

*S = Standard Models

NOTES Standard model complies with California low NOx requirements.

Refer to Installation Manual for complete heating dip switch options.

COOLING CFM								
Model Number			S97VA060M317KSA	S97VA070M317KSA	S97VA085M521KSA	S97VV100M521KSA	S97VV115M524KSA	
TARGET COOLING/ HEAT PUMP AIRFLOW	HIGH COOLING CFM [L/s]	SW 4 = OFF	SW 5 = OFF	1050 [496]	1050 [496]	1750 [825]	1750 [825]	1750 [825]
		SW 4 = ON	SW 5 = OFF	875 [413]	875 [413]	1400 [661]	1400 [661]	1400 [661]
		SW 4 = OFF	SW 5 = ON	700 [330]	700 [330]	1225 [578]	1225 [578]	1225 [578]
		SW 4 = ON	SW 5 = ON	525 [248]	525 [248]	1050 [496]	1050 [496]	1050 [496]
	LOW COOLING CFM [L/s]	SW 4 = OFF	SW 5 = OFF	788 [372]	788 [372]	1313 [619]	1313 [619]	1313 [619]
		SW 4 = ON	SW 5 = OFF	656 [310]	656 [310]	1050 [496]	1050 [496]	1050 [496]
		SW 4 = OFF	SW 5 = ON	525 [248]	525 [248]	919 [434]	919 [434]	919 [434]
		SW 4 = ON	SW 5 = ON	394 [185]	394 [185]	788 [372]	788 [372]	788 [372]

[] Designates Metric Conversions

VENT TERMINATION KITS: =

- RXGY-E02:** Vertical/Horizontal Concentric Vent Termination Kit 2" Pipe (US Only)
- RXGY-E02A:** Vertical/Horizontal Concentric Vent Termination Kit 2" Pipe (US & Canadian)
- RXGY-E03:** Vertical/Horizontal Concentric Vent Termination Kit 3" Pipe (US Only)
- RXGY-E03A:** Vertical/Horizontal Concentric Vent Termination Kit 3" Pipe (US & Canadian)
- RXGY-G02:** Direct Vent Furnace Side Wall Vent 2" or 3" (US Only)
- RXGY-D05:** Combustion Air Drain Kit 2"
- RXGY-D06:** Combustion Air Drain Kit 3"
- NEUTRALIZER KIT:** RXGY-A01
(Replacement Cartridge 54-22120-01)
- EXTERNAL BOTTOM FILTER (HORIZONTAL) RACK:** RXGF-CB
- EXTERNAL (DOWNFLOW) FILTER RACK:** RXGF-CC

FILTER RACK FILTER SIZES* INCHES [mm]		
MODEL	RXGF-CB (HORIZONTAL)	RXGF-CC (DOWNFLOW)
(-97(-)060	16 x 24 [40 x 61]	(2) 14 x 20 [36 x 51]
(-97(-)070	16 x 24 [40 x 61]	(2) 14 x 20 [36 x 51]
(-97(-)085	20 x 24 [51 x 61]	(2) 14 x 20 [36 x 51]
(-97(-)100	20 x 24 [51 x 61]	(2) 14 x 20 [36 x 51]
(-97(-)115	24 x 24 [61 x 61]	(2) 14 x 20 [36 x 51]

*Filter racks are shipped without filters.
A suitable 1" [25.4 mm] filter may be used

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INDOOR COIL CASINGS

MODEL NUMBER
RXBC-D17A1
RXBC-D21A1
RXBC-D21B1
RXBC-D24A1

FOR HIGH ALTITUDES:

NOTE: Modulating furnaces require a unique 2% derate at altitudes above 2,000 feet. See Installation Instructions for details.

HIGH ALTITUDE KITS

- (-97V(-)060M317K(--)) RXGY-F48
- (-97V(-)070M317K(--)) RXGY-F49
- (-97V(-)085M521K(--)) RXGY-F50
- (-97V(-)100M521K(--)) RXGY-F51
- (-97V(-)115M524K(--)) RXGY-F52

L.P. CONVERSION KIT: RXGJ-FP37

CONDENSATE PUMP KIT: PROSTOCK & 1PCB151TUL

COMBUSTIBLE FLOOR BASE: RXGC-B17
RXGC-B21
RXGC-B24

GENERAL TERMS OF LIMITED WARRANTY*

Rheem® will furnish a replacement for any part of this product which fails in normal use and service within the applicable period stated, in accordance with the terms of the limited warranty.

*For complete details of the Limited and Conditional Warranties, including applicable terms and conditions, contact your local contractor or the Manufacturer for a copy of the product warranty certificate.

Parts.....Ten (10) Years
Heat ExchangerLimited Lifetime
Limited Lifetime
Conditional Unit Replacement
(Registration Required)Limited Lifetime



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Before proceeding with installation, refer to installation instructions packaged with each model, as well as complying with all Federal, State, Provincial, and Local codes, regulations, and practices.

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