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HIGH EFFICIENCY DUCTED UNITS 60HZ



Low Height Split Indoors With
Side Discharge Condensing Unit
(1.5 To 5 TONS)

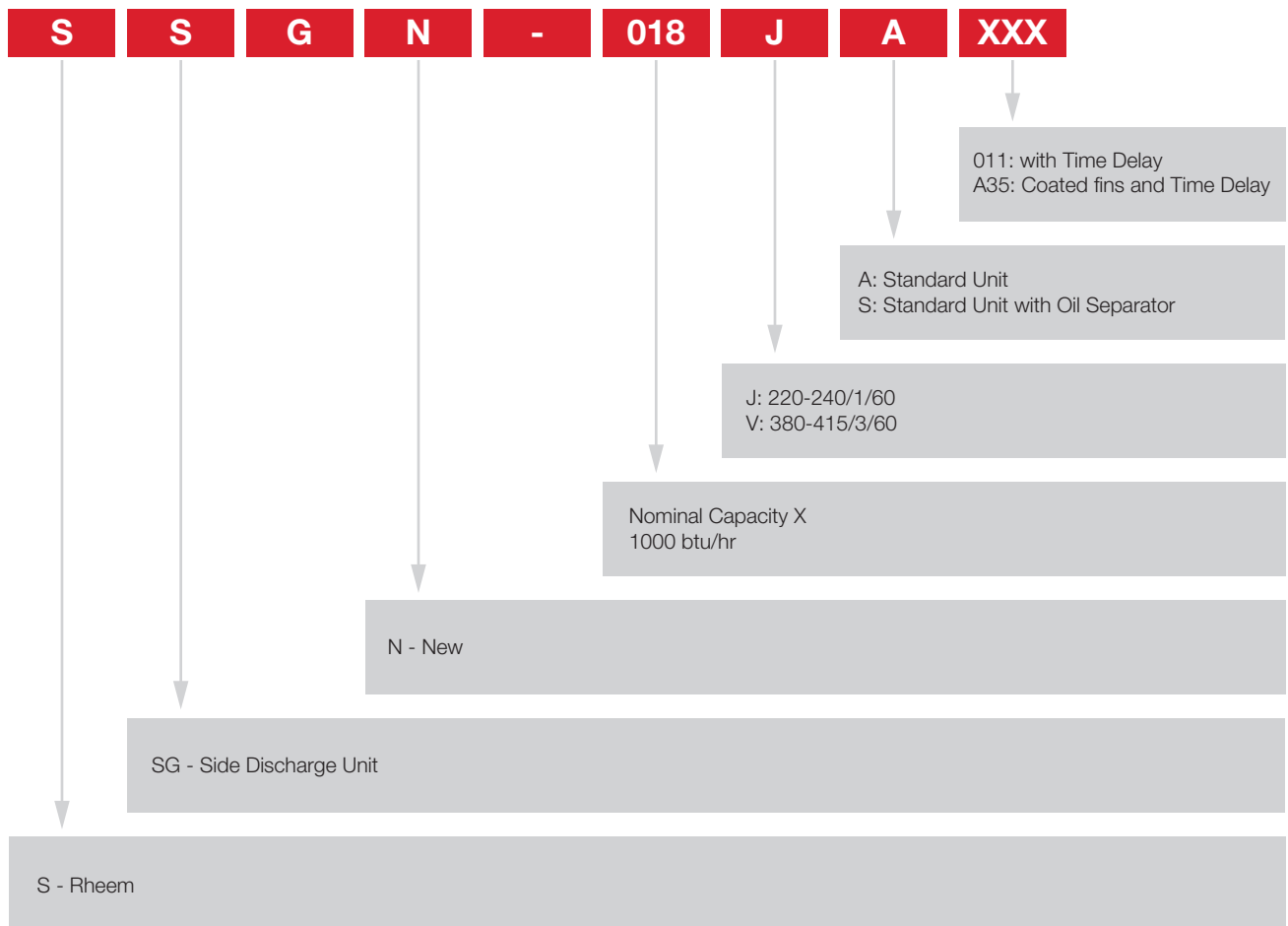
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NOMENCLATURE

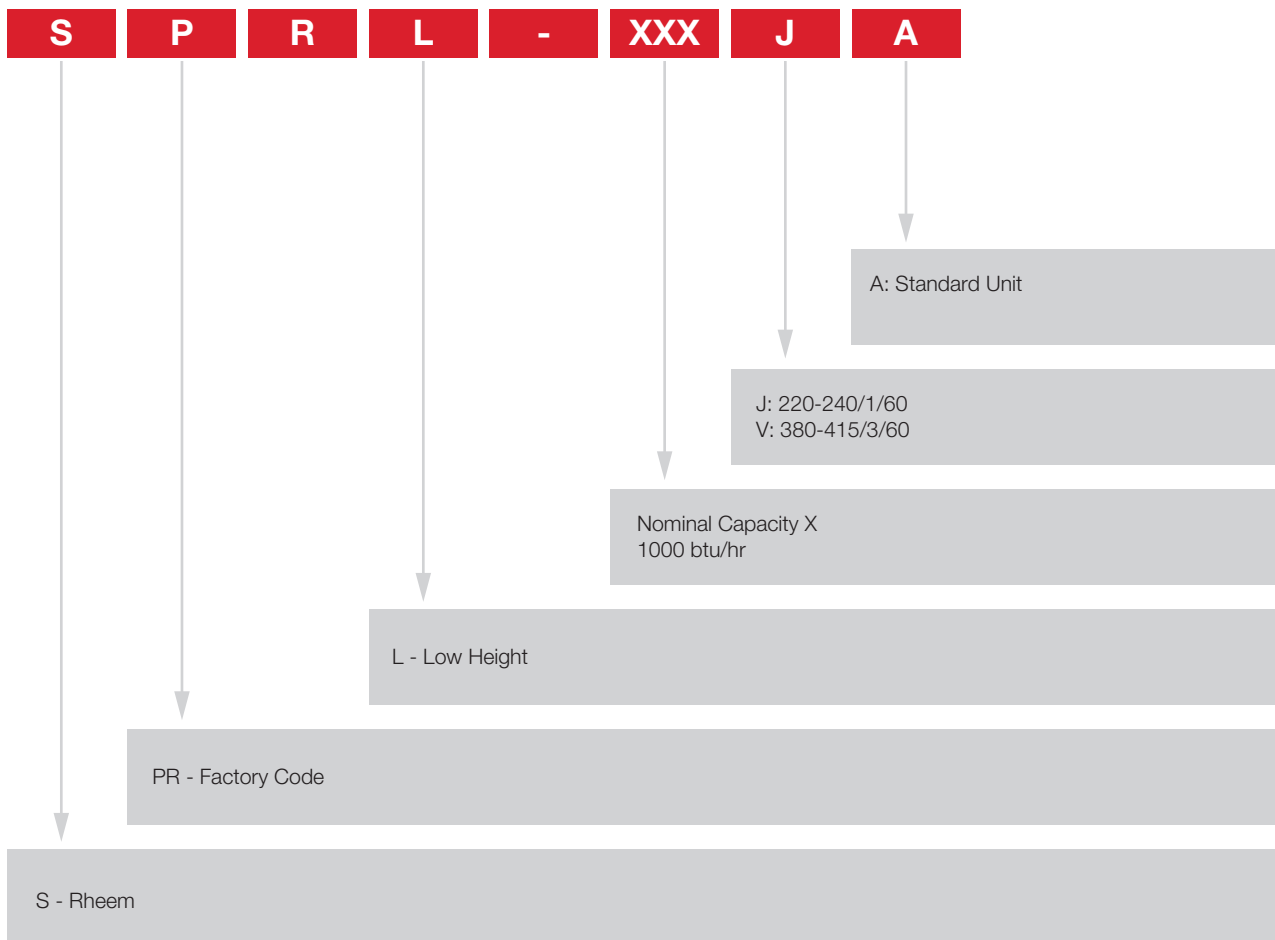
OUTDOOR UNIT



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NOMENCLATURE

INDOOR UNIT



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AVAILABLE SKUS

CONDENSING UNITS

Models	Description	Power Supply
SSGN-018JA011	1 1/2 Ton w/High/Low Pressure Control / Timer	208-230V/1Ph/60Hz
SSGN-024JA011	2 Ton w/High/Low Pressure Control / Timer	208-230V/1Ph/60Hz
SSGN-030JA011	2 1/2 Ton w/High/Low Pressure Control / Timer	208-230V/1Ph/60Hz
SSGN-036JA011	3 Ton w/High/Low Pressure Control / Timer	208-230V/1Ph/60Hz
SSGN-042VA011	3 1/2 Ton w/High/Low Pressure Control / Timer	400V/3Ph/60Hz
SSGN-048VA011	4 Ton w/High/Low Pressure Control / Timer	400V/3Ph/60Hz
SSGN-060VA011	5 Ton w/High/Low Pressure Control / Timer	400V/3Ph/60Hz

AIR HANDLERS

Models	Description	Power Supply
SPRL-018JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz
SPRL-024JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz
SPRL-030JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz
SPRL-036JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz
SPRL-042JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz
SPRL-048JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz
SPRL-060JA	Low Height Air Handler w / Motor AC (CAP TUBE)	208-230V/1Ph/60Hz



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GENERAL FEATURES

- Operating up to 52°C ambient temperature as per GCC requirement
- Easy maintenance as access is provided for all the operating items.
- Operating at low noise and vibration level.
- Indoor unit has 5mm thick, closed cell rubber type with insulation.
- Evaporator fan motor is of 3 speed factory wired to the connector
- Evaporator Fans are direct driven
- Expansion device is Capillary as a standard.
- Power supply for models up to 3.0 ton is 230V/60HZ/1 phase and 400V/60HZ/3phase for all other models
- The power supply is at the outdoor unit for all models

ENGINEERING FEATURES

SPRL SERIES INDOOR UNITS

CABINET:

- Electrostatic powder coated finish to ensure long lasting durable cabinet
- Made from heavy gauge galvanized steel sheet metal for high corrosion resistance of 1000 hours salt spray test as per ASTM-B117 standard.
- The structure permits easy access to all the working parts of the unit, so the maintenance of the unit is very easy.

MOTOR MOUNTING ARRANGEMENT:

- Specially designed mounting arrangement for motors to have center alignment of motor & fan blower assembly with housing which provide absolute sturdiness against vibrations.



SILENT OPERATION:

- The motor & fans are designed to achieve performance by running at lower rpm to reduce tip speeds for extremely silent operation.
- Motors used in the units are 6 poles. The fans are designed to operate at lower blower outlet & coil face velocity for quiet & highly efficient operation of units.

LOW HEIGHT:

- Height of maximum 17.2 inches allows for horizontal installation in most standard or replacement work.



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EXPANSION DEVICE:

- Expansion device is provided (Capillary) as standard for scroll system for safe operation of refrigeration system under low & high indoor and outdoor temperature environment.

DISTRIBUTOR:

- Distributor is used in all the indoor units to distribute refrigerant uniformly in the evaporator circuits for best performance in the evaporator coil.



INDOOR CENTRIFUGAL FAN:

- Direct driven, centrifugal, forward curved, double inlet double width type, made from galvanized steel sheet.
- Multi speed motor internally protected ultra-high efficiency with class-B insulation mounted on resilient neoprene rubber mountings to reduce noise level ultra-high efficiency & low RPM motors.



MOTOR:

- Permanently lubricated with thermal overload Protection & ventilated type motors are mounted inside of insulated cabinet to reduce motor noise and provide a neat looking installation.

EVAPORATOR COIL:

- The evaporators are manufactured of inner grooved copper tubes of 3/8" O.D mechanically bonded to corrugated aluminum fins to ensure optimum heat transfer.
- Coated highly corrosion resistant aluminum fins are provided as optional features in all the units.
- The coils are leak pressure tested by dry air pressure 34.5 bar (500 psi) under water



REFRIGERANT CONNECTIONS:

- For field piping connections, flare type joints are provided outside the unit.
- Rubber plugs with positive pressure inside the coil are provided on the connection for ease of installation.

DRAIN PAN:

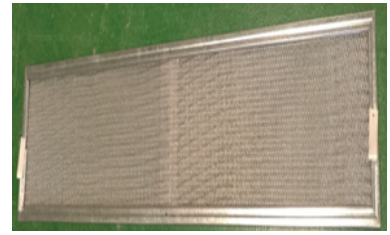
- Insulated & powder coated galvanized steel drain pan is designed with adequate slope to have proper condensate drain.
- The sandwich insulation kept between upper and lower sheet metal panels provides drip free performance.



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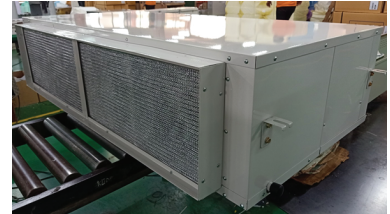
FILTERS:

- Woven aluminum, permanent washable filters are standard on all units. Provision for fixing 1/2" thick field supplied filters is standard feature on all the units.



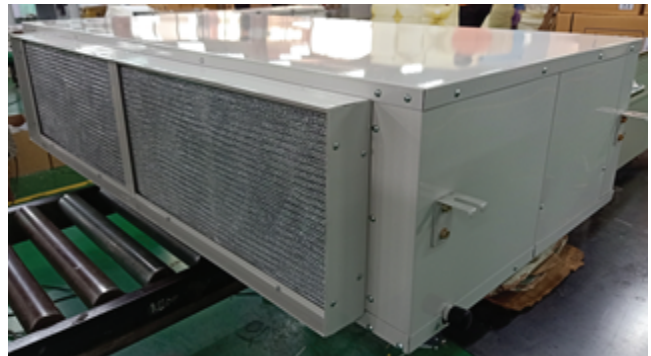
EASY FILTERS REMOVAL:

- Filter can be removed without any mechanical tool. Just lift the filter with the help of two handles provided at both ends of filter & simple drag outside the unit.
- No need of extra space on either side of the unit at site.



INDOOR UNIT SUSPENSION / INSTALLATION:

- Unique design are provide hangers at four Corners for suspending the unit from the ceiling/concrete slab to eliminate any vibration,for proper and easy mounting / installation of units.



TESTING:

- All units are run tested at the factories prior to shipment.

OUTDOOR UNITS

COMPRESSOR: MODEL 18 & 24

- Compressor used in the units are hermetically sealed Rotary type and incorporates internal high temperature motor overload protection, and durable insulation on the motor winding.
- The compressors used are tropical compressors optimized for performance & reliability for high temperature environmental conditions.
- It is internally spring mounted and externally mounted on rubber grommets to reduce vibration and noise.



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MODEL 30 AND ABOVE:

- Compressor used in the units is hermetically sealed scroll type and incorporates internal high temperature motor overload protection, and durable insulation on the motor winding.
- The compressors used are tropical compressors optimized for performance & reliability for high temperature environmental conditions.
- It is externally mounted on rubber grommets to reduce vibration and noise.
- Compressor has an internal pressure - relief assembly to protect against excessive pressure differential.



AXIAL CONDENSER FAN:

- The condenser fans are axial type directly driven by internal rotor motors.
- The combination of an external rotor motor and axial fan, on rubber isolators, with a properly dynamically balanced impeller, gives an efficient, quiet and reliable operation.
- Metallic condenser fan blades ensure safety & high durability. Metallic wire guard confirms to IEC safety standard & high durability.



CABINET:

- Electrostatic powder coated finish to ensure long lasting durable cabinet, made from heavy gauge galvanized steel sheet metal for high corrosion resistance of 1000 hours salt spray test as per ASTM-B117 standard.
- The structure permits easy access to all the working parts of the unit, so the maintenance of the unit is very easy.

REFRIGERANT CONNECTIONS:

- All connections are sweat and soldered type on exterior of the unit, located close to the ground for neat appearing installation.

SERVICE VALVES:

- Standard on all models. These valves are provided outside the unit with service port for connecting gauges for ease of installation, additional refrigerant charging and monitoring of system.



SERVICEABILITY:

- The compressor the electrical box is located in separate compartment of the cabinet providing for easy access through service panel.



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FILTER DRIER:

- Filter drier is to be fixed outside the unit as an external accessory with the units for installation in liquid line in field. The filter drier prevents the unwanted moisture in the system and help in enhancing the life of the system.



PRESSURE CUT-OUTS:

- High pressure and low pressure safety controls is a standard feature on all the models.



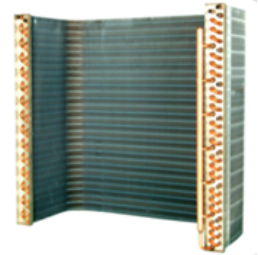
CONTACTOR:

- Relays are proved as standard for switching the compressor in all models.



CONDENSER COIL:

- The condensers are manufactured of inner grooved copper tubes 3/8" O.D mechanically bonded to corrugated aluminum fins to ensure optimum heat transfer.
- Coated highly corrosion resistant aluminum fins are provided as optional features in all the units.
- The coils are pressure leak tested by dry air pressure 41 bar (600 psi) under water



CONDENSER FAN MOTOR:

- Factory tested reliable condenser fan blades ensure safety & High durability. Suitable for operation in high Ambient temperature and heavy wind Pressure.
- Internally protected, totally enclosed and permanently lubricated type motors are tested for high ambient operation.



PRE-CHARGED:

- Every unit is factory charged and run tested before shipment.



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T1/T3 SASO RATINGS

ODU Model	IDU Model	T1				T3			
		Rated Capacity (Btu/Hr)	Rated EER	Rated Power (KW)	Rated Current (A)	Rated Capacity (Btu/Hr)	Rated EER	Rated Power (KW)	Rated Current (A)
SSGN-018JA011	SPRL-018JA	18500	12.35	1500	6.5	17500	9.7	1800	7.75
SSGN-024JA011	SPRL-024JA	21600	12	1800	8.5	19200	8.95	2150	9.6
SSGN-030JA011	SPRL-030JA	29200	12.7	2300	10	27800	10.3	2700	11.65
SSGN-036JA011	SPRL-036JA	33000	12	2750	16	30600	9.55	3200	18.5
SSGN-042VA011	SPRL-042JA	39800	12	3310	7.65	36600	9.1	4030	8.5
SSGN-048VA011	SPRL-048JA	46800	12.05	3890	8.6	43200	9.2	4700	9.7
SSGN-060VA011	SPRL-060JA	54600	12.4	4400	8.8	50200	9.55	5250	10

REFERENCED STANDARD: SASO 2663:2018: Air Conditioners – Minimum Energy Performance, Labelling and Testing Requirements for Low Capacity Window Type and Single - Split.

SASO GSO ISO 13253 (2011): Ducted air-conditioners and air-to-air heat pumps - Testing and rating for performance

Items	Unit	Cooling Capacity	
		Condition T1	Condition T3
Dry - bulb temperature of air entering indoor side	°C	27	29
Wet - bulb temperature of air entering indoor side	°C	19	19
Dry - bulb temperature of air entering outdoor side	°C	35	46
Wet - bulb temperature of air entering outdoor side	°C	24	24
Test voltage (V)	V	230	230
Test frequency (Hz)	Hz	60	60



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TEHCNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS OF INDOOR UNIT									
MODEL		SPRL	18	24	30	36	42	48	60
NOMINAL CAPACITY		KW	5.4	6.3	8.5	9.7	11.7	13.7	16.0
		TR	1.54	1.8	2.43	2.75	3.32	3.9	4.55
		BTU Hr	18500	21600	29200	33000	39800	46800	54600
POWER SUPPLY		V / PH / HZ	230 / 1 / 60						
INPUT POWER		WATTS	115	177	274	267	372	413	465
INDOOR UNIT RUNNING CURRENT		AMP	0.5	0.89	1.27	1.23	2.02	2.18	2.2
DIMENSION	WIDTH	mm	1152	1152	1441	1633	1633	1633	1633
	DEPTH	mm	615	615	615	850	850	850	850
	HEIGHT	mm	350	350	400	368	368	437	437
BLOWER AND MOTOR	BLOWER TYPE		CENTRIFUGAL FORWARD CURVE DIDW						
	QTY BLOWER	NOS	2	2	2	2	2	2	2
	DIA X WIDTH	INCH	6.5 X 8	6.5 X 8	8 X 8	8 X 8	8 X 9	8 X 9	8 X 10
	MOTOR RATING	WATTS	88	155	198	198	349	349	475
	RATED CURRENT	AMP	0.4	0.84	0.98	0.98	1.89	1.89	2.07
	NO OF SPEEDS	NOS	3	3	3	3	3	3	3
	QTY MOTOR	NOS	1	1	1	1	1	1	1
COIL	TUBE MATERIAL	TYPE	INNER GROOVED COPPER						
	TUBE O.D.	INCH / mm.	3 / 8 " / 9.52						
	FIN MATERIAL	MATERIAL	ALUMINIUM						
	ROWS DEEP	NOS	3	4	3	4	4	4	5
	FIN HEIGHT	INCH	12	12	14	12	12	16	16
	FIN LENGTH	INCH	35	35	46	51.5	51.5	51.5	51.5
	FACE AREA	SQ.MT	0.02	0.03	0.03	0.03	0.03	0.04	0.05
	FACE AREA	SQ.FT	2.92	2.92	4.47	4.29	4.29	5.72	5.72
DRAIN	OD	INCH / mm.	7/8" / 22						
AIR FILTER		TYPE	ALUMINIUM						
PIPING	SUCTION	INCH / mm.	5/8" / 15.88		3/4" / 19.05				
	LIQUID	INCH / mm.	3/8" / 9.52						
EXP.DEV.		TYPE	CAPILLARY						
WEIGHT	NET	KG	37	40	50	76	78	83	90
	GROSS	KG	39	43	54	82	84	90	97

(*) TEST CONDITION 27 deg. C INDOOR DBT, 19 deg. C INDOOR WBT, 35 deg C OUTDOOR DBT,



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TECHNICAL SPECIFICATIONS OF SIDE DISCHARGE OUTDOOR UNIT

MODEL		SSGN	18	24	30	36	42	48	60
NOMINAL COOLING CAPACITY *		BTU/Hr	18500	21600	29200	33000	39800	46800	54600
DIMENSION	WIDTH	mm	984	984	984	1093	1093	1093	1081
	DEPTH	mm	382	382	382	388	388	388	430
	HEIGHT	mm	794	794	794	1104	1104	1104	1418
POWER SUPPLY		V / PH /HZ	230 / 1 / 60				400 / 3 / 60		
INPUT POWER T1		WATTS	1500	1800	2300	2750	3310	3890	4400
INPUT POWER T3		WATTS	1800	2150	2700	3200	4030	4700	5250
COMPRESOR	QTY	NO.	1	1	1	1	1	1	1
	TYPE	TYPE	ROTARY		SCROLL				
	RLA	AMPS	6.6	8.2	8.2	10.1	5.15	6	7.3
	FLA	AMPS	12.2	15.1	13	14.7	8.9	9.5	9.9
	LRA	AMPS	42.2	49	82	80	65	65	78
	POWER SUPPLY	V / PH /HZ	230 / 1 / 60				400 / 3 / 60		
	MOUNTING	TYPE	RESILIENT RUBBER MOUNTING						
	PROTECTION	!	OVERLOAD PROTECTOR						
CONDENSOR FAN MOTOR	QTY	NO.	1	1	1	1	1	1	2
	TYPE DROVE	TYPE	DIRECT DRIVE PROPELLER FAN						
	SPEED	RPM	900	900	900	900	900	900	900
	POWER SUPPLY	V / PH /HZ	230 / 1 / 60						
	RATED CURRENT	AMPS	1.1	1.1	1.1	1.2	1.2	1.2	1.1
	DIA	MM	22	22	22	23	23	23	20
	COIL	TUBE MATERIAL	TYPE	INNER GROOVE COPPER					
TUBE O.D.		mm.(INCH)	7 / -	- / 3/8"	7 / -	7 / -	7 / -	- / 3/8"	- / 3/8"
FIN MATERIAL		MATERIAL	ALUMINUIM FINS WITH COOPER TUBE						
ROWS DEEP		NO.S	2	2	3	3	3	3	2
FINS PER INCH		FPI	18	18	18	16	18	16	18
TUBE HEIGHT		INCH	29.7	30	29.7	41.34	41.34	42	54
TUBE LENGTH		INCH	38	38	38	40.5	40.5	40.5	42
FACE AREA		SQ.M	0.34	0.35	0.34	0.43	0.48	0.43	0.63
FACE AREA		SQ.FT	7.84	7.92	7.84	11.63	11.63	11.81	15.75
SHEET MATERIAL PARTS	METERIAL		GALVANIZED STEEL						
	FINISH		POWDER COATED						
VALVE SIZE	SUCTION LINE	INCH / mm.	5/8" / 15.88		3/4" / 19.05				
	LIQUID LINE	INCH / mm.	3/8" / 9.52						
WEIGHT	NET	KG	60	62	65	86	95	98	125

Test Condition

Item	Unit	Cooling Capacity Test	
		Condition T1	Condition T3
Dry-bulb temperature of air entering indoor side	°C	27	29
Wet - bulb temperature of air entering indoor side	°C	19	19
Dry-bulb temperature of air entering outdoor side	°C	35	46
Wet - bulb temperature of air entering outdoor side	°C	24	24



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(*) TEST CONDITION 27 deg. C INDOOR DBT, 19 deg. C INDOOR WBT, 35 deg C OUTDOOR DBT,

PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-018JA011/SPRL-018JA								
			80DB/71WB			80DB/67WB			80DB/63WB		
			760	595	495	760	595	495	760	595	495
			0.26	0.28	0.3	0.26	0.28	0.3	0.26	0.28	0.3
O U T D O O R T E M P E R A T U R E °F	80	Total MBH	20.52	20.07	19.63	19.92	19.48	19.06	19.32	18.92	18.41
		Sens MBH	11.29	11.04	10.60	13.55	13.05	12.58	17.01	16.65	16.02
		Power KW	1.31	1.30	1.28	1.30	1.29	1.28	1.30	1.29	1.28
	85	Total MBH	20.02	19.58	19.15	19.44	19.01	18.59	18.85	18.46	17.96
		Sens MBH	11.21	10.77	10.53	13.80	13.50	12.64	16.78	16.43	15.80
		Power KW	1.38	1.37	1.35	1.37	1.36	1.35	1.37	1.36	1.35
	90	Total MBH	19.53	19.10	18.68	18.96	18.55	18.14	18.39	18.01	17.52
		Sens MBH	10.94	10.70	10.27	13.27	12.98	12.51	16.74	16.39	15.77
		Power KW	1.44	1.42	1.41	1.44	1.42	1.41	1.44	1.42	1.41
	95	Total MBH	19.06	18.64	18.23	18.50	18.09	17.69	17.95	17.57	17.09
		Sens MBH	10.86	10.44	10.21	13.51	13.21	12.74	16.69	16.34	15.73
		Power KW	1.25	1.24	1.23	1.50	1.48	1.46	1.49	1.48	1.46
	100	Total MBH	18.77	18.17	17.77	18.22	17.64	17.25	17.50	17.13	16.67
		Sens MBH	10.70	10.36	9.95	13.67	13.23	12.77	16.45	16.10	15.50
		Power KW	1.56	1.55	1.53	1.56	1.54	1.53	1.56	1.54	1.52
	105	Total MBH	18.49	17.72	17.33	17.95	17.20	16.82	17.06	16.70	16.25
		Sens MBH	10.72	10.10	9.88	14.72	14.10	13.63	16.21	15.87	15.27
		Power KW	1.63	1.61	1.60	1.62	1.61	1.59	1.62	1.61	1.59
	110	Total MBH	18.21	17.27	16.89	17.68	16.77	16.40	16.63	16.28	15.84
		Sens MBH	10.56	10.02	9.63	14.67	13.92	13.45	15.97	15.63	15.05
		Power KW	1.70	1.69	1.67	1.70	1.68	1.66	1.69	1.67	1.66
	115	Total MBH	18.03	16.84	16.47	17.50	16.35	15.99	16.22	15.88	15.45
		Sens MBH	10.64	9.77	9.55	14.88	13.90	13.43	15.89	15.40	14.98
		Power KW	1.79	1.77	1.76	1.80	1.77	1.74	1.77	1.75	1.74
	120	Total MBH	17.54	16.42	16.06	17.03	15.94	15.59	15.81	15.48	15.06
		Sens MBH	10.35	9.69	9.31	14.65	13.71	13.25	15.50	15.17	14.76
		Power KW	1.89	1.88	1.86	1.88	1.86	1.85	1.87	1.85	1.84

POWER KW = UNIT INPUT KW

NOTE:

- WHEN THE ENTERING AIR INDOOR DRY BULB IS OTHER THAN 80°F(26.70C)
ADJUST THE SENSIBLE CAPACITY FROM TABLE BY ADDING
[1.10XCFMX(1-DR)X(dbE-80)]



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PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-024JA011/SPRL-024JA								
			80DB/71WB			80DB/67WB			80DB/63WB		
			870	785	700	870	785	700	870	785	700
			0.26	0.28	0.3	0.26	0.28	0.3	0.26	0.28	0.3
OUT	80	Total MBH	23.96	23.43	22.92	23.26	22.75	22.25	22.56	22.09	21.49
		Sens MBH	13.18	12.89	12.37	15.82	15.24	14.68	19.86	19.44	18.70
		Power KW	1.57	1.56	1.54	1.56	1.55	1.53	1.56	1.55	1.53
DOOR	85	Total MBH	23.37	22.86	22.36	22.69	22.19	21.71	22.01	21.55	20.97
		Sens MBH	13.09	12.57	12.30	16.11	15.76	14.76	19.59	19.18	18.45
		Power KW	1.66	1.64	1.61	1.65	1.63	1.61	1.65	1.63	1.61
	90	Total MBH	22.80	22.30	21.81	22.14	21.65	21.18	21.48	21.02	20.46
		Sens MBH	12.77	12.49	12.00	15.50	15.16	14.61	19.54	19.13	18.41
		Power KW	1.72	1.71	1.69	1.72	1.71	1.69	1.72	1.71	1.69
	95	Total MBH	22.25	21.76	21.28	21.60	21.12	20.66	20.95	20.51	19.96
		Sens MBH	12.68	12.18	11.92	15.77	15.42	14.88	19.49	19.08	18.36
		Power KW	1.50	1.49	1.47	1.80	1.77	1.76	1.79	1.77	1.76
	100	Total MBH	21.69	21.21	20.75	21.06	20.60	20.14	20.43	20.00	19.46
		Sens MBH	12.36	12.09	11.62	15.80	15.45	14.91	19.20	18.80	18.10
		Power KW	1.87	1.86	1.84	1.87	1.85	1.83	1.87	1.85	1.83
	105	Total MBH	21.15	20.68	20.23	20.53	20.08	19.64	19.92	19.50	18.97
		Sens MBH	12.27	11.79	11.53	16.84	16.47	15.91	18.92	18.52	17.83
		Power KW	1.95	1.93	1.92	1.94	1.93	1.91	1.94	1.93	1.91
	110	Total MBH	20.62	20.17	19.72	20.02	19.58	19.15	19.42	19.01	18.50
		Sens MBH	11.96	11.70	11.24	16.62	16.25	15.70	18.64	18.25	17.57
		Power KW	2.04	2.03	2.01	2.03	2.02	1.99	2.03	2.01	1.99
	115	Total MBH	19.78	19.66	19.23	19.20	19.09	18.67	18.93	18.54	18.04
		Sens MBH	11.67	11.40	11.15	16.32	16.23	15.68	18.56	17.98	17.49
		Power KW	2.14	2.13	2.11	2.15	2.12	2.09	2.13	2.10	2.09
°F	120	Total MBH	19.24	19.17	18.75	18.68	18.61	18.20	18.46	18.07	17.59
		Sens MBH	11.35	11.31	10.87	16.07	16.01	15.47	18.09	17.71	17.23
		Power KW	2.27	2.25	2.23	2.25	2.24	2.22	2.24	2.22	2.20

POWER KW = UNIT INPUT KW

NOTE:

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ADJUST THE SENSIBLE CAPACITY FROM TABLE BY ADDING
[1.10XCFMX(1-DR)X(dbE-80)]



The new degree of comfort.®

PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-030JA011/SPRL-030JAT								
			80DB/71WB			80DB/67WB			80DB/63WB		
			1390	1137	951	1390	1137	951	1390	1137	951
			0.28	0.28	0.31	0.28	0.28	0.31	0.28	0.28	0.31
O U T D O O R T E M P E R A T U R E °F	80	Total MBH	32.39	31.68	30.98	31.45	30.75	30.08	30.50	29.86	29.06
		Sens MBH	17.81	17.42	16.73	21.38	20.60	19.85	26.84	26.28	25.28
		Power KW	2.01	1.99	1.97	2.00	1.98	1.96	2.00	1.98	1.96
	85	Total MBH	31.60	30.90	30.22	30.68	30.00	29.34	29.76	29.13	28.35
		Sens MBH	17.70	17.00	16.62	21.78	21.30	19.95	26.48	25.93	24.94
		Power KW	2.12	2.10	2.06	2.10	2.08	2.06	2.10	2.08	2.06
	90	Total MBH	30.83	30.15	29.49	29.93	29.27	28.63	29.03	28.42	27.66
		Sens MBH	17.26	16.88	16.22	20.95	20.49	19.75	26.42	25.86	24.89
		Power KW	2.20	2.18	2.16	2.20	2.18	2.16	2.20	2.18	2.16
	95	Total MBH	30.08	29.41	28.77	29.20	28.56	27.93	28.32	27.73	26.98
		Sens MBH	17.14	16.47	16.11	21.32	20.85	20.11	26.34	25.79	24.82
		Power KW	1.92	1.90	1.88	2.30	2.27	2.24	2.29	2.27	2.24
	100	Total MBH	29.78	28.68	28.05	28.91	27.84	27.23	27.62	27.04	26.31
		Sens MBH	16.97	16.35	15.71	21.68	20.88	20.15	25.96	25.41	24.46
		Power KW	2.39	2.37	2.35	2.39	2.36	2.34	2.39	2.36	2.33
	105	Total MBH	29.48	27.96	27.35	28.62	27.15	26.55	26.93	26.36	25.65
		Sens MBH	17.10	15.94	15.59	23.47	22.26	21.51	25.58	25.04	24.11
		Power KW	2.49	2.47	2.45	2.48	2.46	2.44	2.48	2.46	2.44
	110	Total MBH	28.92	27.26	26.66	28.08	26.47	25.89	26.25	25.70	25.01
		Sens MBH	16.77	15.81	15.20	23.30	21.97	21.23	25.20	24.67	23.76
		Power KW	2.61	2.59	2.57	2.60	2.58	2.55	2.59	2.57	2.55
	115	Total MBH	28.63	26.58	26.00	27.80	25.81	25.24	25.60	25.06	24.38
		Sens MBH	16.89	15.42	15.08	23.63	21.94	21.20	25.08	24.31	23.65
		Power KW	2.74	2.72	2.70	2.70	2.71	2.67	2.72	2.69	2.67
	120	Total MBH	27.86	25.92	25.35	27.05	25.16	24.61	24.96	24.43	23.77
		Sens MBH	16.44	15.29	14.70	23.26	21.64	20.92	24.46	23.94	23.30
		Power KW	2.90	2.88	2.85	2.88	2.86	2.84	2.87	2.84	2.82

POWER KW = UNIT INPUT KW

NOTE:

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[1.10XCFMX(1-DR)X(dbE-80)]



The new degree of comfort.®

PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-036JA011/SPRL-036JA								
			80DB/71WB			80DB/67WB			80DB/63WB		
			1460	1248	1003	1460	1248	1003	1460	1248	1003
			0.29	0.29	0.31	0.29	0.29	0.31	0.29	0.29	0.31
O U T D O O R T E M P E R A T U R E °F	80	Total MBH	36.60	35.80	35.01	35.54	34.76	33.99	34.47	33.75	32.84
		Sens MBH	20.13	19.69	18.91	24.17	23.29	22.43	30.33	29.70	28.57
		Power KW	2.40	2.38	2.35	2.39	2.36	2.34	2.39	2.36	2.34
	85	Total MBH	35.71	34.93	34.16	34.67	33.91	33.16	33.63	32.92	32.04
		Sens MBH	20.00	19.21	18.79	24.62	24.07	22.55	29.93	29.30	28.19
		Power KW	2.53	2.51	2.47	2.52	2.49	2.47	2.52	2.49	2.47
	90	Total MBH	34.84	34.07	33.32	33.83	33.08	32.35	32.81	32.12	31.25
		Sens MBH	19.51	19.08	18.33	23.68	23.16	22.32	29.86	29.23	28.13
		Power KW	2.63	2.61	2.58	2.63	2.61	2.58	2.63	2.61	2.58
	95	Total MBH	33.99	33.24	32.51	33.00	32.27	31.56	32.01	31.34	30.49
		Sens MBH	19.37	18.62	18.21	24.09	23.56	22.73	29.77	29.14	28.05
		Power KW	2.30	2.27	2.25	2.75	2.71	2.68	2.74	2.71	2.68
	100	Total MBH	33.48	32.41	31.70	32.51	31.47	30.77	31.21	30.55	29.73
		Sens MBH	19.08	18.47	17.75	24.38	23.60	22.77	29.34	28.72	27.65
		Power KW	2.86	2.84	2.81	2.85	2.83	2.80	2.85	2.83	2.79
	105	Total MBH	32.98	31.60	30.91	32.02	30.68	30.01	30.43	29.79	28.99
		Sens MBH	19.13	18.01	17.62	26.25	25.16	24.30	28.91	28.30	27.25
		Power KW	2.98	2.95	2.93	2.97	2.94	2.92	2.97	2.94	2.92
	110	Total MBH	32.15	30.81	30.13	31.22	29.91	29.26	29.67	29.05	28.26
		Sens MBH	18.65	17.87	17.18	25.91	24.83	23.99	28.48	27.88	26.85
		Power KW	3.12	3.10	3.07	3.11	3.08	3.04	3.10	3.07	3.04
	115	Total MBH	31.52	30.04	29.38	30.60	29.17	28.52	28.93	28.32	27.55
		Sens MBH	18.59	17.42	17.04	26.01	24.79	23.96	28.35	27.47	26.73
		Power KW	3.28	3.25	3.22	3.20	3.24	3.20	3.25	3.21	3.19
	120	Total MBH	30.67	29.29	28.65	29.77	28.44	27.81	28.20	27.61	26.87
		Sens MBH	18.09	17.28	16.61	25.60	24.46	23.64	27.64	27.06	26.33
		Power KW	3.47	3.44	3.40	3.44	3.42	3.39	3.43	3.39	3.37

POWER KW = UNIT INPUT KW

NOTE:

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The new degree of comfort.®

PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-042VA011/SPRL-042JA								
			80DB/71WB			80DB/67WB			80DB/63WB		
			1880	1700	1487	1880	1700	1487	1880	1700	1487
			0.29	0.29	0.31	0.29	0.29	0.31	0.29	0.29	0.31
O U T	80	Total MBH	44.15	43.17	42.22	42.86	41.92	41.00	41.57	40.70	39.60
		Sens MBH	24.28	23.75	22.80	29.14	28.08	27.06	36.59	35.82	34.45
		Power KW	2.89	2.86	2.83	2.88	2.84	2.81	2.88	2.84	2.81
D O O R	85	Total MBH	43.07	42.12	41.20	41.81	40.89	40.00	40.56	39.71	38.64
		Sens MBH	24.12	23.17	22.66	29.69	29.04	27.20	36.10	35.34	34.00
		Power KW	3.05	3.02	2.97	3.03	3.00	2.97	3.03	3.00	2.97
T E M P E R A T U R E	90	Total MBH	42.02	41.09	40.19	40.80	39.90	39.02	39.57	38.74	37.69
		Sens MBH	23.53	23.01	22.10	28.56	27.93	26.92	36.01	35.25	33.92
		Power KW	3.17	3.14	3.11	3.17	3.14	3.11	3.17	3.14	3.11
° F	95	Total MBH	40.99	40.09	39.21	39.80	38.92	38.07	38.61	37.80	36.77
		Sens MBH	23.37	22.45	21.96	29.05	28.41	27.41	35.90	35.15	33.83
		Power KW	2.77	2.74	2.70	3.31	3.26	3.23	3.29	3.26	3.23
° F	100	Total MBH	40.38	39.09	38.23	39.20	37.95	37.12	37.64	36.85	35.86
		Sens MBH	23.02	22.28	21.41	29.40	28.46	27.47	35.38	34.64	33.35
		Power KW	3.44	3.42	3.39	3.44	3.40	3.37	3.43	3.40	3.36
° F	105	Total MBH	39.77	38.11	37.27	38.61	37.00	36.19	36.70	35.93	34.96
		Sens MBH	23.07	21.72	21.25	31.66	30.34	29.31	34.86	34.13	32.86
		Power KW	3.59	3.55	3.53	3.57	3.54	3.51	3.57	3.54	3.51
° F	110	Total MBH	39.18	37.16	36.34	38.04	36.08	35.28	35.78	35.03	34.09
		Sens MBH	22.72	21.55	20.72	31.57	29.94	28.93	34.35	33.63	32.38
		Power KW	3.76	3.73	3.69	3.74	3.71	3.66	3.73	3.69	3.66
° F	115	Total MBH	37.70	36.23	35.43	36.60	35.18	34.40	34.89	34.16	33.23
		Sens MBH	22.24	21.01	20.55	31.11	29.90	28.90	34.19	33.13	32.24
		Power KW	3.94	3.91	3.88	4.03	3.90	3.85	3.91	3.87	3.84
° F	120	Total MBH	36.68	35.33	34.55	35.61	34.30	33.54	34.02	33.30	32.40
		Sens MBH	21.64	20.84	20.04	30.62	29.49	28.51	33.34	32.64	31.75
		Power KW	4.17	4.14	4.10	4.14	4.11	4.08	4.13	4.08	4.05

POWER KW = UNIT INPUT KW

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The new degree of comfort.®

PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-048VA011/SPRL-048JA								
			80DB/71WB			80DB/67WB			80DB/63WB		
			2042	1763	1524	2042	1763	1524	2042	1763	1524
			0.29	0.29	0.31	0.29	0.29	0.31	0.29	0.29	0.31
O U T D O O R T E M P E R A T U R E °F	80	Total MBH	51.91	50.77	49.65	50.40	49.29	48.21	48.89	47.86	46.57
		Sens MBH	28.55	27.92	26.81	34.27	33.02	31.82	43.02	42.12	40.51
		Power KW	3.40	3.36	3.33	3.38	3.34	3.31	3.38	3.34	3.31
	85	Total MBH	50.64	49.53	48.44	49.17	48.09	47.03	47.69	46.69	45.43
		Sens MBH	28.36	27.24	26.64	34.91	34.14	31.98	42.45	41.56	39.98
		Power KW	3.58	3.54	3.49	3.56	3.52	3.49	3.56	3.52	3.49
	90	Total MBH	49.41	48.32	47.26	47.97	46.91	45.88	46.53	45.55	44.32
		Sens MBH	27.67	27.06	25.99	33.58	32.84	31.66	42.34	41.45	39.89
		Power KW	3.72	3.69	3.65	3.72	3.69	3.65	3.72	3.69	3.65
	95	Total MBH	48.20	47.14	46.11	46.80	45.77	44.76	45.40	44.44	43.24
		Sens MBH	27.48	26.40	25.82	34.16	33.41	32.23	42.22	41.33	39.78
		Power KW	3.25	3.22	3.18	3.89	3.83	3.80	3.87	3.83	3.80
	100	Total MBH	47.00	45.96	44.95	45.63	44.63	43.64	44.26	43.33	42.16
		Sens MBH	26.79	26.20	25.17	34.22	33.47	32.30	41.61	40.73	39.21
		Power KW	4.05	4.01	3.98	4.03	4.00	3.96	4.03	4.00	3.95
	105	Total MBH	45.82	44.82	43.83	44.49	43.51	42.55	43.15	42.25	41.11
		Sens MBH	26.58	25.55	24.98	36.48	35.68	34.47	41.00	40.14	38.64
		Power KW	4.22	4.18	4.14	4.20	4.16	4.12	4.20	4.16	4.12
	110	Total MBH	44.68	43.70	42.73	43.38	42.42	41.49	42.08	41.19	40.08
		Sens MBH	25.91	25.34	24.36	36.00	35.21	34.02	40.39	39.54	38.08
		Power KW	4.42	4.38	4.34	4.40	4.36	4.31	4.38	4.34	4.31
	115	Total MBH	44.50	42.60	41.67	43.20	41.36	40.45	41.02	40.16	39.08
		Sens MBH	26.25	24.71	24.17	36.72	35.16	33.98	40.20	38.96	37.91
		Power KW	4.63	4.60	4.56	4.70	4.58	4.52	4.60	4.54	4.51
	120	Total MBH	43.30	41.54	40.62	42.04	40.33	39.44	40.00	39.16	38.10
		Sens MBH	25.55	24.51	23.56	36.15	34.68	33.52	39.20	38.38	37.34
		Power KW	4.90	4.86	4.82	4.87	4.83	4.80	4.85	4.80	4.76

POWER KW = UNIT INPUT KW

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PERFORMANCE DATA

INDOOR TEMP °F CFM AIR VOL. DEP. RATIO*			SSGN-060VA011/SPRL-060JA								
			80DB/71WB			80DB/67WB			80DB/63WB		
			2210	1993	1829	2210	1993	1829	2210	1993	1829
			0.29	0.29	0.31	0.29	0.29	0.31	0.29	0.29	0.31
O U T D O O R T E M P E R A T U R E °F	80	Total MBH	60.56	59.23	57.93	58.80	57.50	56.24	57.03	55.84	54.33
		Sens MBH	33.31	32.58	31.28	39.98	38.53	37.12	50.19	49.14	47.27
		Power KW	3.84	3.80	3.76	3.82	3.78	3.74	3.82	3.78	3.74
	85	Total MBH	59.09	57.79	56.51	57.36	56.10	54.87	55.64	54.47	53.00
		Sens MBH	33.09	31.78	31.08	40.73	39.83	37.31	49.52	48.48	46.64
		Power KW	4.05	4.01	3.95	4.03	3.99	3.95	4.03	3.99	3.95
	90	Total MBH	57.64	56.38	55.14	55.97	54.73	53.53	54.29	53.15	51.71
		Sens MBH	32.28	31.57	30.32	39.18	38.31	36.94	49.40	48.36	46.54
		Power KW	4.21	4.17	4.13	4.21	4.17	4.13	4.21	4.17	4.13
	95	Total MBH	56.24	55.00	53.79	54.60	53.40	52.22	52.96	51.85	50.45
		Sens MBH	32.06	30.80	30.12	39.86	38.98	37.60	49.25	48.22	46.41
		Power KW	3.68	3.64	3.59	4.40	4.33	4.29	4.38	4.33	4.29
	100	Total MBH	54.83	53.63	52.45	53.24	52.06	50.92	51.64	50.55	49.19
		Sens MBH	31.25	30.57	29.37	39.93	39.05	37.68	48.54	47.52	45.75
		Power KW	4.58	4.54	4.50	4.56	4.52	4.48	4.56	4.52	4.47
	105	Total MBH	53.46	52.29	51.13	51.90	50.76	49.65	50.35	49.29	47.96
		Sens MBH	31.01	29.80	29.15	42.56	41.63	40.21	47.83	46.83	45.08
		Power KW	4.77	4.73	4.69	4.75	4.71	4.66	4.75	4.71	4.66
	110	Total MBH	52.12	50.98	49.86	50.61	49.49	48.40	49.09	48.06	46.76
		Sens MBH	30.23	29.57	28.42	42.00	41.08	39.69	47.12	46.14	44.42
		Power KW	4.99	4.95	4.91	4.97	4.93	4.87	4.95	4.91	4.87
	115	Total MBH	51.71	49.70	48.61	50.20	48.26	47.19	47.86	46.86	45.59
		Sens MBH	30.51	28.83	28.19	42.67	41.02	39.64	46.90	45.45	44.22
		Power KW	5.24	5.20	5.16	5.25	5.18	5.12	5.20	5.14	5.10
	120	Total MBH	50.31	48.46	47.39	48.85	47.05	46.01	46.66	45.68	44.45
		Sens MBH	29.68	28.59	27.49	42.01	40.46	39.11	45.73	44.77	43.56
		Power KW	5.54	5.50	5.45	5.51	5.46	5.43	5.49	5.43	5.39

POWER KW = UNIT INPUT KW

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AIRFLOW DATA

MODEL#	CAPA- CITY (TON)	BLOWER SIZE/MOTOR (HP)/# OF SPEEDS	SPEED TAP		CFM (L/S) AIR DELIVERY / RPM/ WATTS - ..230..VOLTS					
					EXTERNAL STATIC PRESSURE -- INCHES W.C. (KPA)					
					0.1 (0.02)	0.2 (0.05)	0.3 (0.07)	0.4 (0.10)	0.5 (0.12)	0.6 (0.15)
SPRL-018JA	1.5	6.5x8 / 1/18 HP/ 4 speed	HIGH	SCFM	760	640	505	280	-	-
				Watts	123	115	103	86	-	-
			MED-HIGH	SCFM	595	512	400	200	-	-
				Watts	96	90	79	63	-	-
			MED	SCFM	495	400	306	121	-	-
				Watts	76	71	63	51	-	-
			LOW	SCFM	415	330	220	109	-	-
				Watts	62	58	50	43	-	-
SPRL-024JA	2.0	6.5x8 / 1/12 HP/ 4 speed	HIGH	SCFM	870	745	585	385	-	-
				Watts	186	177	164	148	-	-
			MED-HIGH	SCFM	785	675	540	325	-	-
				Watts	144	134	120	101	-	-
			MED	SCFM	700	600	485	250	-	-
				Watts	123	112	99	79	-	-
			LOW	SCFM	650	550	420	190	-	-
				Watts	110	99	87	65	-	-
SPRL-030JA	2.5	8x8 / 1/7HP / 4 speed	HIGH	SCFM	1440	1340	1225	1075	835	-
				Watts	299	289	274	252	224	-
			MED-HIGH	SCFM	1185	1089	994	852	624	-
				Watts	240	228	215	197	172	-
			MED	SCFM	977	925	745	635	-	-
				Watts	195	187	177	159	-	-
			LOW	SCFM	850	770	664	502	-	-
				Watts	167	161	151	136	-	-
SPRL-036JA	3	8x8 / 1/ 7HP/4 speed	HIGH	SCFM	1595	1324	1158	930	626	-
				Watts	298	283	267	243	212	-
			MED-HIGH	SCFM	1315	1181	981	742	334	-
				Watts	239	227	209	189	151	-
			MED	SCFM	1084	921	755	557	296	-
				Watts	194	186	174	154	132	-
			LOW	SCFM	958	835	709	550	347	-
				Watts	167	162	148	133	116	-
SPRL-042JA	3.5	8x9 /1/4 HP/4 speed	HIGH	SCFM	2027	1880	1710	1491	1214	849
				Watts	437	405	372	335	287	248
			MED-HIGH	SCFM	1790	1700	1505	1320	1008	692
				Watts	372	341	304	273	225	189
			MED	SCFM	1588	1487	1352	1169	912	619
				Watts	325	295	266	238	197	163
			LOW	SCFM	1383	1308	1209	1050	812	522
				Watts	284	262	239	210	177	142
SPRL-048JA	4	8x9 / 1/4 HP 4 speed	HIGH	SCFM	2179	2042	1870	1677	1100	795
				Watts	495	447	413	376	335	271
			MED-HIGH	SCFM	1843	1763	1629	1410	1050	700
				Watts	402	373	338	306	257	200
			MED	SCFM	1595	1524	1416	1255	1000	620
				Watts	341	314	286	264	218	168
			LOW	SCFM	1435	1316	1265	1100	854	573
				Watts	292	274	258	231	191	152
SPRL-060JA	5	8x10 / 1/3 HP / 4 speed	HIGH	SCFM	2330	2210	2013	1725	1577	932
				Watts	516	494	465	430	392	330
			MED-HIGH	SCFM	2131	1993	1824	1605	1224	817
				Watts	430	405	375	344	299	255
			MED	SCFM	1948	1829	1665	1454	1141	174
				Watts	374	352	312	297	261	216
			LOW	SCFM	1766	1658	1496	1316	947	-
				Watts	333	315	292	263	219	-



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ELECTRICAL DATA - BLOWER MOTOR ONLY – SPRL

INDOOR UNITS-SPRL

Model	Voltage-Phase-Frequency	Motor HP (W)	Speeds	Circuit Amps	Minimum Circuit Ampacity	Maximum Circuit Protector
SPRL-018JA	230-1-60	1/18 (41)		0.4	0.5	15
SPRL-024JA	230-1-60	1/12(59)		0.84	1	15
SPRL-030JA	230-1-60	1/7(106)	3	0.98	1.25	15
SPRL-036JA	230-1-60	1/7(106)		0.98	1.25	15
SPRL-042JA	230-1-60	1/4 (217)		1.89	2.5	15
SPRL-048JA	230-1-60	1/4 (217)		1.89	2.5	15
SPRL-060JA	230-1-60	1/3 (280)		1.95	2.5	15

OUTDOOR UNITS-SSGN

Model	Voltage-Phase-Frequency	COMPRESSOR		CONDENSER MOTOR		Circuit Amps	Minimum Circuit Ampacity	Maximum Over Protection Amps
		Rated Amps	Lock Rotor Amps	Full Load Amps	Lock Rotor Amps			
SSGN-018JA011	230-1-60	6.6	42.2	0.98	1.47	7.58	9.475	15
SSGN-024JA011	230-1-60	8.2	49	0.98	1.47	9.18	11.475	20
SSGN-030JA011	230-1-60	9.4	82	0.98	1.47	10.38	12.975	25
SSGN-036JA011	230-1-60	11.6	80	1.21	1.4	12.81	16.0125	25
SSGN-042VA011	230-1-60	5.8	65	1.21	1.4	7.01	8.7625	20
SSGN-048VA011	400-3-60	6.3	65	1.21	1.4	7.51	9.3875	20
SSGN-060VA011	400-3-60	8	78	0.95	1.3	8.95	11.1875	20



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SSGN PHYSICAL DATA

Physical Data								
Model Number		18	24	30	36	42	48	60
Nominal Capacity	Tr	1.5	2	2.5	3	3.5	4	5
Valve Connections								
Liquid Line O.D.	(inch)	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Suction Line O.D.	(inch)	5/8	5/8	3/4	3/4	3/4	3/4	3/4
Refrigerant	Type	R-410A						
	Kg	2.5	2.9	3.1	4	4.4	5.7	6.4
Compressor Type		ROTARY		SCROLL				
Outdoor Coil								
Net face area - outer coil	FT ²	7.85	7.91	7.85	11.62	11.62	11.81	15.75
Tube diameter	(mm/inch)	7 mm	3/8	7 mm	7 mm	7 mm	3/8	3/8
Number of rows		2	2	3	3	3	3	2
Fins per inch		18	18	18	16	18	16	18
Outdoor Fan								
Diameter - in		22	22	22	23	23	23	20
Number of blades		3	3	3	3	3	3	3
Motor (HP)		1/8	1/8	1/8	1/6	1/6	1/6	1/7(2)
Watts		94	94	94	123	123	123	100(2)
CFM		2500	2500	2500	4500	4500	4500	6600
RPM		900	900	900	900	900	900	900
Shipping Weight	Lbs	145.2	149.6	156.2	204.6	224.4	231	294.8
Operating Weight	Lbs	132	136.4	143	189.2	209	215.6	275

¹Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the installation instructions for information about

SSGN APPLICATION GUIDELINES

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01 - in wc.
2. Minimum outdoor operating air temperature for cooling mode without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 52°C.
4. For reliable operation, unit should be level in all horizontal planes.
5. Use only copper wire for electric connections at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided..
6. Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.



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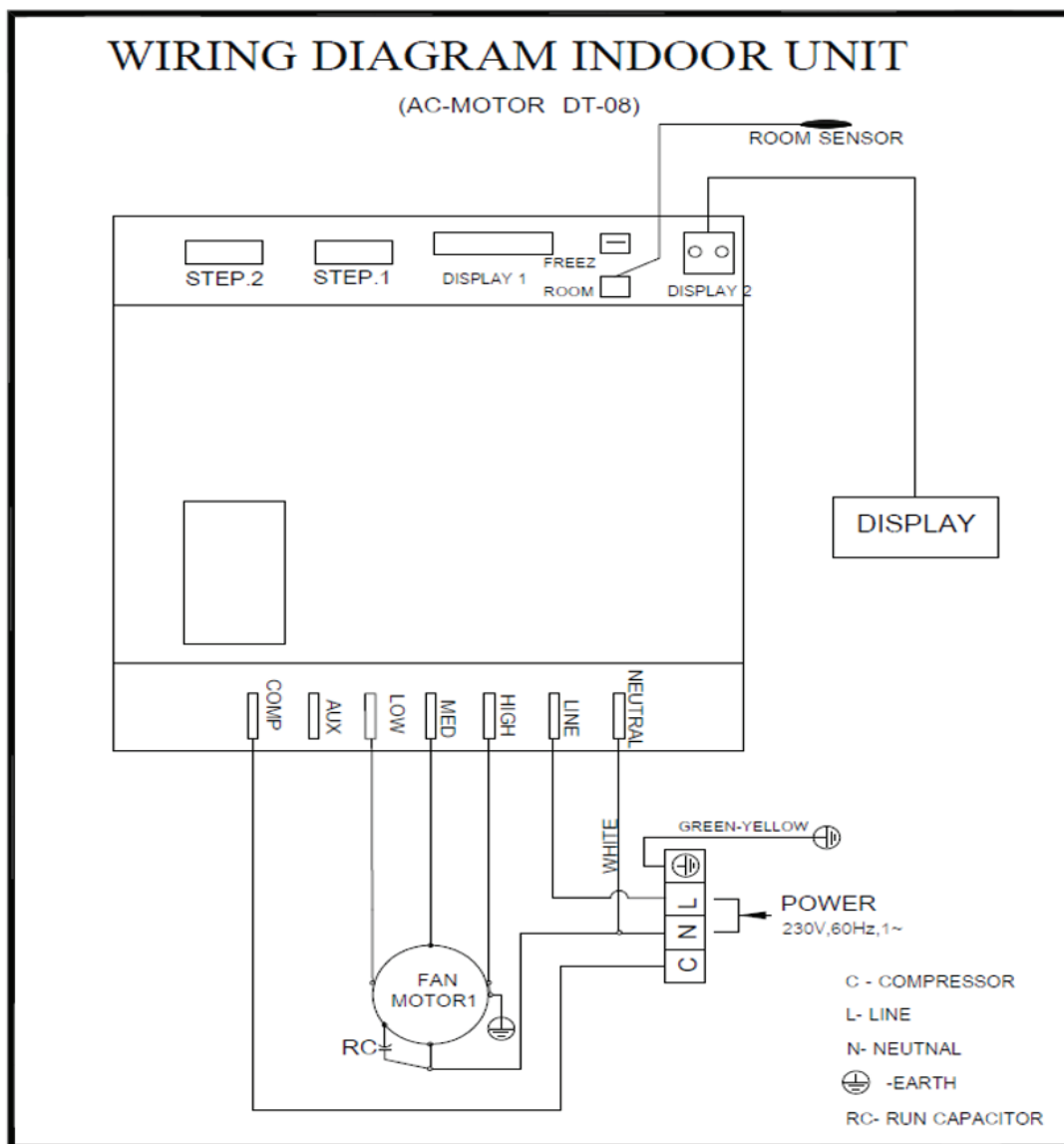
WIRING DIAGRAMS

POWER WIRING

- Field wiring must comply with the National Electrical Code and any applicable local ordinance.
- Supply wiring must be suitable for 75°C minimum and with copper conductors only
- See electrical data for product Ampacity rating and Circuit Protector requirement.

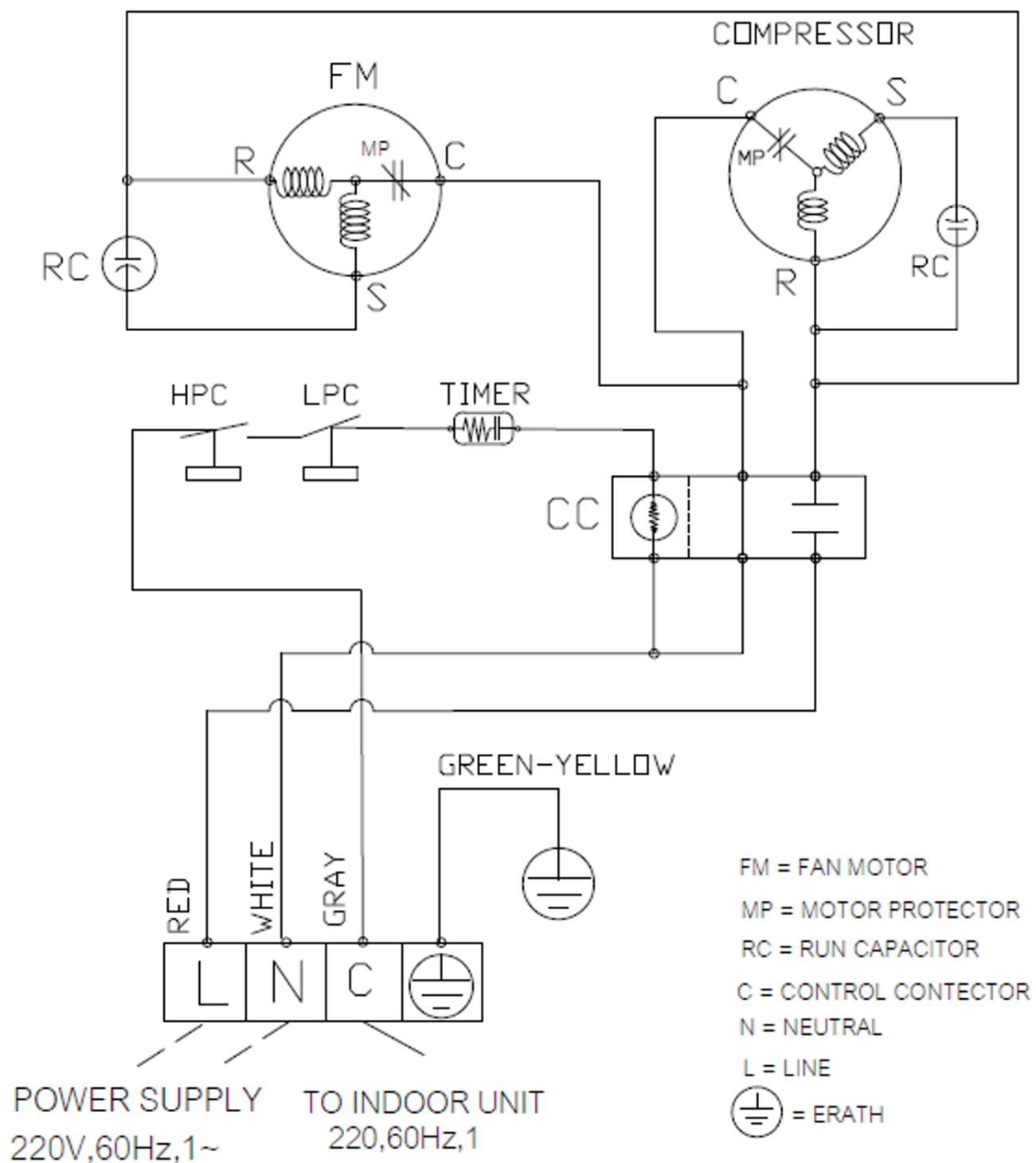
GROUNDING

- This product must be sufficiently grounded in accordance with National Electrical Code and any applicable local ordinance.
- A grounding lug is provided.



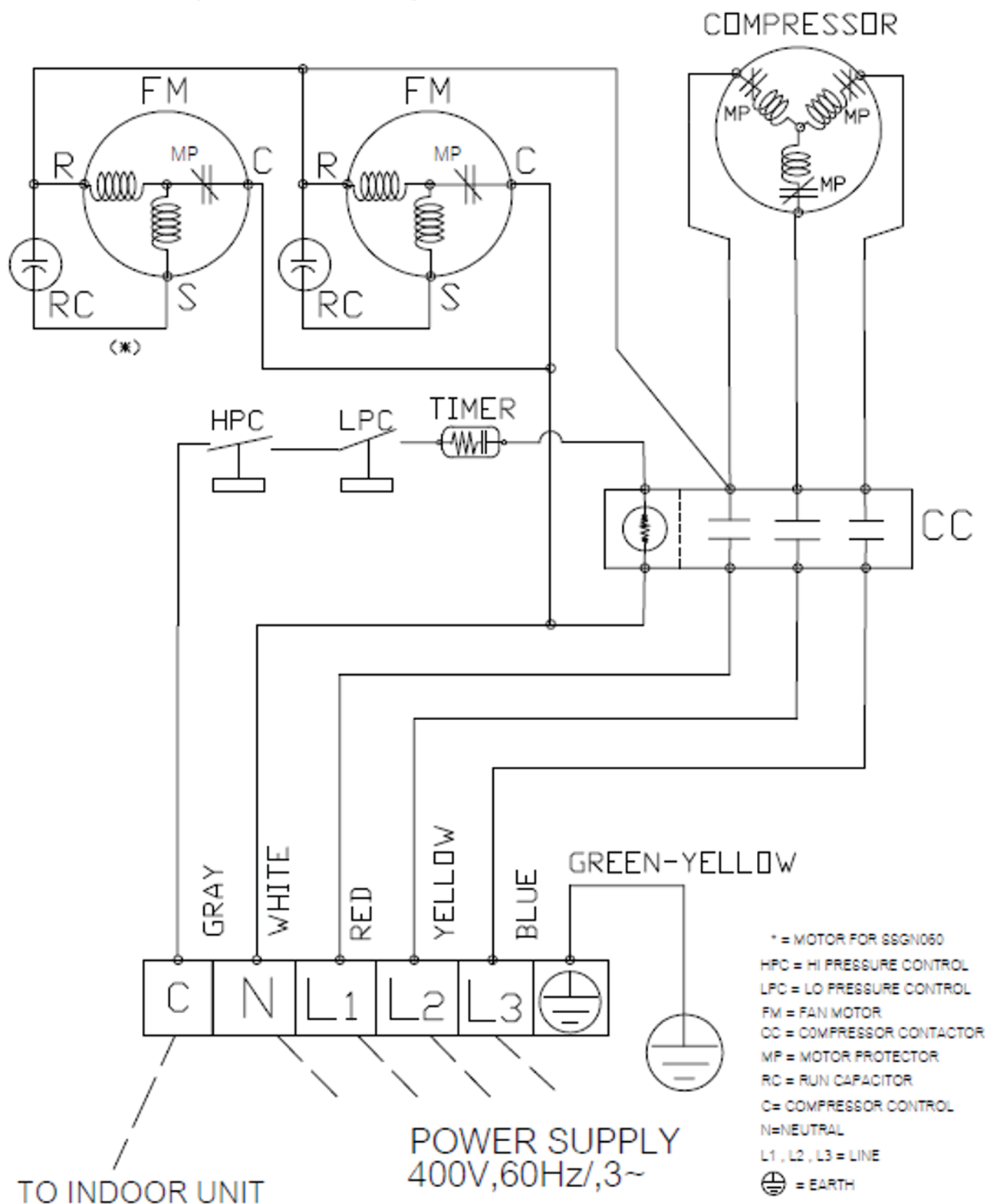
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WIRING DIAGRAM OUTDOOR UNIT (SINGLE PHASE) SSGN-018 TO 036JA011



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WIRING DIAGRAM OUTDOOR UNIT (THREE PHASE) SSGN-042 TO 060VA011



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SELECTING AND SIZING LINE SETS [SSGN MODELS]

LINE SETS AND FITTING LOSSES

Refrigerant lines are measured in terms of actual length and equivalent length. Actual length is used for refrigerant charge applications and is the measurement of all of the vertical and horizontal lines from the indoor and outdoor units. Equivalent length takes into account pressure losses from line lengths, fittings, vertical separations, accessories and filter dryers. Table below provides equivalent lengths for different commonly used parts in refrigerant lines. Equivalent length is the sum of the actual length of the line set plus the equivalent length of all fittings, accessories and filter dryers. Equivalent length is used in determining proper line sizing and installation.

EQUIVALENT LENGTH FOR FITTINGS (FT)							
LINE SIZE (IN)	90° SHORT RADIUS ELBOW	90° LONG RADIUS ELBOW	45° ELBOW	SOLENOID VALVE	CHECK VALVE	SITE GLASS	FILTER DRYER
3/8	1.3	0.8	0.3	6	4	0.4	6
1/2	1.4	0.9	0.4	9	5	0.6	6
5/8	1.5	1	0.5	12	6	0.8	6
3/4	1.9	1.3	0.6	14	7	0.9	6
7/8	2.3	1.5	0.7	15	8	1	6
1-1/8	2.7	1.8	0.9	22	12	1.5	6

LIQUID LINE SELECTION

Refrigerant lines are measured in terms of actual length and equivalent length. Actual length is used for refrigerant charge applications and is the measurement of all of the vertical and horizontal lines from the indoor and outdoor units. Equivalent length takes into account pressure losses from line lengths, fittings, vertical separations, accessories and filter dryers. Table below provides equivalent lengths for different commonly used parts in refrigerant lines. Equivalent length is the sum of the actual length of the line set plus the equivalent length of all fittings, accessories and filter dryers. Equivalent length is used in determining proper line sizing and installation.

The purpose of the liquid line is to transport warm sub-cooled liquid refrigerant from the outdoor unit to the indoor unit. It is important to maintain a column of liquid all the way to the expansion device and not to allow the refrigerant to flash into superheated vapor. The flashing of refrigerant can occur for the following reason:

- Low refrigerant charge
- Improperly selected liquid line size
- Absorption of heat prior to expansion device
- Excessive vertical rise between the condenser and evaporator



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The procedure for selecting the proper liquid line size and length is as follows:

- Measure the total amount of vertical rise (elevation)
- Measure the actual amount of liquid line required
- Add all of the equivalent lengths associated with any fittings or accessories using above table.
- Add the actual lengths and equivalent lengths. This will equal your total equivalent length.
- Reference the line sizing chart that matches the application (e.g. ODU above, ODU below, ODU same elevation as the IDU) and the capacity size of the equipment.
- Verify that the value of the calculated total equivalent length is compatible with the applications vertical rise and diameter of the liquid line.
- Using the equivalent length total and the vertical rise in the application (if require) to determine the size and allowable lengths of the liquid line piping.

LIQUID LINE GENERAL NOTES:

- Regardless of equivalent lengths, the actual linear length of the tubing shall not exceed 200'.
- Design of the liquid line must not exceed 400 FPM and must have a minimum of 100 FPM.
- Liquid lines must be sized to minimise the refrigerant pressure change.
- Sufficient refrigerant sub-cooling must be maintained at the expansion device for proper system operation.
- R-410A losses 0.43 PSI for every foot of vertical lift as a liquid as a liquid. Length of pipe, fittings, liquid line filter drier also add pressure drop thus limiting applications where the outdoor unit is below the indoor unit to much shorter distances than when the outdoor unit is above the indoor unit.
- When the outdoor unit is above the indoor unit, the vertical line experiences in PSIG (Static Gain) which will also lead to changes in sub cooling at the metering device.
- The total pressure drop allowed for the liquid line is 50 PSI.

VAPOR SUCTION LINE SELECTION:

The purpose of the suction line is to return superheated vapor to the compressor from the evaporator. Suction line sizing and refrigerant velocity is important as they have a role in ensuring the return of oil to the compressor. An improperly sized suction line can reduce performance of the system.

The procedure for selecting the proper liquid line size is as follows:

- Measure the total amount of vertical rise
- Measure the actual amount of suction line required
- Add all of the equivalent lengths associated with any fittings or accessories using fittings table.
- Add the actual lengths and equivalent lengths. This will equal your total equivalent length of suction line.
- Reference the line sizing charts that matches the application (e.g. ODU above, below or same elevation as the IDU) and the capacity size of the equipment.
- Verify that the value of the calculated total equivalent length is compatible with the applications vertical rise and diameter of the liquid line.
- Using the equivalent length total and the vertical rise in the application (if required) to determine the size and allowable liquid line lengths of the liquid line piping.

SUCTION LINE GENERAL NOTES:

- The Manufacturer does not require traps in the suction line when the condenser is above the evaporator, and recommends they not be used. The combination of miscibility of the POE oil and R-410A , along with compliance to the refrigerant line design instructions will ensure oil is properly returned without exceeding pressure drop limits in the vapour line. Traps will add to the pressure drop and therefore are counterproductive when the suction line is sized according to these guidelines.
- Refrigerant velocity for vertical suction risers must be maintained at 1100 FPM to ensure oil return. Horizontal suction line must maintain 800 FPM. This



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will often result in different size refrigerant lines between horizontal and vertical applications. While gravity has very little effect on the gas itself, oil and pressure drop are still key factors.

- It is acceptable to use larger size suction line for shorter horizontal runs and in the applications where the indoor unit is above the outdoor unit to prevent capacity losses.
- Pressure drop within the suction line should be limited to 5 PSI for R-410A systems although the longest line may slightly exceed this limit in an effort to maintain velocity. The maximum pressure is 7 PSI.
- Suction line pressure loss reduces capacity by 0.6% for R-410A per PSI. In order to minimize capacity loss suction pressure loss must be minimized.

REFRIGERANT LEVEL ADJUSTMENT:

The residential outdoor units (ODU) are R-410A factory charged. The factory charge amount accounts for the ODU volume and an additional 15 feet of refrigerant tubing with a liquid line diameter of 3/8". This factory charge does not account for the volume of the factory supplied, field installed liquid line filter drier. Final adjustment of the refrigerant charge may be necessary during the system commissioning even if the application has exactly 15 feet of line set due to other installation variables such as the filter drier and pressure drops due to vertical separation. If additional refrigerant charge is needed it should be added before opening the ODU valves.

Adjust the refrigerant charge by using the actual liquid line length and the table below that indicates refrigerant charge in ounces per feet of the indicated liquid line size:

- 1/4" line diameter uses 0.3 ounces per foot of line (6.4mm uses 8.5g per 0.30m)
- 5/16" line diameter uses 0.4 ounces per foot of line (7.9mm uses 11.3g per 0.30m)
- 3/8" line diameter uses 0.6 ounces per foot of line (9.5mm uses 17.0g per 0.30m)
- 1/2" line diameter uses 1.2 ounces per foot of line (12.7mm uses 34.0g per 0.30m)
- Note: The field supplied filter drier requires an additional 6.0 ounces of refrigerant if sized properly.
- Note: The factory provided charge to account for the 15 feet of line set is 9 oz. (based on 3/8" line, 0.6 oz. per foot)

Charge Adjustment = (Line Diameter oz. per ft.) X (Total Actual Length) – Factory charge + Filter Drier

ADDITIONAL OIL ADJUSTMENT:

All refrigerant in the system will carry a small amount of oil. As more refrigerant is added to the system, additional oil will also need to be added.

The formula for determining how much oil to add to the system is as follows:

Oil to be Added = [(Charge Adjustment + OD Unit Name Charge (oz.)) x (0.022) – [(0.10) x (Compressor Name Plate Oil Charge OZ)]]

Sound Level (dBA)				
Model No.	Speed (High)	Speed (Medium)	Speed (Medium Low)	Speed (Low)
SPRL-018	48.5	44.3	40.1	35.8
SPRL-024	50.6	49.7	47.6	46.1
SPRL-030	57.2	55.6	53.2	50.9
SPRL-036	54.7	52.2	48.8	46.3
SPRL-042	56.4	55.4	54.7	53.7
SPRL-048	57.6	56.6	55.9	54.8
SPRL-060	58.0	57.6	56.5	55.7



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PIPE SIZE CHARTS

OUTDOOR UNIT ABOVE INDOOR UNIT

Unit Model	Liquid Line Size [mm]	Suction Line Size [mm]	Condition - Standard Unit		
			Equivalent Length in Meters		
			<15	15.5-22.5	23-45
			Maximum Vertical Separation / Capacity Multiplier		
SSGN-018/SPRL-018	1/4" [6.35]	5/8" [15.88]	Refer table provided separately		
	5/16" [7.94]	5/8" [15.88]			
	3/8" [9.525]	5/8" [15.88]			
SSGN-024/SPRL-024	1/4" [6.35]	5/8" [15.88]	Refer table provided separately		
	5/16" [7.94]	5/8" [15.88]			
	3/8" [9.525]	5/8" [15.88]			
SSGN-030/SPRL-030	5/16" [7.94]	5/8" [15.88]	15 / 0.98	22.5 / 0.97	33.5 / 0.96
	3/8" [9.525]	5/8" [15.88]	15 / 0.98	22.5 / 0.97	33.5 / 0.96
	5/16" [7.94]	3/4" [19.06]	15 / 1.00	22.5 / 0.99	33.5 / 0.99
	3/8" [9.525]	3/4" [19.06]	15 / 1.00	22.5 / 1.00	33.5 / 0.99
SSGN-036/SPRL-036	5/16 [7.94]	3/4 [19.06]	15 / 1.00	22.5 / 0.99	33.5 / 0.99
	3/8 [9.525]	3/4 [19.06]	15 / 1.00	22.5 / 0.99	33.5 / 0.99
	5/16 [7.94]	7/8 [22.22.5]	15 / 1.00	22.5 / 1.00	33.5 / 1.00
	3/8 [9.525]	7/8 [22.22.5]	15 / 1.00	22.5 / 1.00	33.5 / 1.00
SSGN-042/SPRL-042	3/8 [9.525]	3/4 [19.06]	15 / 0.98	22.5 / 0.97	33.5 / 0.96
	1/2 [12.71]	3/4 [19.06]	15 / 0.98	22.5 / 0.97	33.5 / 0.96
	3/8 [9.525]	7/8 [22.22.5]	15 / 1.00	22.5 / 0.98	33.5 / 0.98
	1/2 [12.71]	7/8 [22.22.5]	15 / 1.00	22.5 / 0.98	33.5 / 0.98
SSGN-048/SPRL-048	3/8 [9.525]	3/4 [19.06]	15 / 0.98	22.5 / 0.96	33.5 / 0.95
	1/2 [12.71]	3/4 [19.06]	15 / 0.98	22.5 / 0.96	33.5 / 0.95
	3/8 [9.525]	7/8 [22.22.5]	15 / 1.00	22.5 / 0.99	33.5 / 0.98
	1/2 [12.71]	7/8 [22.22.5]	15 / 1.00	22.5 / 0.99	33.5 / 0.98
SSGN-060/SPRL-060	3/8 [9.525]	3/4 [19.06]	15 / 0.98	22.5 / 0.96	33.5 / 0.95
	1/2 [12.71]	3/4 [19.06]	15 / 0.98	22.5 / 0.96	33.5 / 0.95
	3/8 [9.525]	7/8 [22.22.5]	15 / 1.00	22.5 / 0.99	33.5 / 0.98
	1/2 [12.71]	7/8 [22.22.5]	15 / 1.00	22.5 / 0.99	33.5 / 0.98



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OUTDOOR UNIT BELOW INDOOR UNIT

Unit Model	Liquid Line Size [mm]	Suction Line Size [mm]	Condition - Standard Unit		
			Equivalent Length in Meters		
			<15	15.5-22.5	23-45
			Maximum Vertical Separation / Capacity Multiplier		
SSGN-018/SPRL-018	5/16" [7.94]	5/8" [15.88]	Refer table provided separately		
	3/8" [9.525]	5/8" [15.88]			
	5/16" [7.94]	3/4" [19.06]			
SSGN-024/SPRL-024	3/8" [9.525]	3/4" [19.06]	Refer table provided separately		
	5/16" [7.94]	5/8" [15.88]			
	3/8" [9.525]	5/8" [15.88]			
SSGN-030/SPRL-030	5/16" [7.94]	3/4" [19.06]	15/1.00	13.5/1.00	25/1.00
	3/8" [9.525]	3/4" [19.06]	15/1.00	22.5/1.00	24.5/1.00
	5/16" [7.94]	3/4" [19.06]	10.5/1.00	10/0.99	
	3/8" [9.525]	3/4" [19.06]	15/1.00	22.5/0.99	24.5/0.98
SSGN-036/SPRL-036	1/2" [12.71]	3/4" [19.06]	15/1.00	22.5/0.99	24.5/0.98
	3/8" [9.525]	7/8" [22.23]	15/1.00	22.5/1.00	24.5/1.00
	1/2" [12.71]	7/8" [22.23]	15/1.00	22.5/1.00	24.5/1.00
	3/8" [9.525]	3/4" [19.06]	15/0.99	22.5/0.99	24.5/0.98
SSGN-042/SPRL-042	1/2" [12.71]	3/4" [19.06]	15/0.99	22.5/0.99	24.5/0.98
	3/8" [9.525]	7/8" [22.23]	15/1.00	22.5/1.00	24.5/1.00
	1/2" [12.71]	7/8" [22.23]	15/1.00	22.5/1.00	24.5/1.00
	3/8" [9.525]	3/4" [19.06]	15/0.99	22.5/0.99	24.5/0.98
SSGN-048/SPRL-048	1/2" [12.71]	3/4" [19.06]	15/0.99	22.5/0.99	24.5/0.98
	3/8" [9.525]	7/8" [22.23]	15/1.00	22.5/1.00	24.5/1.00
	1/2" [12.71]	7/8" [22.23]	15/1.00	22.5/1.00	24.5/1.00
	3/8" [9.525]	3/4" [19.06]	15/0.98	22.5/0.98	24.5/0.97
SSGN-060/SPRL-060	1/2" [12.71]	3/4" [19.06]	15/0.98	22.5/0.98	24.5/0.97
	3/8" [9.525]	7/8" [22.23]	15/1.00	22.5/0.99	24.5/0.99
	1/2" [12.71]	7/8" [22.23]	15/1.00	22.5/0.99	24.5/0.99
	3/8" [9.525]	3/4" [19.06]	15/0.98	22.5/0.98	24.5/0.97



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PIPE LENGTH GUIDELINES FOR MODEL 18 AND 24 WITH ROTARY COMPRESSOR

Life Size Chart for R410a Condensing Units with Rotary Compressor

a. Limitations on pipe lengths

Conditions / Capacity	09 ~ 18kBTU/Hr.	21 ~ 30kBTU/Hr.
Total Equivalent Length	20	30
Maximum Elevation (ODU above IDU)	10	21
Maximum Elevation (ODU below IDU)	6	9

b. Pipe Sizes

Unit Capacity	Liquid Line mm	Gas Line mm
09 ~ 18kBTU/Hr.	9.52	12.7
21 ~ 30kBTU/Hr.	9.52	15.88

NOTE:

Applicable for both T1 and T3 climate conditions.

In order to have long life expectancy of these compressors, following precautions are must during commissioning and operation.

1. Gas charge quantity must not increase above rated on compressor specification.
2. Additional oil must be changed per guidelines (depending upon the pipe size and running length).
3. Ref. Pipe to be used must size properly as specified in the catalogues.
4. Rotary compressors are sensitive to discharge side pressure / temperatures.

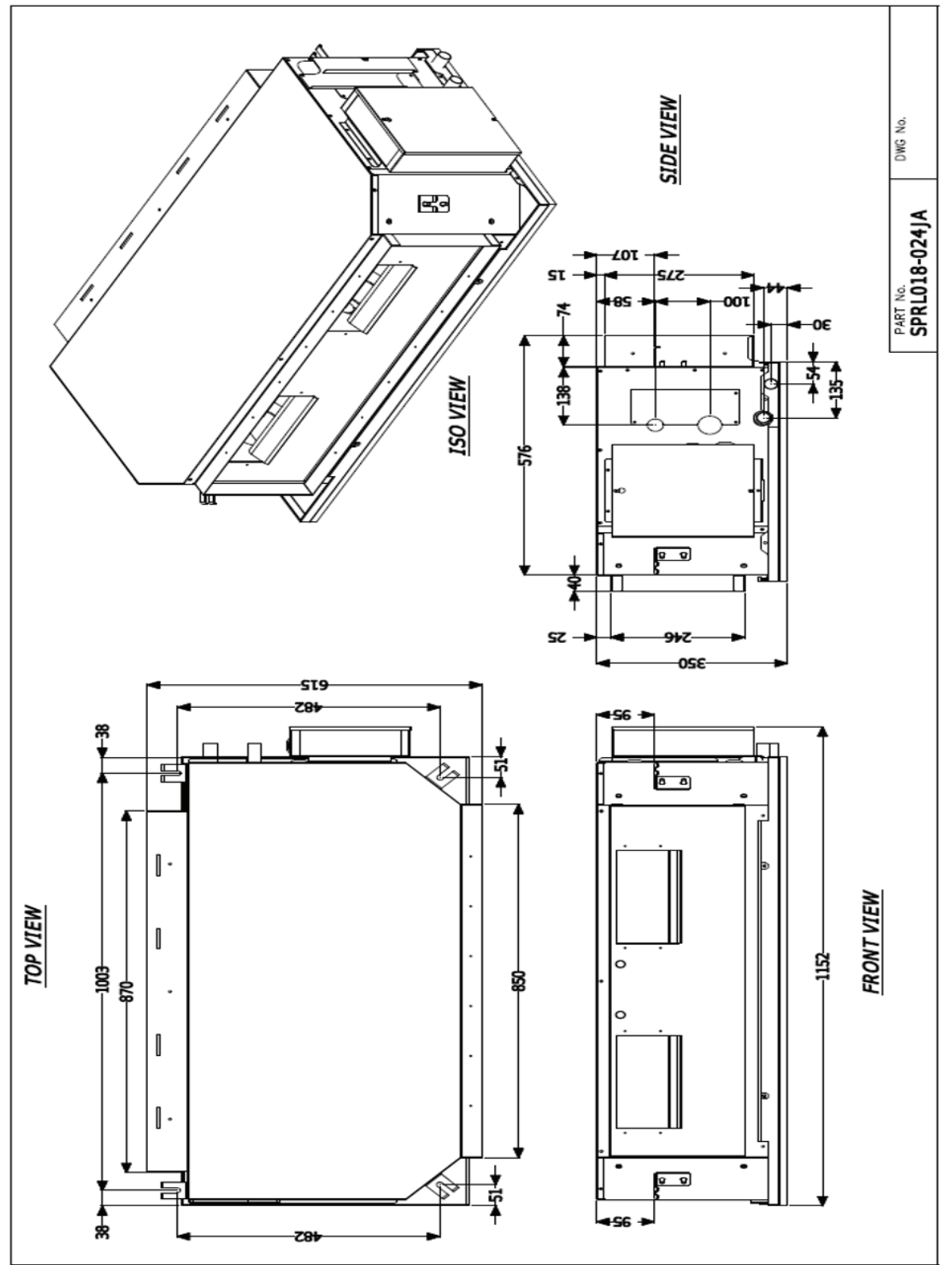
Hence routine maintenance is must for longer life expectancy.



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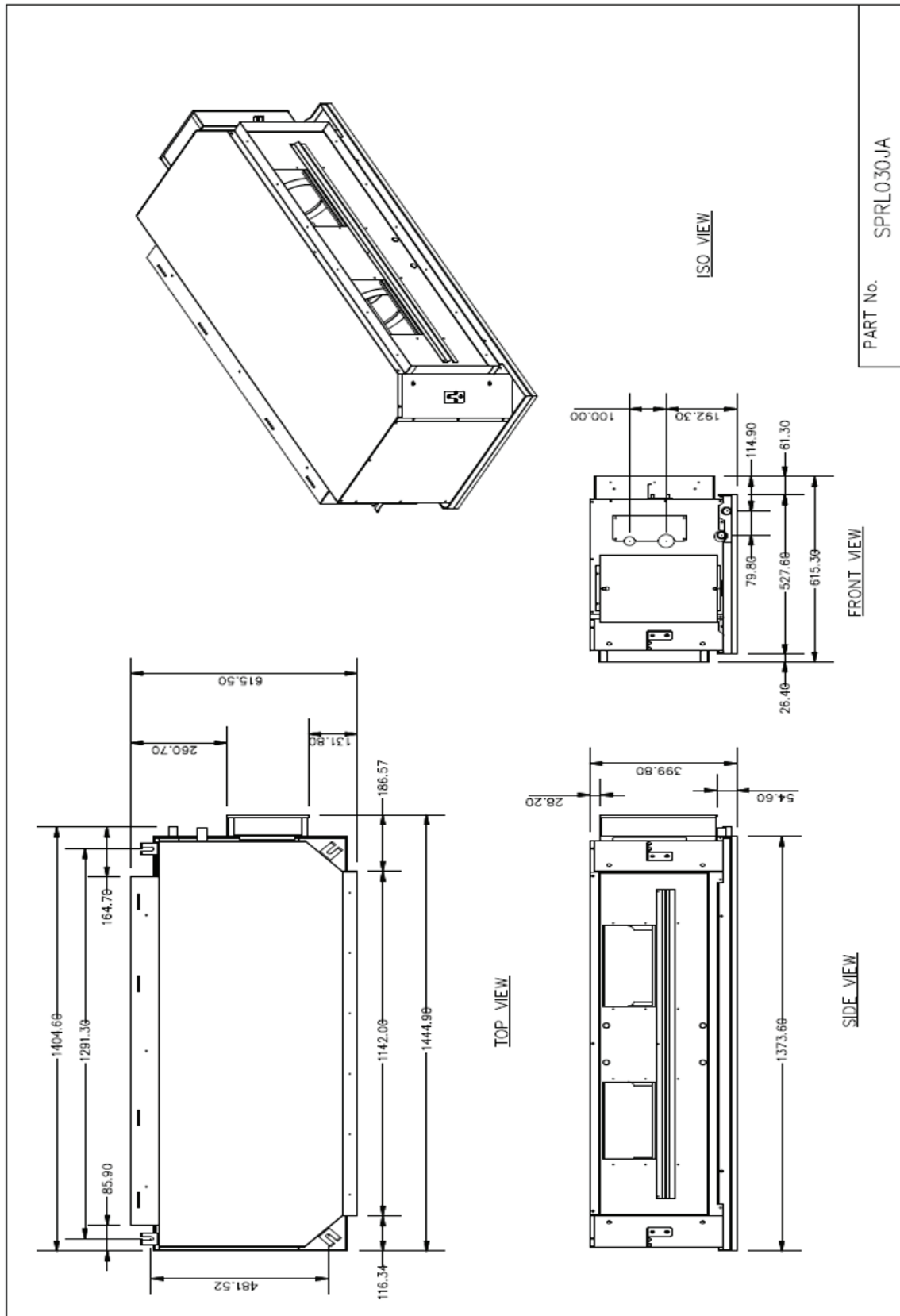
GENERAL ARRANGEMENT LAYOUT

SPRL-018/024JA



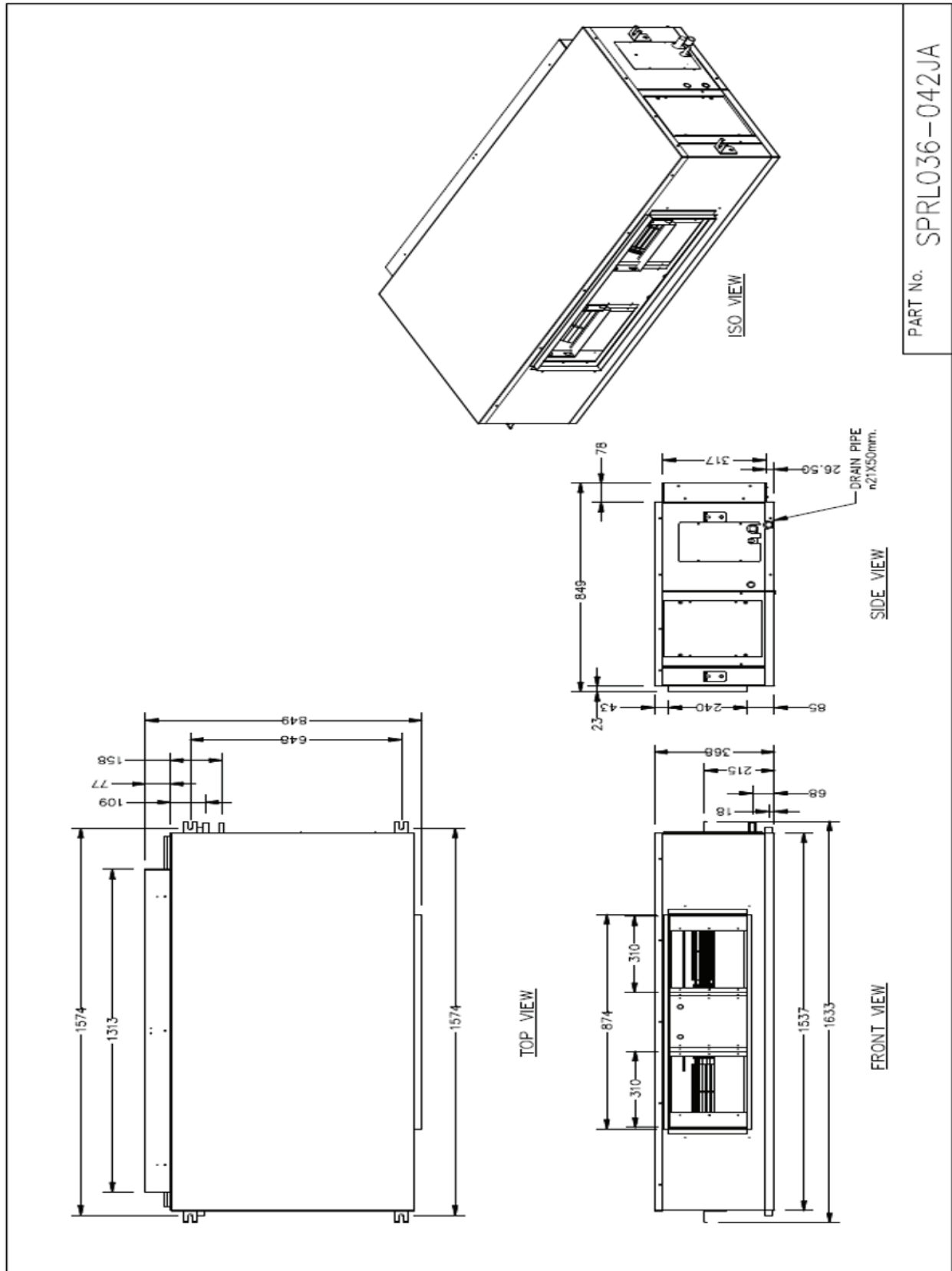
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SPRL-030JA



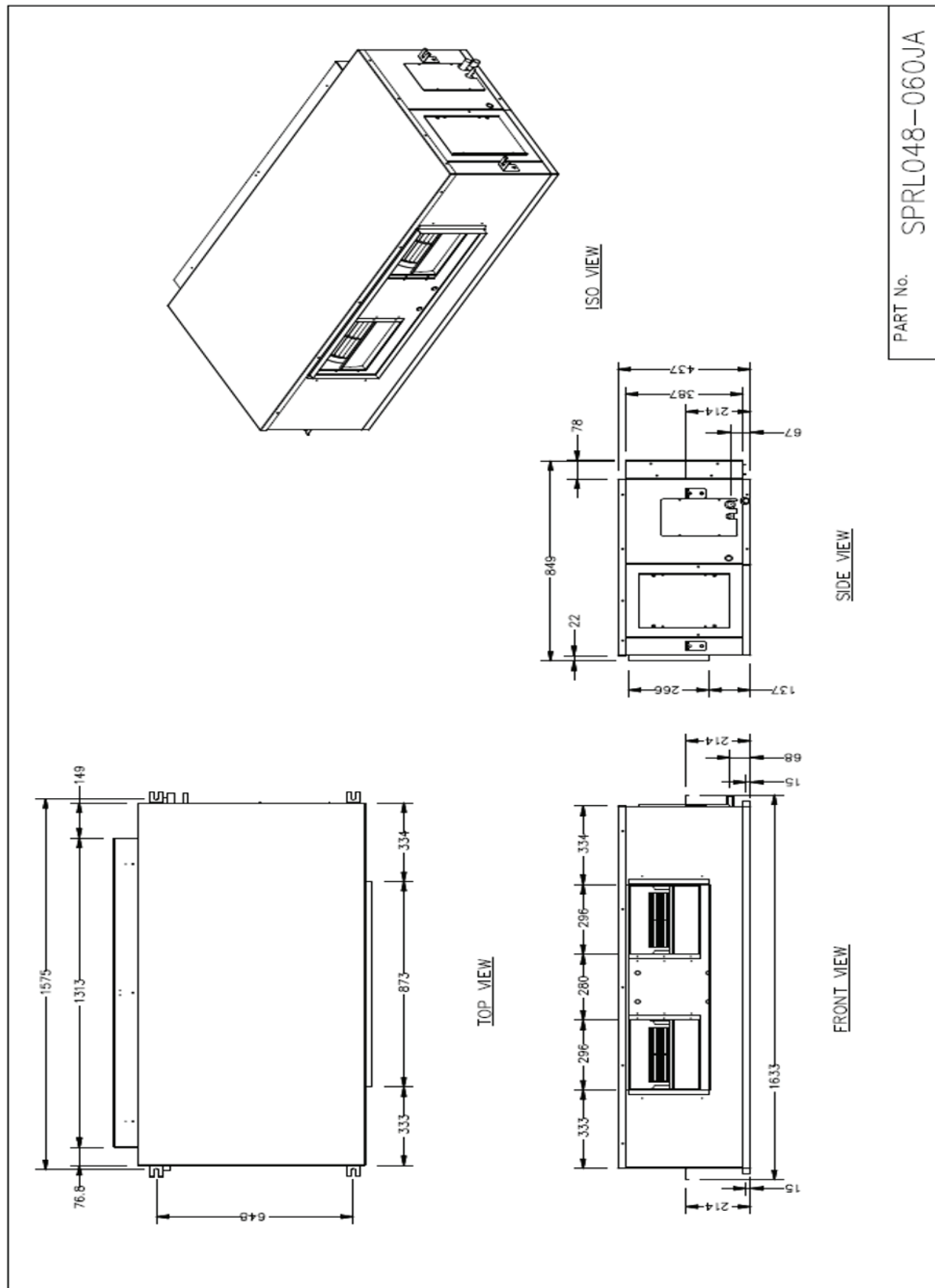
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SPRL-036/042JA



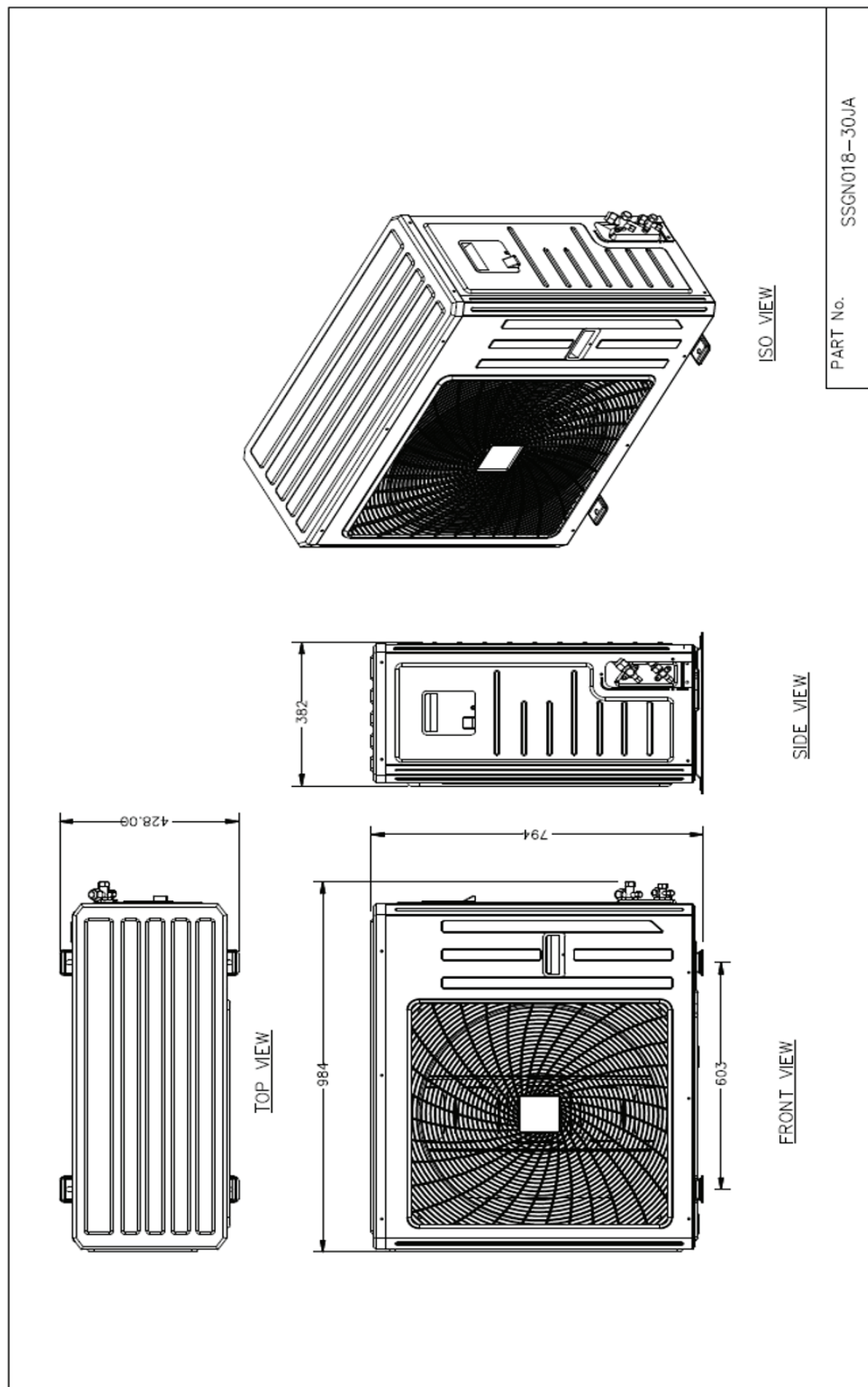
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SPRL-048/060JA



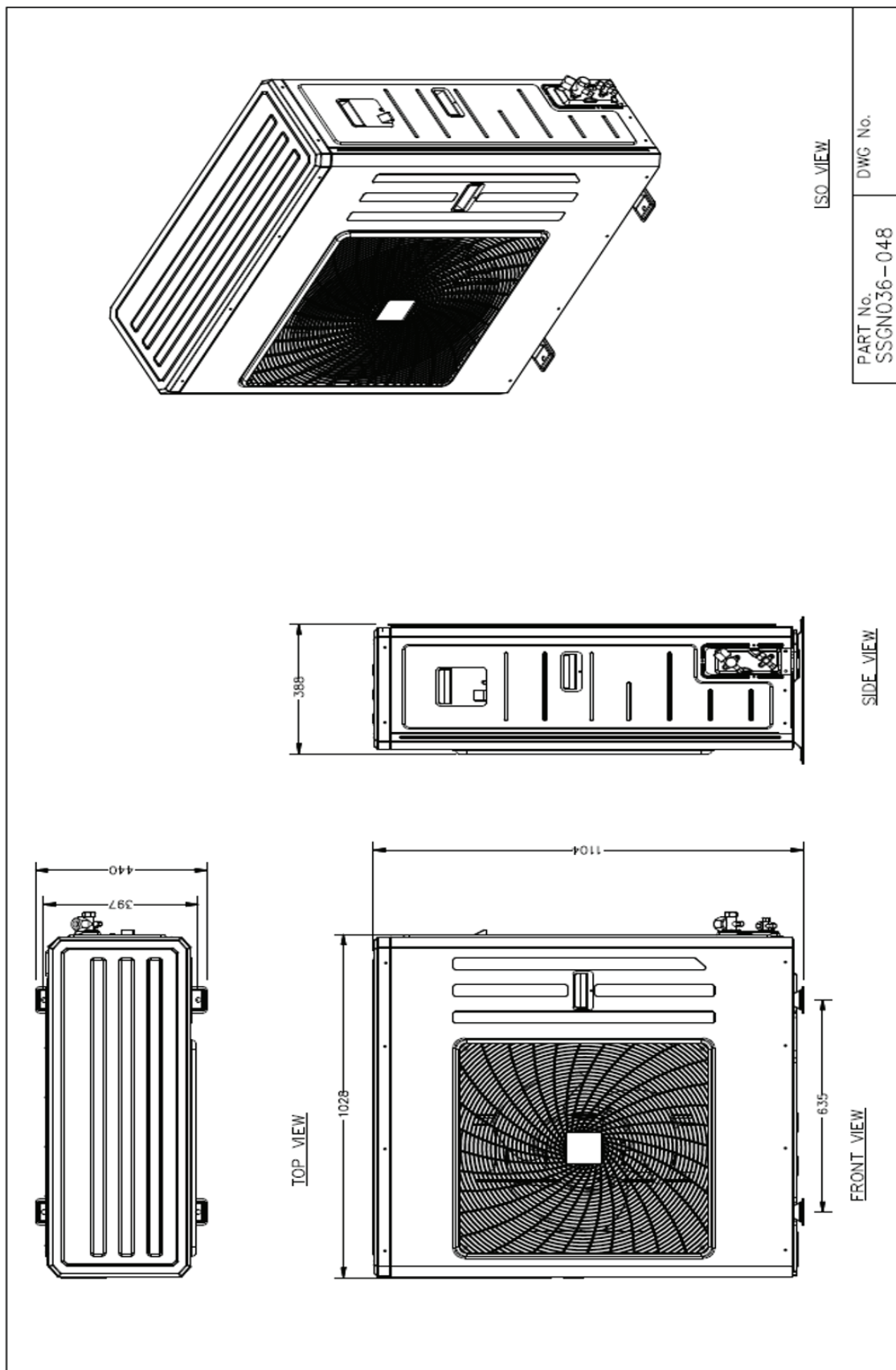
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SSGN-018/030JA



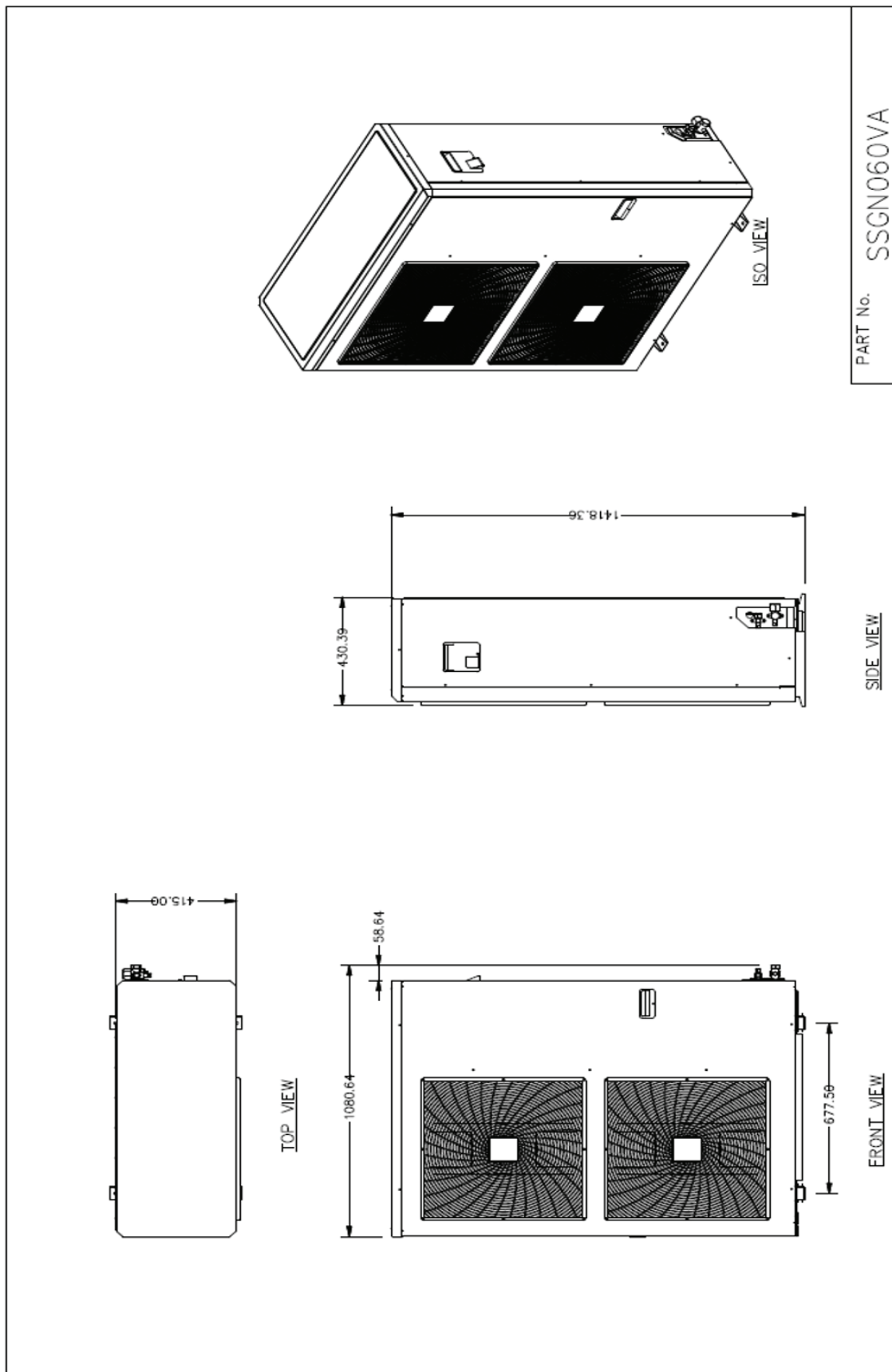
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SSGN-036/048



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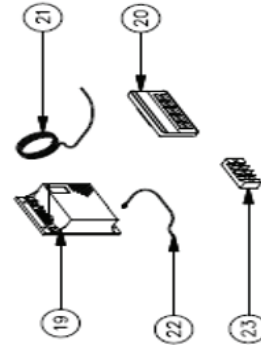
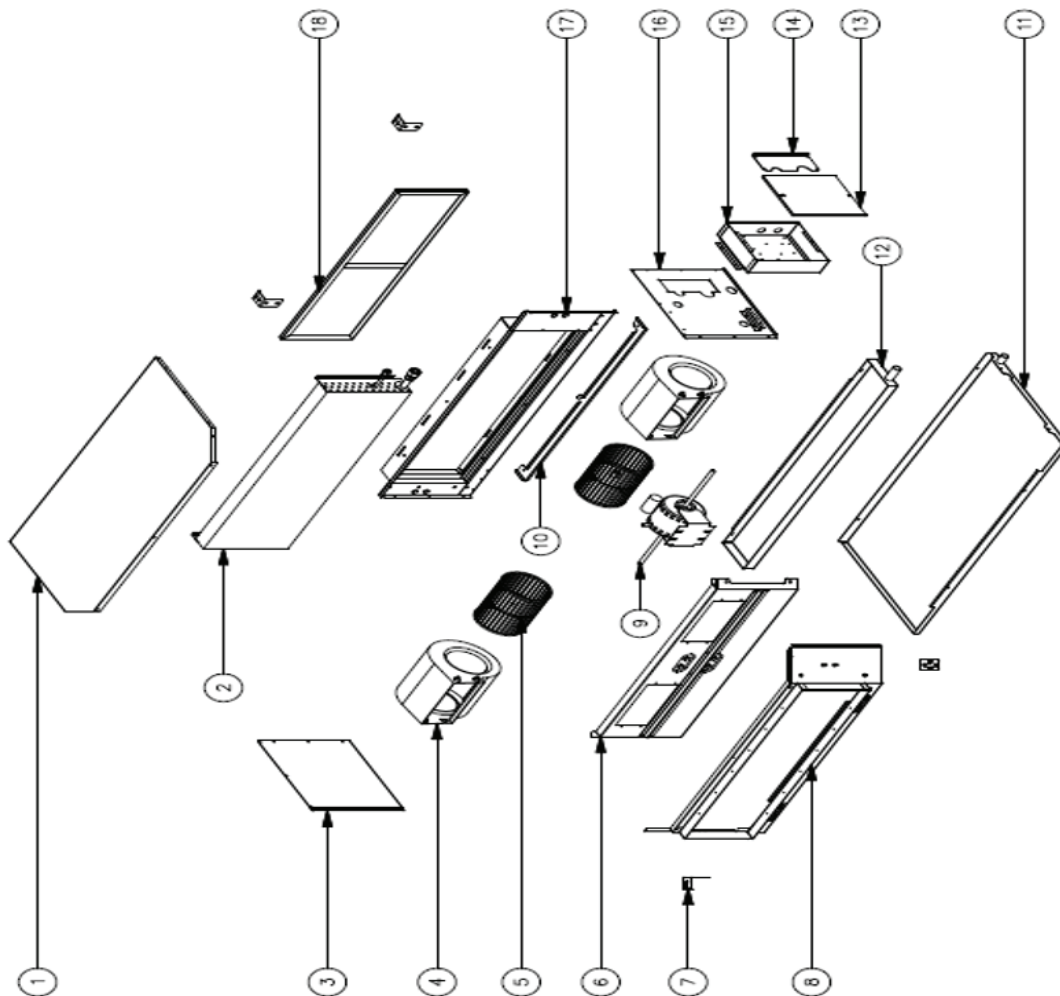
SSGN-060VA



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EXPLODED VIEW AND SPARE PART LIST

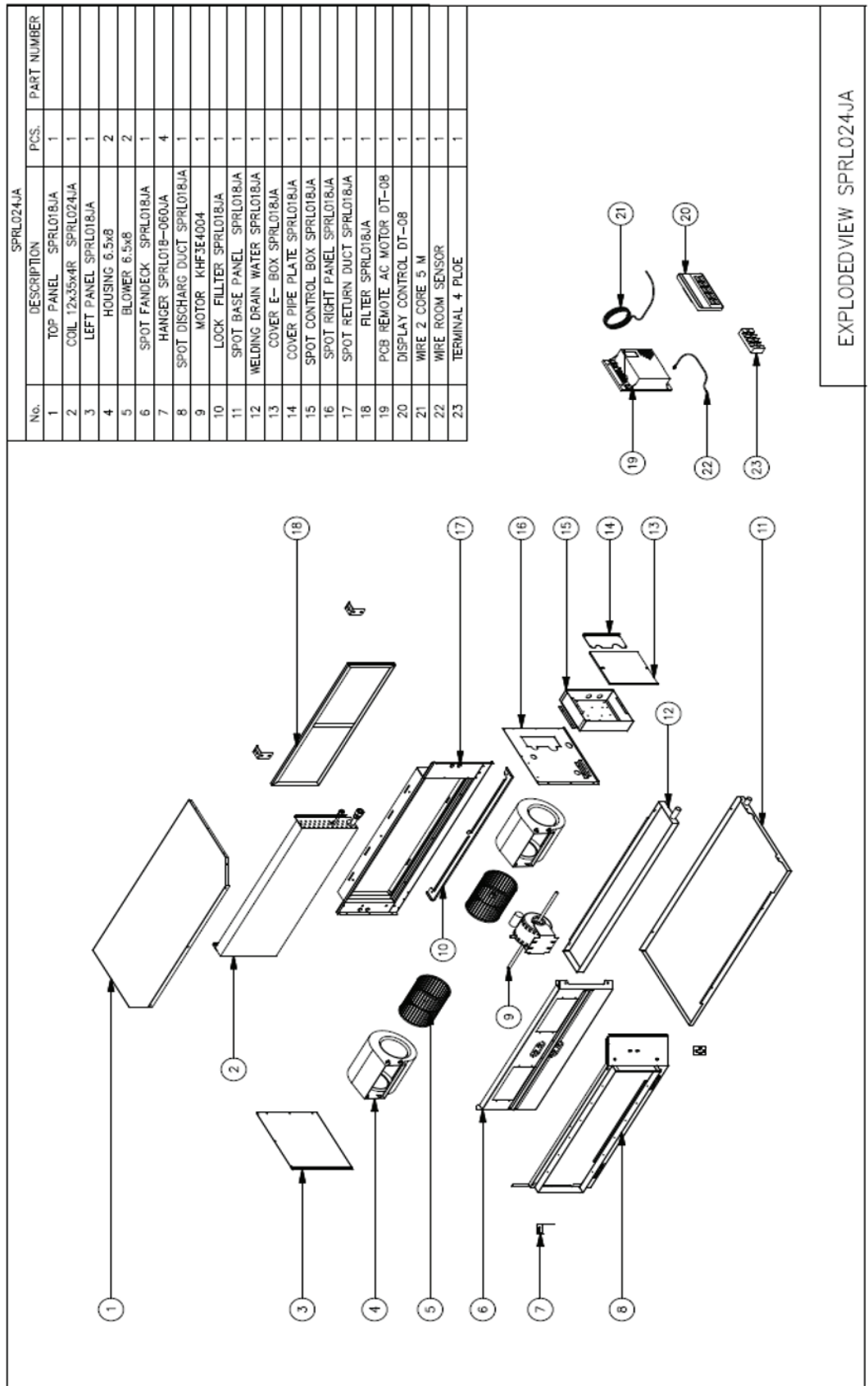
SPRL018JA			
No.	DESCRIPTION	PCS.	PART NUMBER
1	TOP PANEL SPRL018JA	1	
2	COIL 12x35x3R SPRL018JA	1	
3	LEFT PANEL SPRL018JA	1	
4	HOUSING 6.5x8	2	
5	BLOWER 6.5x8	2	
6	SPOT FANDECK SPRL018JA	1	
7	HANGER SPRL018-060JA	4	
8	SPOT DISCHARG DUCT SPRL018JA	1	
9	MOTOR KOF3E4012	1	
10	LOCK FILTER SPRL018JA	1	
11	SPOT BASE PANEL SPRL018JA	1	
12	WELDING DRAIN WATER SPRL018JA	1	
13	COVER E- BOX SPRL018JA	1	
14	COVER PIPE PLATE SPRL018JA	1	
15	SPOT CONTROL BOX SPRL018JA	1	
16	SPOT RIGHT PANEL SPRL018JA	1	
17	SPOT RETURN DUCT SPRL018JA	1	
18	FILTER SPRL018JA	1	
19	PCB REMOTE AC MOTOR DT-08	1	
20	DISPLAY CONTROL DT-08	1	
21	WIRE 2 CORE 5 M	1	
22	WIRE ROOM SENSOR	1	
23	TERMINAL 4 PLOE	1	



EXPLODEDVIEW SPRL018JA

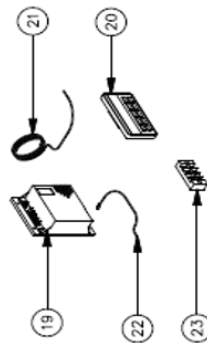
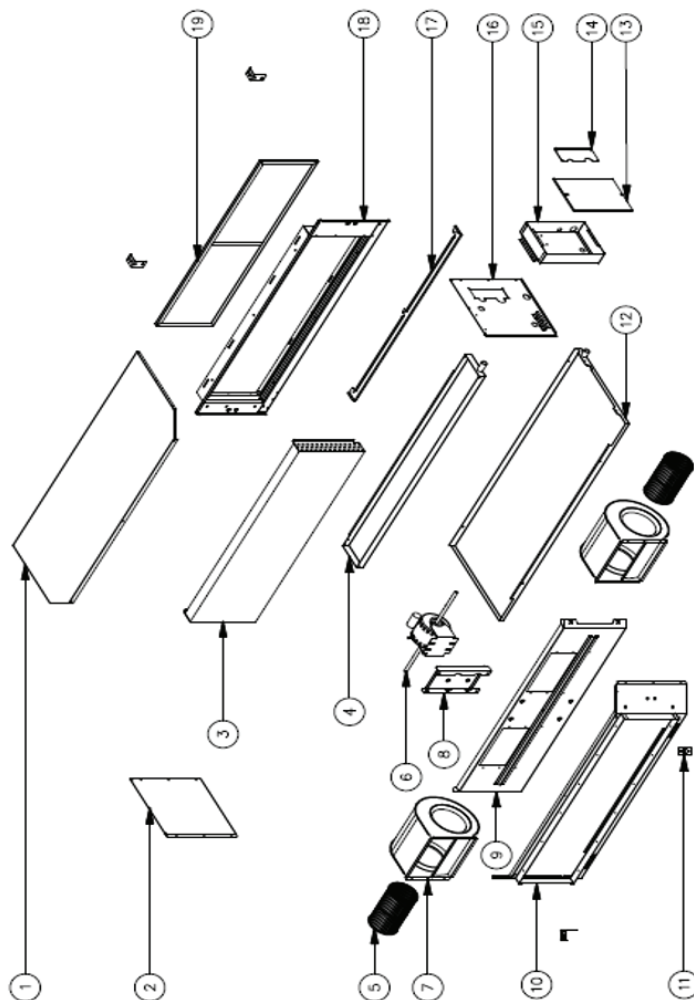


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SPRL030JA			
No.	DESCRIPTION	PCS.	PART NUMBER
1	TOP PANEL SPRL030JA	1	
2	LEFT PANEL SPRL030JA	1	
3	COIL 14x46JR SPRL030JA	1	
4	SPOT DRAIN WATER SPRL030JA	1	
5	BLOWER 8x8	2	
6	MOTOR KHF3G4008	1	
7	HOUSING 8x8	2	
8	SPOT SUPPORT MOTOR SPRL030JA	1	
9	SPOT FAN DACK SPRL030JA	1	
10	SPOT DISCHARGE DUCT SPRL030JA	1	
11	HANGER SPRL018-030JA	4	
12	SPOT BASE PANEL SPRL030JA	1	
13	COVER E- BOX SPRL030JA	1	
14	COVER PIPE PLATE SPRL030JA	1	
15	SPOT CONTROL BOX SPRL030JA	1	
16	SPOT RIGHT PANEL SPRL030JA	1	
17	LOCK-FILTER SPRL030JA	1	
18	SPOT RETURN DUCT SPRL030JA	1	
19	FILTER SPRL030JA	1	
20	PCB REMOTE AC MOTOR DT-08	1	
21	DISPLAY CONTROL DT-08	1	
22	WIRE 2 CORE 5 M	1	
23	WIRE ROOM SENSOR	1	
24	TERMINAL 4 PLOE	1	

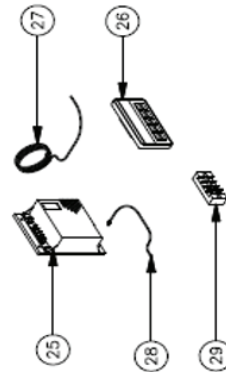
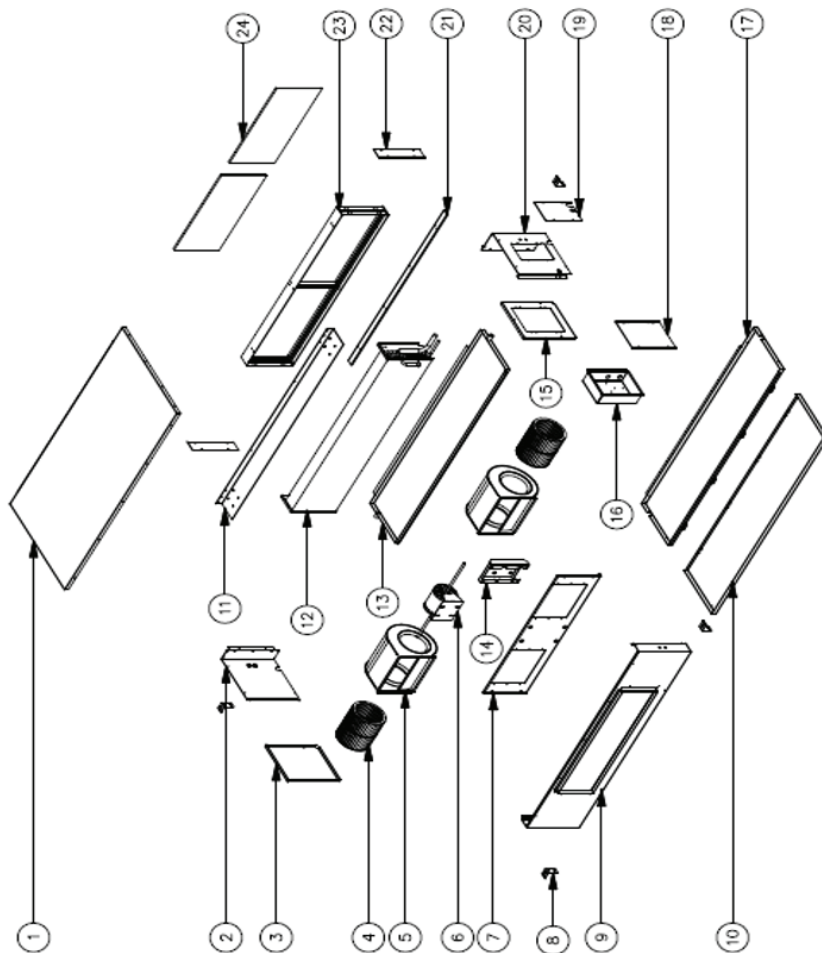


EXPLODEDVIEW SPRL030JA



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SPRL036JA			
NO.	DESCRIPTION	PCS.	PART NUMBER
1	TOP PANEL SPRL036JA	1	
2	SPOT SIDE PANEL LH SPRL036JA	1	
3	ACCESS DOOR SPRL036JA	1	
4	BLOWER 8x8	2	
5	HOUSING 8x8	2	
6	MOTOR KHFSU4004	1	
7	SPOT FANDECK SUPPORT FRAME 8X8 SPRL036JA	1	
8	HANGER	4	
9	SPOT FRONT PANEL SPRL036JA	1	
10	BOTTOM BASE PANEL 2 SPRL036JA	1	
11	COIL UPPER PLATE 12X51.5X4R SPRL036JA	1	
12	COIL 12X51.5X4R SPRL036JA	1	
13	WELDING DRAIN PAN SPRL036JA	1	
14	SPOT SUPPORT MOTORBLOWER 8X8 SPRL036JA	1	
15	ACCESS DOOR CONTROL BOX SPRL036JA	1	
16	CONTROL BOX COVER SPRL036JA	1	
17	SPOT BOTTOM BASE PANEL 1 SPRL036JA	1	
18	CONTROL BOX COVER SPRL036JA	1	
19	PLATE COVER SIDE PANEL RH 12x51.5x4R SPRL036JA	1	
20	SPOT SIDE PANEL RH SPRL036JA	1	
21	COVER FILTER SPRL036JA	1	
22	FRAME FILTER6 SPRL036JA	2	
23	SPOT FRAME FILTER SPRL036JA	1	
24	FILTER SPRL036JA	2	
25	PCB REMOTE AC MOTOR DT-08	1	
26	DISPLAY CONTROL DT-08	1	
27	WIRE 2 CORE 5 M	1	
28	WIRE ROOM SENSOR	1	
29	TERMINAL 4 PLOE	1	

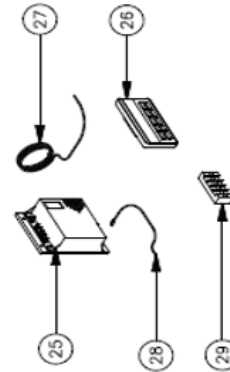
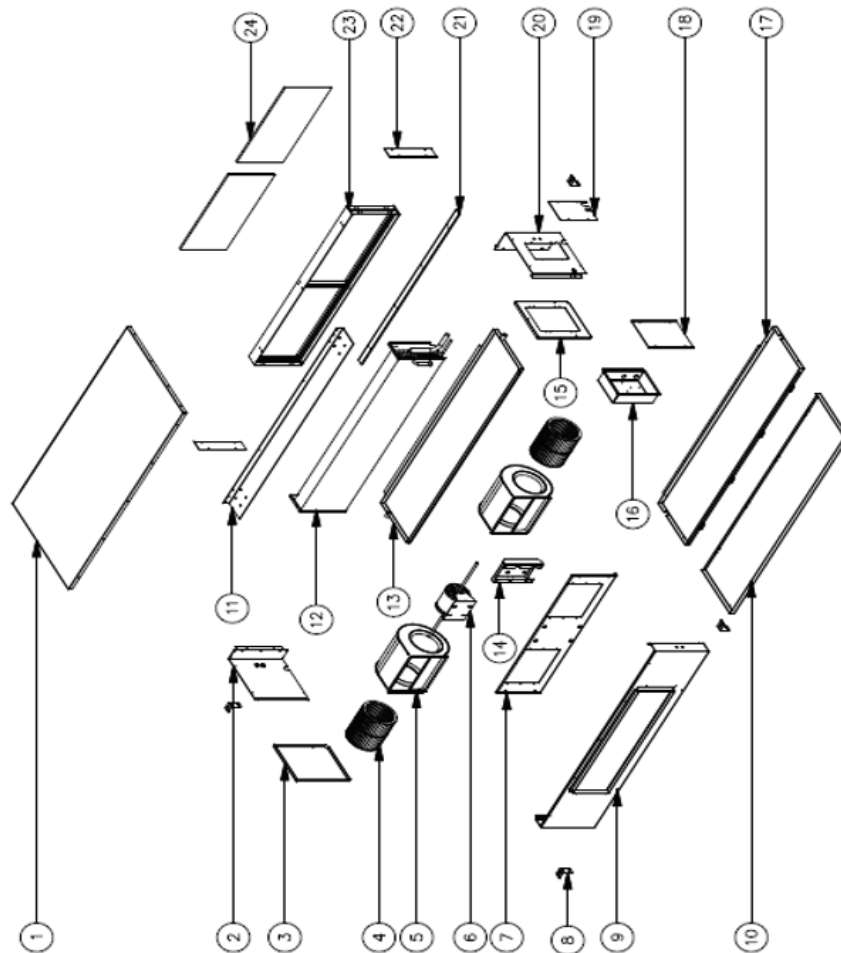


EXPLODEDVIEW SPRL036JA



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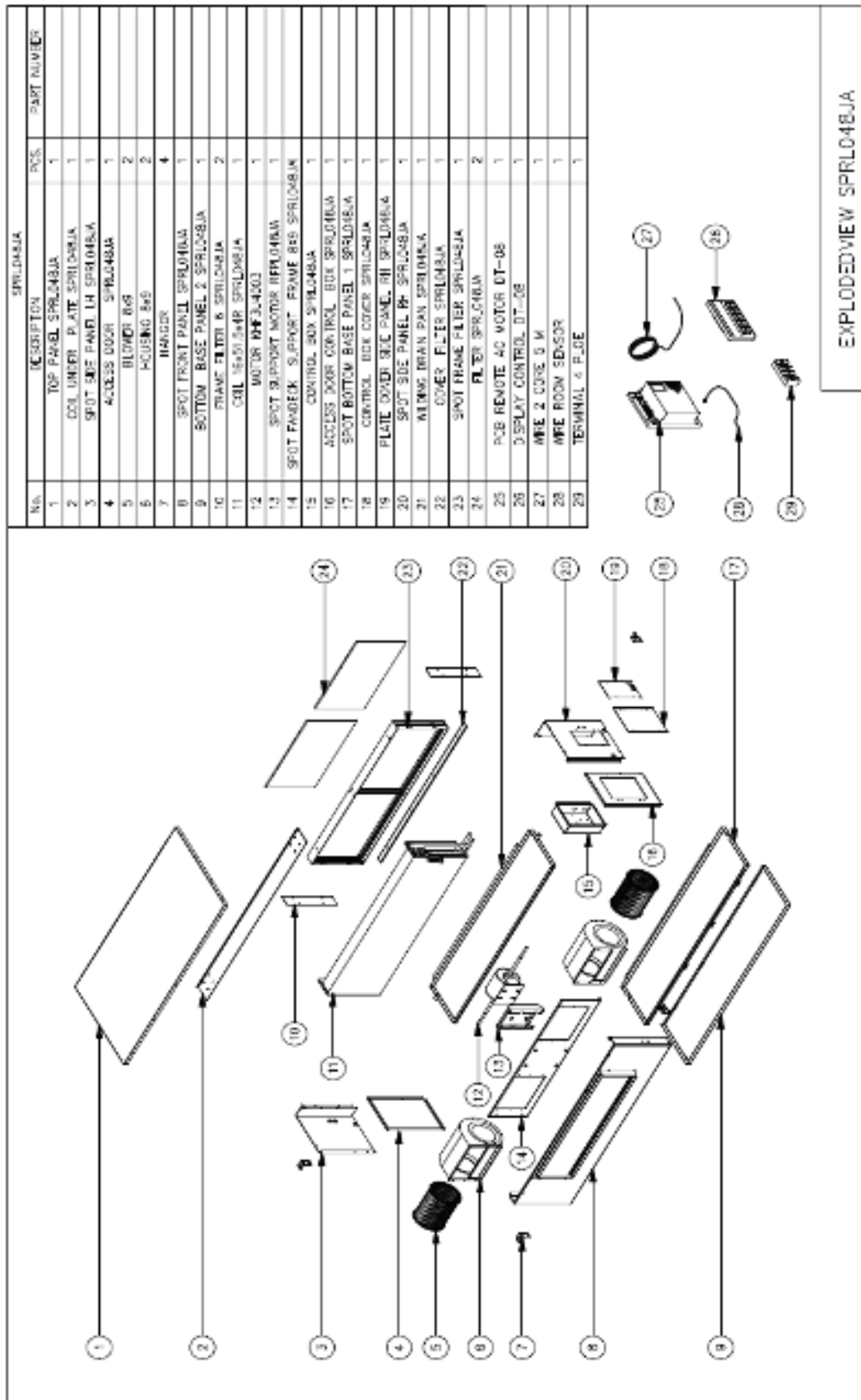
SPRL036JA			
N.O.	DESCRIPTION	PCS.	PART NUMBER
1	TOP PANEL SPRL036JA	1	
2	SPOT SIDE PANEL LH SPRL036JA	1	
3	ACCESS DOOR SPRL036JA	1	
4	BLOWER 8x9	2	
5	HOUSING 8x9	2	
6	MOTOR KHE3U4004	1	
7	SPOT FANDECK SUPPORT FRAME 8X9 SPRL036JA	1	
8	HANGER	4	
9	SPOT FRONT PANEL SPRL036JA	1	
10	BOTTOM BASE PANEL 2 SPRL036JA	1	
11	COIL UPPER PLATE 12X51.5X4R SPRL036JA	1	
12	COIL 12x51.5x4R SPRL036JA	1	
13	WELDING DRAIN PAN SPRL036JA	1	
14	SPOT SUPPORT MOTORBLOWER 8X9 SPRL036JA	1	
15	ACCESS DOOR CONTROL BOX SPRL036JA	1	
16	CONTROL BOX COVER SPRL036JA	1	
17	SPOT BOTTOM BASE PANEL 1 SPRL036JA	1	
18	CONTROL BOX COVER SPRL036JA	1	
19	PLATE COVER SIDE PANEL RH 12x51.5x4R SPRL036JA	1	
20	SPOT SIDE PANEL RH SPRL036JA	1	
21	COVER FILTER SPRL036JA	1	
22	FRAME FILTER6 SPRL036JA	2	
23	SPOT FRAME FILTER SPRL036JA	1	
24	FILTER SPRL036JA	2	
25	PCB REMOTE AC MOTOR DT-08	1	
26	DISPLAY CONTROL DT-08	1	
27	WIRE 2 CORE 5 M	1	
28	WIRE ROOM SENSOR	1	
29	TERMINAL 4 PLOC	1	



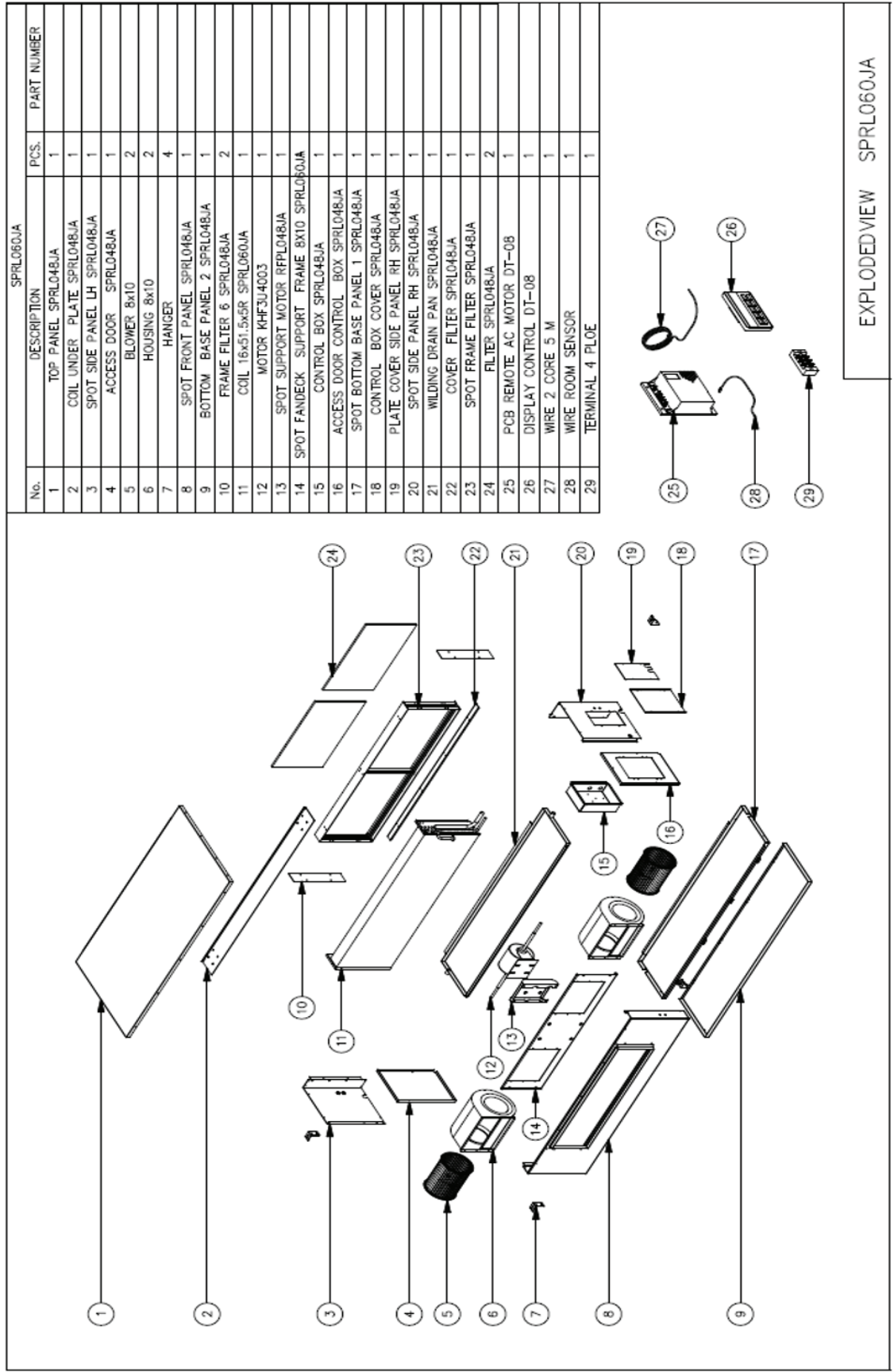
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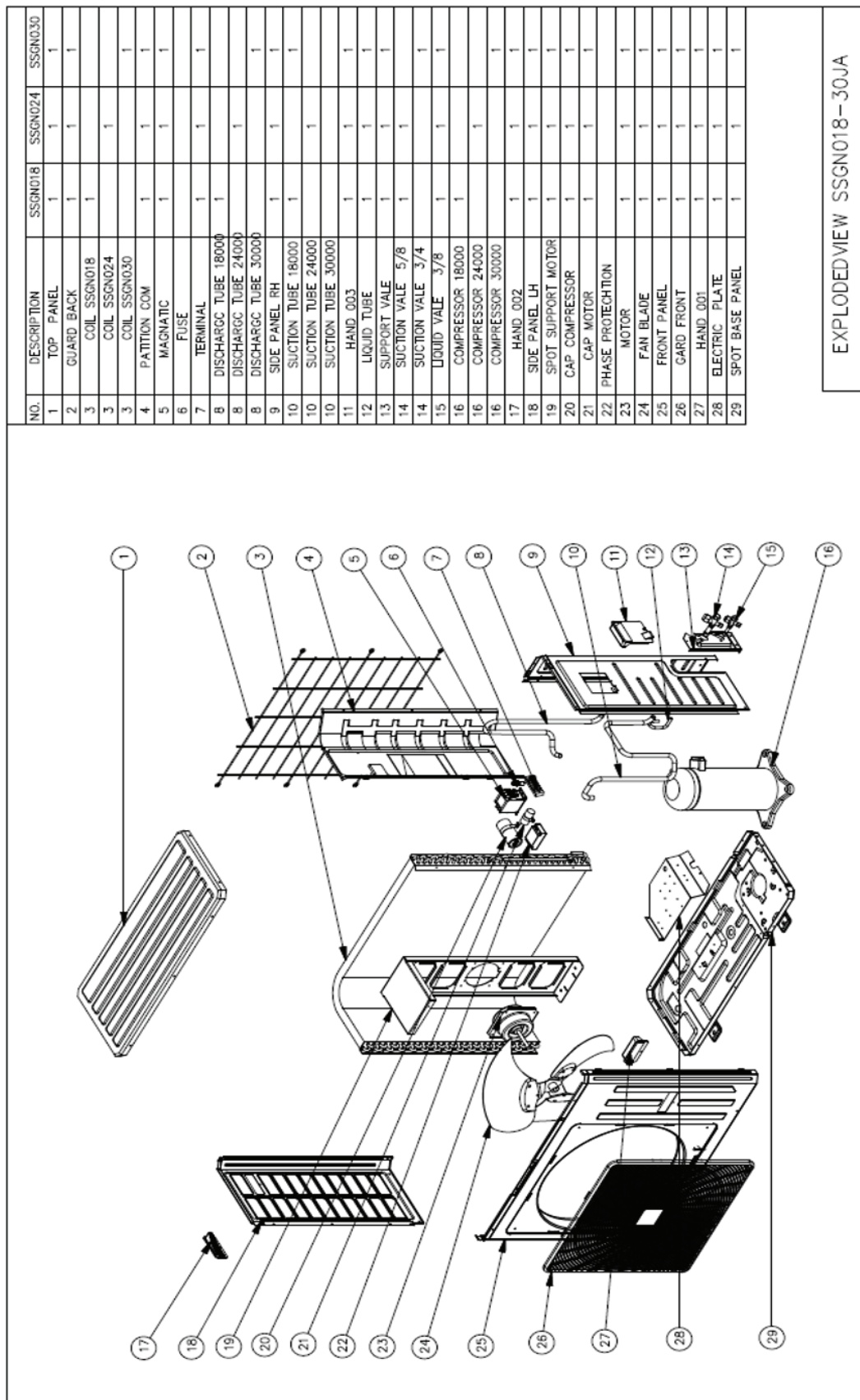
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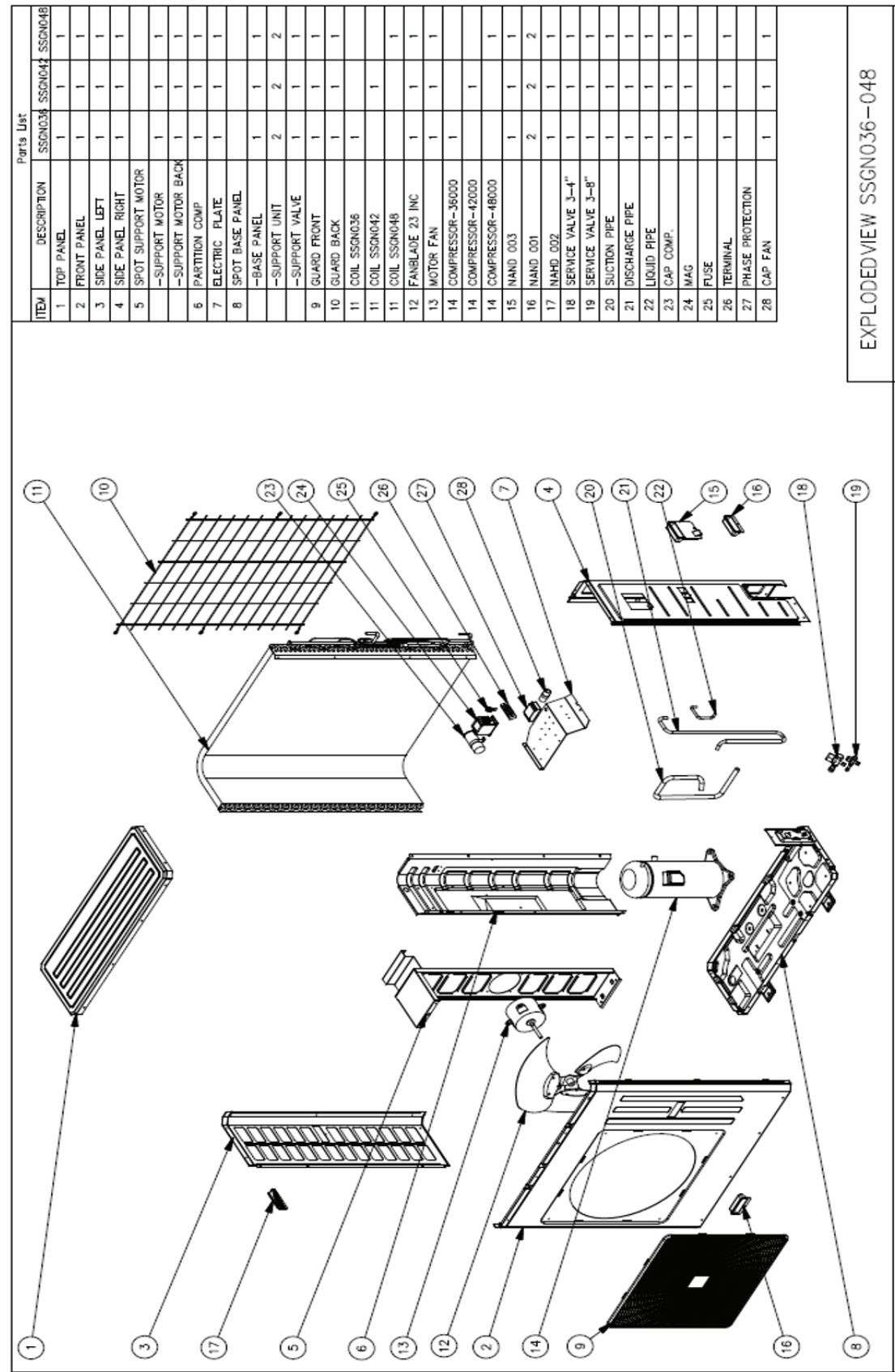
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EXPLODEDVIEW SSGN018-30JA



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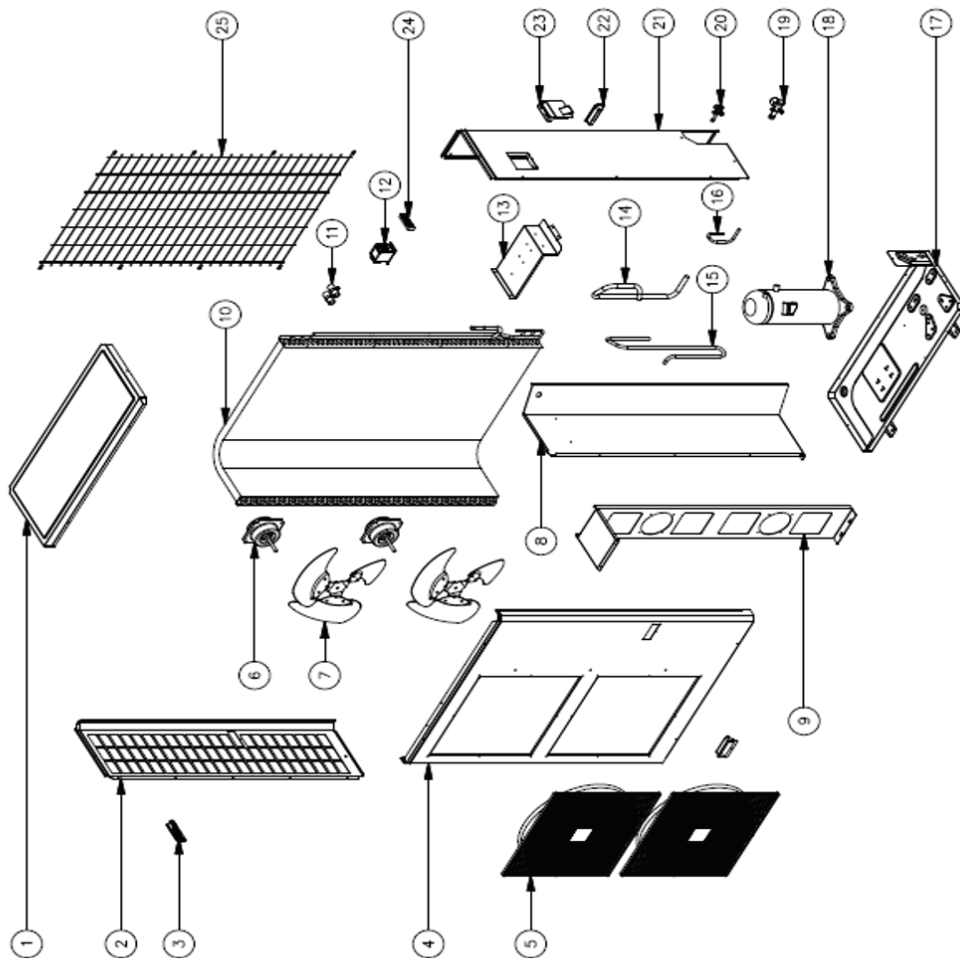


EXPLODEDVIEW SSGN036-048



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PART LIST			
No.	DESCRIPTION	SSGN060	PART NUMBER
1	TOP PANEL CZB-750	1	
2	SIDE PANEL LH CZB-750(54INCH)	1	
3	HAND 002	1	
4	FRONT PANEL CZB-750(54INCH)	1	
5	GUARD VENTURY 20	2	
6	MOTOR 330-418-OL	2	
7	FAN BLADE 20"x3	2	
8	PARTITION COMP CZB-750(54INCH)	1	
9	SUPPORT MOTOR CZB-750(54INCH)	1	
10	COIL 54x42x2R	1	
11	CAPACITOR MOTOR	2	
12	MAGNETIC	1	
13	ELECTRIC PLATE CZB-750(54INCH)	1	
14	SUCKION PIPE	1	
15	DISCHARGE PIPE	1	
16	LIQUID PIPE	1	
17	SPOT BASE PANEL CZB-750	1	
18	COMPRESSOR ZJ44KHF	1	
19	SERVICE VALVE 3/4	1	
20	SERVICE VALVE 3/8	1	
21	SIDE PANEL RH CZB-750(54INCH)	1	
22	HAND 001	2	
23	HAND 003	1	
24	TERMINAL 6POLE	1	
25	GUARD BACK CZB-750(54INCH)	1	



EXPLODEDVIEW SSGN060VA



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GUIDE SPECS

GENERAL

CONDENSING UNIT DESCRIPTION

- Outdoor-mounted, air-cooled, split-system air conditioner. Tooled up base pan unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, suction and legend line service valve, and a control box. Unit will discharge supply air sideways as shown on general arrangement drawings. Unit will be used in a refrigeration circuit to match up to a coil / air handler unit.

QUALITY ASSURANCE

- Units are rated in accordance with the following standard;
SASO 2663:2018:
Air Conditioners – Minimum Energy Performance, Labelling and Testing Requirements for Low Capacity Window Type and Single - Split.
SASO GSO ISO 13253:
Ducted air-conditioners and air-to-air heat pumps - Testing and rating for performance.
- Unit are certified for capacity and efficiency.
- Unit cabinet will be capable of withstanding ASTM B117 1008- hr salt spray test.
- Air-cooled condenser coils will be leak tested at 350 psig and pressure tested at 550 psig.
- Unit constructed in ISO9001 approved facility

DELIVERY, STORAGE, AND HANDLING

- Each Indoor and Outdoor unit will be shipped as separately and is stored and handled per unit manufacturer's recommendations.

PRODUCTS

EQUIPMENT

- Factory assembled, single piece, air-cooled air conditioner unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge R-410A, and special features required prior to field start-up. It is to be coupled with Indoor unit at site using field installed piping accessories.

UNIT CABINET

- Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint. The coating thickness will be 50-60microns

- All condensing units constructed with base rail to fix the unit along the ground.

FANS

- Condenser fan will be direct-drive propeller type, discharging air sideways.
- Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings, Shafts will be corrosion resistant..
- Fan blades will be statically and dynamically balanced.

COMPRESSOR

- Compressor will be hermetically sealed.
- Compressor will be mounted on rubber vibration isolators.

CONDENSER COIL

- Condenser coil will be air cooled.
- Coil will be constructed of aluminum mechanically bonded to copper tubes to have maximum heat transfer.

REFRIGERATION COMPONENTS

- Refrigeration circuit components will include liquid-line shutoff valve with sweat connections, vapor-line shutoff valve with sweat connections, system charge of R-410A refrigerant, and compressor oil.
- Unit refrigerant for field installation. will be equipped with factory

GUIDE SPECIFICATIONS – INDOOR UNIT

GENERAL

SYSTEM DESCRIPTION

Indoor installed, draw through type Blower coil unit with factory fitted air filter. Unconditioned return air is drawn through a cooling heat exchanger via Aluminum mesh type filter. The cooling heat exchanger cools and dehumidifies the air and supplies to the zone to be conditioned.

QUALITY ASSURANCE

- Units are rated in accordance with the following



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standard;

SASO 2663:2018:

Air Conditioners – Minimum Energy Performance, Labelling and Testing Requirements for Low Capacity Window Type and Single - Split.

SASO GSO ISO 13253:

Ducted air-conditioners and air-to-air heat pumps - Testing and rating for performance.

- Unit are certified for capacity and efficiency.
- Unit cabinet will be capable of withstanding ASTM B117 1008- hr salt spray test.
- Air-cooled condenser coils will be leak tested at 350 psig and pressure tested at 550 psig.
- Unit constructed in ISO9001 approved facility

DELIVERY, STORAGE, AND HANDLING

- Each Indoor and Outdoor unit will be shipped as separately and is stored and handled per unit manufacturer's recommendations

EQUIPMENT

- Factory assembled, single piece, draw through type blower coil unit. Contained within the unit enclosure are all factory wiring, piping, controls, filters, insulation, blower, motor ,coil and special features required prior to field start-up.

UNIT CABINET

- Unit cabinet will be constructed of galvanized steel and coated with paint. The thickness of the powder coat paint will be up to 50-60 microns.

MOTOR

- Motor shall be permanent Split Capacitor type single Phase, Class B internally protected. The motor will be with Class B insulation and permanently lubricated type.

COILS

- Coils shall be fabricated of 3/8" [9.52 mm] O.D. seamless copper tubing expanded into aluminum fins. All coils shall be pressure tested to an air pressure test of up to 550 PSIG [2068 kPa]. Units shall be shipped with a nitrogen holding charge. Airflow shall be draw through design providing uniform air distribution across the coil surface.

BLOWER, BEARINGS AND SHAFT

- Blower shall be a double width, double inlet, forward curve, centrifugal type, statically and dynamically balanced, and constructed of galvanized steel.

DRAIN PAN

- The drain pan shall be manufactured of GI with powder coating on both sides to protect against corrosion. The pan shall have internally threaded pipe size drain connections and shall be designed to accept condensate in either horizontal or vertical type applications.

FILTERS

- Duly factory fitted filter made up of aluminum mesh media. Aluminum media fixed in the metallic frame.

CABINET

- Cabinets shall be manufactured of galvanized steel subjected to multi-stage cleaning and finished with Pre paint. Units shall have removable service access panels.

INSULATION

- Cabinets shall be insulated with Irradiated grade EPE, fire retardant, odour free material for thermal, hygiene and acoustic application.
- The thickness of the insulation will be 5mm

FACTORY TESTING

- In addition to the pre-assembly testing mentioned above, each coil shall be leak tested after assembly into the unit. While under pressure, the coil shall be leak tested using an Electronic Leak Detector.

SPECIAL FEATURES

- Brass distributor is used in all the indoor units to distribute refrigerant uniformly in the evaporator circuits for best performance in the evaporator coil.
- 12mm thick aluminum mesh type, permanent washable filters are standard on all units.
- Thermostat is inbuilt with all the units.



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