

WITH MORE THAN 60 YEARS OF EXPERIENCE IN COMPRESSOR TECHNOLOGY AND HIGHLY DEDICATED EMPLOYEES, OUR FOCUS IS ON DEVELOPING AND

APPLYING ADVANCED COMPRESSOR TECHNOLOGIES TO ACHIEVE STANDARD SETTING PERFORMANCE FOR LEADING PRODUCTS AND BUSINESSES AROUND THE WORLD.

SECO^P

COMPRESSORS SUITABLE
FOR SERVICE AND REPAIR

R426A | R401A | R401B | R409A | R409B

SERVICE

COMPRESSORS

REFRIGERANTS R426A, R401A, R401B, R409A, R409B AND THE COMPRESSORS FOR THESE, ARE ESPECIALLY SUITABLE FOR SERVICE AND REPAIR ON REFRIGERATORS, FREEZERS AND SIMILAR PRODUCTS, EVEN IF THESE WERE ORIGINALLY MANUFACTURED FOR USE WITH THE R12 REFRIGERANT.

R426A/R401A/R401B/R409A/R409B • R22 • 220-240 V • 50 Hz & 60 Hz

Refrigerant	Voltage	Application	Com-pressor	Code numbers	EN 12900 (CECOMAF)																			
					Capacity [W]																Power consumption [W]			
					Evaporating temperature [°C]																		-25	5
					-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10	15	-25	5		
R426A / R401A / R401B / R409A / R409B	220V	LBP	TFS3ST	102U2120			32	45	60	65	78	98	120								80			
			TFS4ST	102U2125			42	60	79	89	103	128	160									95		
			TFS5ST	102U2130			62	85	104	115	138	175	215									125		
			FF8.5ST	103U2831			83	109	145	159	190	246	311									171		
		FR6S	103U2630			51	74	105	116	142	187	239	277	298	364	438	473	519	607	130	243			
		FR7.5S	103U2730			74	91	118	130	155	202	260	302	327	404	492	533	590	697	150	280			
		FR7.5S (oc)	103U2732			74	91	118	130	155	202	260	302	327	404	492	533	590	697	150	280			
		FR8.5S	103U2830			81	106	140	155	185	239	302	350	375	458	550	594	652	764	171	326			
		FR8.5S (oc)	103U2832			81	106	140	155	185	239	302	350	375	458	550	594	652	764	171	326			
		FR10S	103U2930			93	117	152	166	198	257	327	379	408	502	606	656	723	851	209	370			
	FR10S (oc)	103U2931			93	117	152	166	198	257	327	379	408	502	606	656	723	851	209	370				
	FR11S	103U2130			128	156	200	218	258	331	419	485	522	640	774	838	922	1086	253	477				
	SC12S	104L2610			97	148	217	244	302	403	520	608	655	806	973	1052	1157	1357	258	483				
	SC15S	104L2880			148	200	273	303	368	485	624	727	785	967	1171	1268	1398	1645	305	582				
	SC18S	104L2180			178	232	311	344	415	545	698	813	876	1080	1307	1416	1560	1838	385	717				
	SC21S	104L2380			178	245	342	382	468	623	806	944	1020	1262	1532	1660	1832	2161	421	742				
	115V	LBP HBP	LBP	TFS4.FST	102U2121			62	89	114	125	155	185	231							123			
			HBP	FF8.5SX	103U1840			90	124	167	184	219	280	350	401	428	526	632	683	750	878	194	390	
			HBP	FF10SX	103U1970			97	130	174	192	230	298	377	436	469	575	695	754	831	978	235	450	
	R22	220V	LBP	SC10C	104L2516	62	105	163	235	325	359	433	561	710	821	883						300		
SC12C				104L2674	77	136	210	303	415	458	550	708	893	1031	1107							380		
SC15CM				104L2848	107	178	268	377	510	561	668	855	1032	1233	1322							460		
SC18CM				104L2120	102	201	313	440	586	640	754	948	1172	1337	1428							495		
SC10/10C				104L4076	124	211	325	470	649	719	865	1121	1420	1643	1765							600		
SC12/12C				104L4077	155	272	421	605	830	916	1099	1417	1786	2061	2213							760		
HBP		SC10D	104L2529								507	654	769	833	1046	1295	1417	1584	1915		545			
		SC10D (oc)	104L2517								507	654	769	833	1046	1295	1417	1584	1915		545			
		SC12D	104L2694								645	845	991	1071	1326	1615	1754	1942	2312		660			
		SC12D (oc)	104L2684								645	845	991	1071	1326	1615	1754	1942	2312		660			
		SC15D	104L2859								786	1035	1214	1312	1624	1975	2143	2371	2818		714			
		SC15D (oc)	104L2839								786	1035	1214	1312	1624	1975	2143	2371	2818		714			

ASHRAE				Dis- place- ment	Recommended compressor cooling at ambient temperature									Voltage and fre- quen- cies	Electrical Equipment						
Capacity [W]		Power consump- tion [W]			32°C			38°C			43°C				LST (RSIR)		HST (CSIR)		HST (CSR)	LST/HST	
Evaporating temperature [°C]					LBP	MBP	HBP	LBP	MBP	HBP	LBP	MBP	HBP		PTC Starting device	Starting relay	Starting relay	Starting capacitor	Starting device	Cord relief	Cover
-23.3	7.2	-23.3	7.2		spades		spades		spades		6.3 mm	6.3 mm	6.3 mm		6.3 mm	6.3 mm					
-23.3	7.2	-23.3	7.2		[cm³]	LBP	MBP	HBP	LBP	MBP	HBP	LBP	MBP		HBP	6.3 mm	6.3 mm	6.3 mm	6.3 mm	6.3 mm	
78		83		3.13	S			S			S			1/2		117U4114			117U0349	117U1023	
107		100		3.86	S			S			S			1/2		117U4109			117U0349	117U1023	
138		130		5.08	S			S			S			3		117U4103			117U0349	117U1023	
192		179		7.95	F ₁			F ₁			F ₁			1/2		117U4118			117U0349	117U1023	
141	506	137	259	6.24	S	S	S	S	S	S	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6000	117U5015		103N1010	103N2010
157	570	160	285	6.93	S	S	S	F ₁	F ₁	F ₁	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6001	117U5015		103N1010	103N2010
157	570	160	285	6.93	S	S	S	O	O	O	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6001	117U5015		103N1010	103N2010
186	635	180	316	7.95	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6015	117U5015		103N1010	103N2010
186	635	180	316	7.95	O	O	O	O	O	O	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6015	117U5015		103N1010	103N2010
201	702	218	380	9.05	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6010	117U5015		103N1010	103N2010
201	702	218	380	9.05	O	O	O	O	O	O	F ₂	F ₂	F ₂	4/5/6	103N0011		117U6010	117U5015		103N1010	103N2010
264	896	262	495	11.15	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	4/6	103N0011		117U6010	117U5015		103N1010	103N2010
295	1125	270	497	12.87	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	4/5/6	103N0011		117U6003	117U5017		103N1004	103N2009
366	1356	320	602	15.28	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	4/5/6			117U6005	117U5017		103N1004	103N2009
416	1515	402	741	17.69	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	4/5/6			117U6011	117U5017		103N1004	103N2009
462	1776	437	768	20.95	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	4/6					117-7010	103N1004	103N2009
149		129		4.63	S			S			S			9		117U4113				117U0349	117U1021
222	738	203	410	7.95	F ₁	F ₁	F ₁	F ₁	F ₁	F ₁	F ₂	F ₂	F ₂	8			117U4060	117U5041		117U0349	117U1023
231	807	245	470	9.05	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	F ₂	8			117U4061	117U5040		117U0349	117U1023
341		325		10.29	F ₂									4			117U6003	117U5017		103N1004	103N2009
456		414		12.87	F ₂									4			117U6005	117U5017		103N1004	103N2009
548		489		15.28	F ₂									7			117U6019	117U5017		103N1004	103N2009
637		533		17.69	F ₂									7					117-7027	103N1004	103N2009
680		650		2×10.29	F ₂									4			117U6003	117U5017		103N1004	103N2009
910		828		2×12.87	F ₂									4			117U6005	117U5017		103N1004	103N2009
	1267		612	10.29		F ₂	F ₂							4			117U6005	117U5017		103N1004	103N2009
	1267		612	10.29		F ₂	F ₂							4			117U6005	117U5017		103N1004	103N2009
	1594		754	12.87		F ₂	F ₂							4			117U6011	117U5017		103N1004	103N2009
	1594		754	12.87		F ₂	F ₂							4			117U6011	117U5017		103N1004	103N2009
	1942		826	15.28		F ₂	F ₂							4					117-7010	103N1004	103N2009
	1942		826	15.28		F ₂	F ₂							4					117-7010	103N1004	103N2009

R426A/R401A/R401B/R409A/R409B • R22 • 220-240 V • 50 Hz & 60 Hz

Com-pressor	Dimensions					
	Height [mm]		Connectors location/I.D. [mm]			
	A	B	Suc-tion	Pro-cess	Dis-charge	Oil cooler
TFS3ST	173	169	6.5	6.5	5.0	
TFS4ST	173	169	6.5	6.5	5.0	
TFS5ST	173	169	6.5	6.5	5.0	
FF8.5ST	196	191	8.2	6.5	6.5	
FR6S	196	191	8.2	6.2	6.2	
FR7.5S	196	191	8.2	6.2	6.2	
FR7.5S (oc)	196	191	8.2	6.2	6.2	6.2
FR8.5S	196	191	8.2	6.2	6.2	
FR8.5S (oc)	196	191	8.2	6.2	6.2	6.2
FR10S	196	191	8.2	6.2	6.2	
FR10S (oc)	196	191	8.2	6.2	6.2	6.2
FR11S	196	191	8.2	6.2	6.2	
SC12S	209	203	8.2	6.2	6.2	
SC15S	209	203	10.2	6.2	6.2	
SC18S	219	213	10.2	6.2	6.2	
SC21S	219	213	10.2	6.2	6.2	
TFS4.FST	173	169	6.5	6.5	5.0	
FF8.5SX	196	191	8.2	6.5	6.5	
FF10SX	196	191	8.2	6.5	6.5	
SC10C	199	193	8.2	6.2	6.2	
SC12C	209	203	8.2	6.2	6.2	
SC15CM	209	203	10.2	6.2	6.2	
SC18CM	219	213	10.2	6.2	6.2	
SC10/10C	249	244	12	6.2	6.2	
SC12/12C	249	244	12	6.2	6.2	
SC10D	199	193	10.2	6.2	8.2	
SC10D (oc)	199	193	10.2	6.2	8.2	8.2
SC12D	209	213	10.2	6.2	8.2	
SC12D (oc)	209	213	10.2	6.2	8.2	8.2
SC15D	209	213	10.2	6.2	8.2	
SC15D (oc)	209	213	10.2	6.2	8.2	8.2

Applications

LBP: Low Back Pressure
 MBP: Medium Back Pressure
 HBP: High Back Pressure

Motor types

RSIR: Resistant Start Induction Run
 RSCR: Resistant Start Capacitor Run
 CSIR: Capacitor Start Induction Run
 CSR: Capacitor Start Run

Starting devices

LST: Low Starting Torque
 LST is used with capillary tube control and pressure equalizing. (Pressure equalizing may exceed 10 minutes). The PTC starting device requires 5 minutes cooling before each start.

HST: High Starting Torque

HST consisting of relay and starting capacitor, is used for expansion valve control or for capillary tube control without pressure equalizing.

Test conditions EN 12900 (CECOMAF)

Application **R426A, R401A/B, R409A/B**
 Condensing temperature 55°C
 Ambient temperature 32°C
 Suction gas temperature 32°C
 No subcooling
 220 V / 50 Hz
 115 V / 60 Hz

Test conditions EN 12900 (CECOMAF)

Application **R22**
 Condensing temperature 45°C
 Ambient temperature 32°C
 Suction gas temperature 32°C
 No subcooling
 220 V / 50 Hz

Test conditions ASHRAE

Application **LBP**
 Condensing temperature 54.4°C
 Ambient temperature 32.2°C
 Suction gas temperature 32.2°C
 Liquid temperature 32.2°C
 220 V / 50 Hz
 115 V / 60 Hz

Test conditions ASHRAE

Application **HBP**
 Condensing temperature 54.4°C
 Ambient temperature 35°C
 Suction gas temperature 35°C
 Liquid temperature 46.1°C
 220 V / 50 Hz
 115 V / 60 Hz

Conversion of capacity

If a stated capacity is required at 32°C liquid temperature, multiply the capacity with one of the following factors:

R22
 From 45°C to 32°C liquid: 1.11

Conversion of units

1 Watt = 0.86 kcal/h
 1 Watt = 3.41 Btu/h

Compressor cooling

S = Static cooling normally sufficient
 O = Oil cooling
 F1 = Fan cooling 1.5 m/s (compressor compartment temp. equal to ambient temperature)
 F2 = Fan cooling 3.0 m/s necessary

Voltages and frequencies

1 = 176-254 V, 50 Hz
 2 = 198-254 V, 60 Hz
 3 = 176-242 V, 50 Hz
 4 = 198-254 V, 50 Hz
 5 = 198-254 V, 60Hz, LBP
 6 = 187-254 V, 50 Hz, LBP
 7 = 198-242 V, 50 Hz
 8 = 103-127 V, 60 Hz
 9 = 98 -135 V, 60 Hz

Hermetic Compressors type TFS, NF, FF, FR, SC and SC Twin R426A/R401A/R401B/R409A/R409B • R22 • 220-240 V • 50 Hz & 60 Hz

Model designation				
Compressor design	Optimization level	Compressor size	Application range	Start characteristics
TF	Blank Standard energy level	Nominal displacement in cm ³	S R426A R401A/R401B R409A/R409B LBP/HBP	Blank => universal (principal rule)
NF			ST R426A R401A/R401B R409A/R409B LBP, tropical	K = LST characteristics (capillary tube)
FR, FF	S Semi-direct intake		C, R22, LBP	X = HST characteristics (expansion valve)
SC			CM, R22, LBP	
SC Twin			D, R22, HBP	

Examples

TF	S	5	ST	
FF		8.5	S	X
SC		12	C	

Optional IP44 equipment for SC compressors

Secop offers special accessories, which provide a better IP protection class for a major part of the SC compressor models. All SC models for 220-240V/50Hz or 208-230V/60Hz with CSIR motor can be IP upgraded.

The equipment consists of one additional part, the so called "back cover", and a special starting capacitor. Both are used instead of the normal starting capacitor.

When using this equipment, the protection class is increased to IP44, i.e. the compressor and its electrical parts are splash-proof.

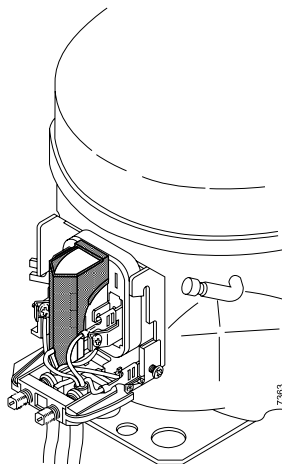
Code number	Description
103N2020	Back cover
117U5117**	IP44 starting capacitor 80µF

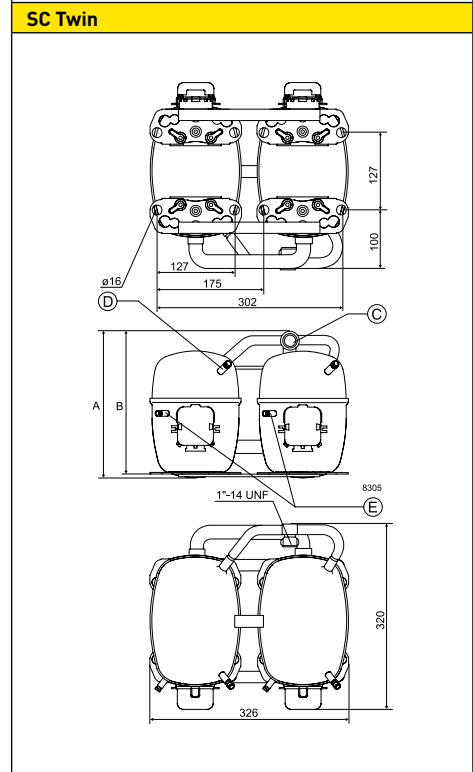
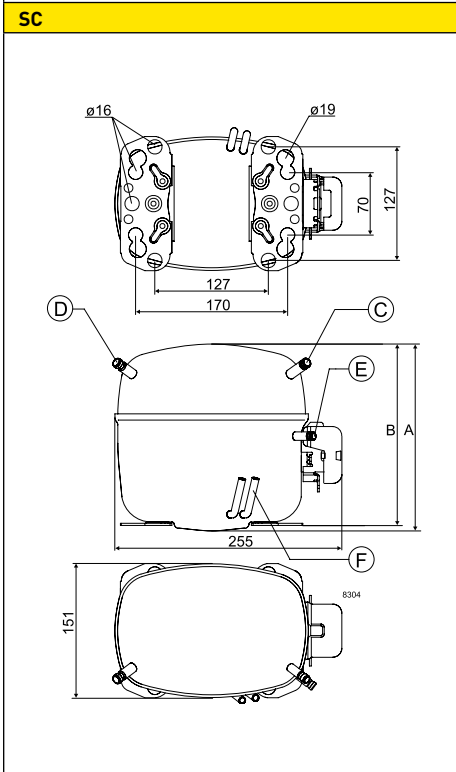
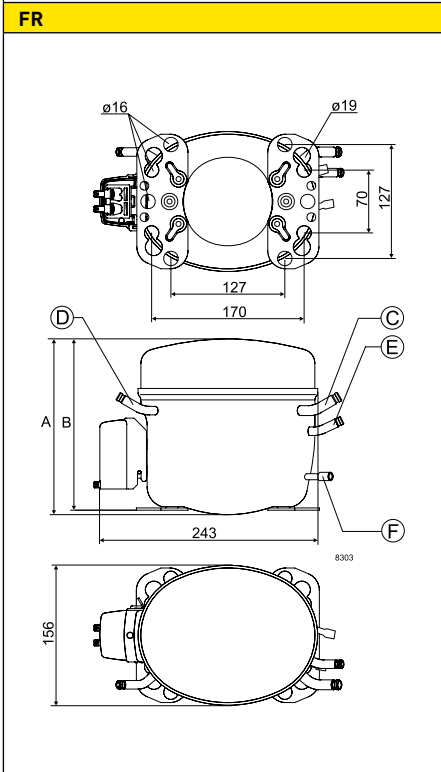
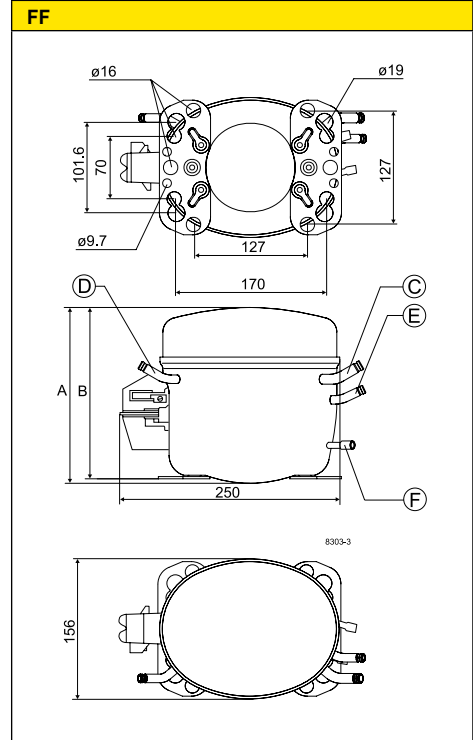
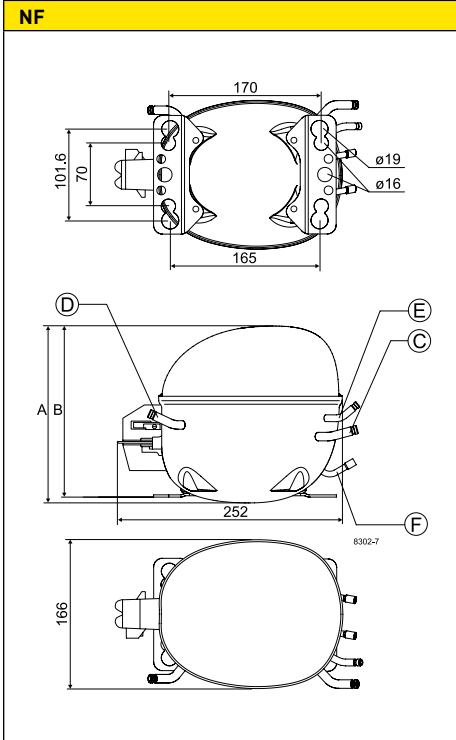
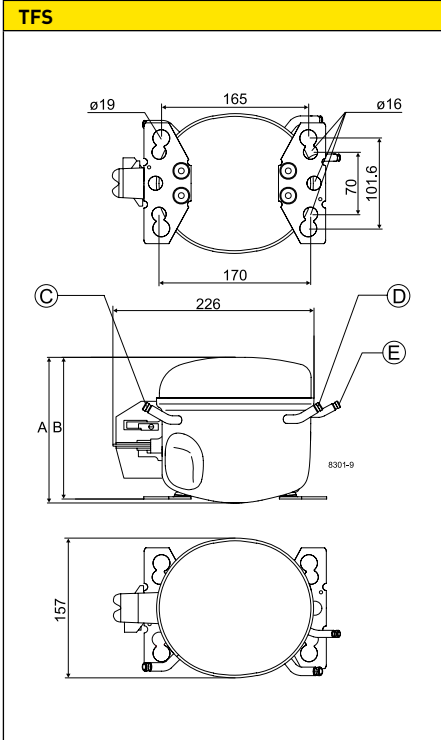
**replaces standard capacitor 117U5017



Protection screen for PTC

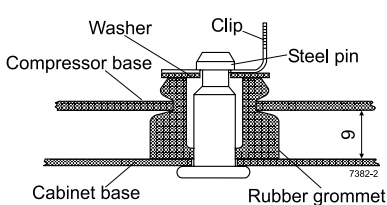
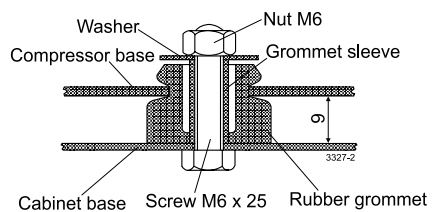
Note: To fulfil the requirements of EN 60355-2-34 the protection screen 103N0476 must be applied to the PTC starting device.





Mounting accessories

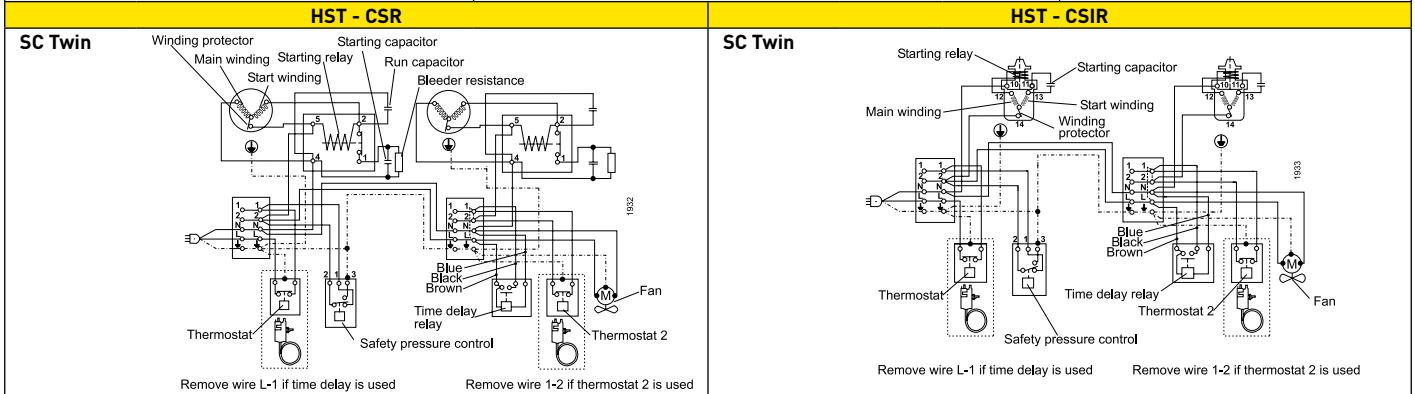
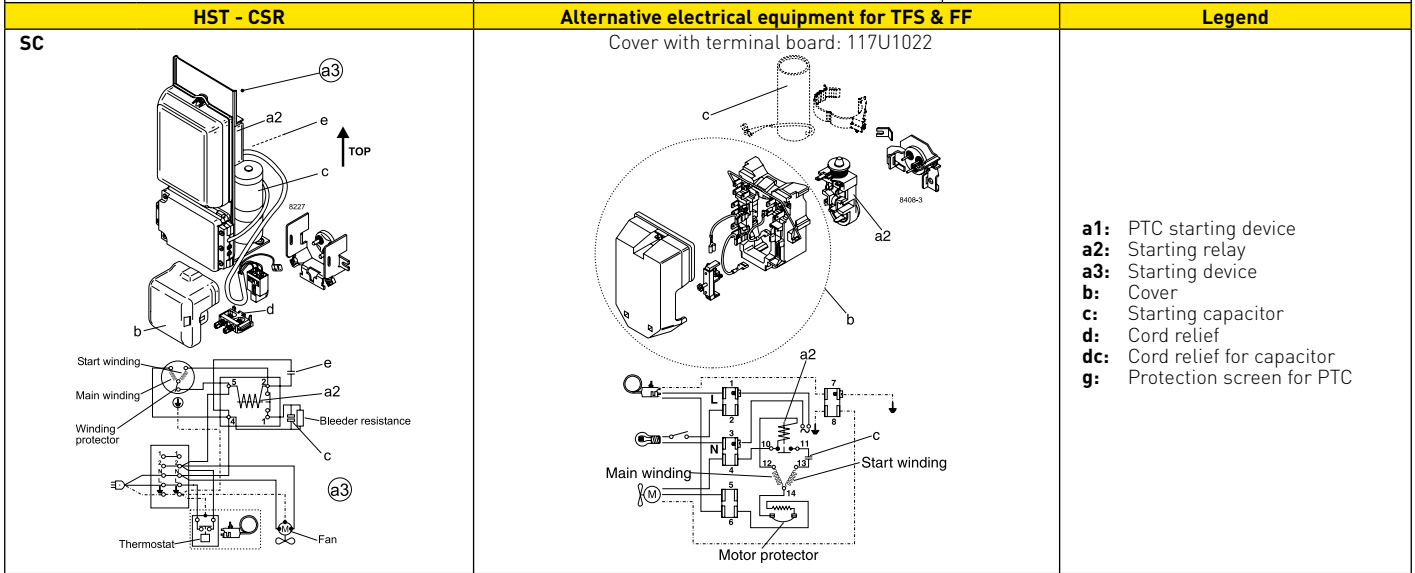
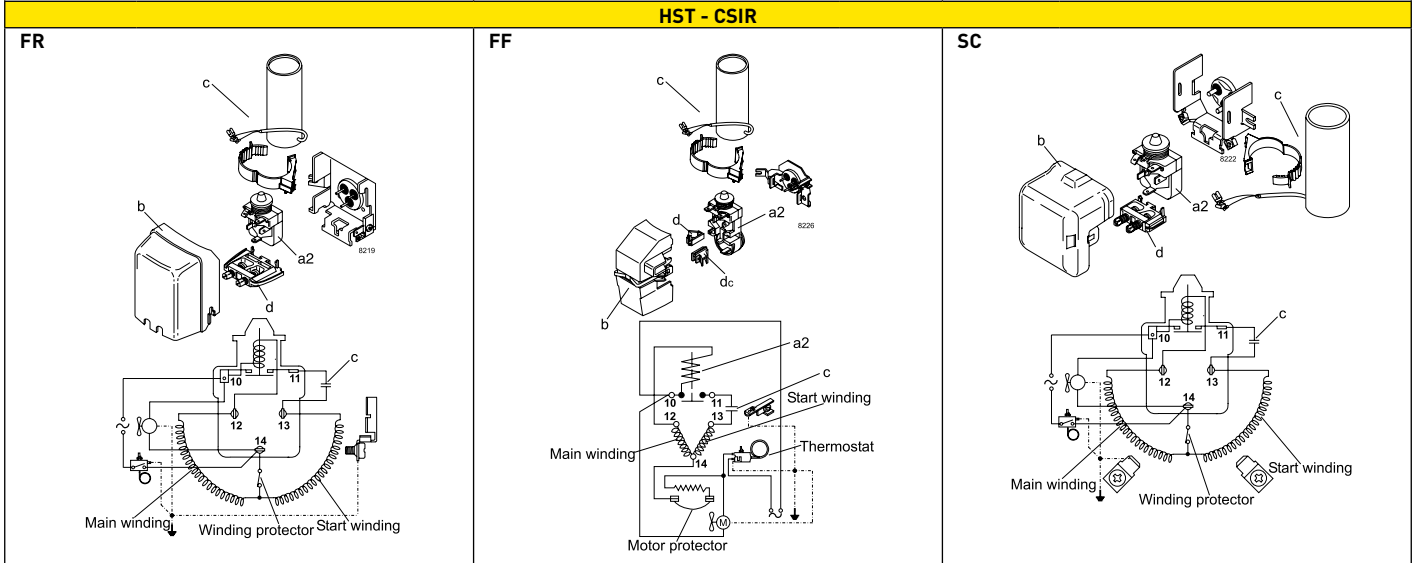
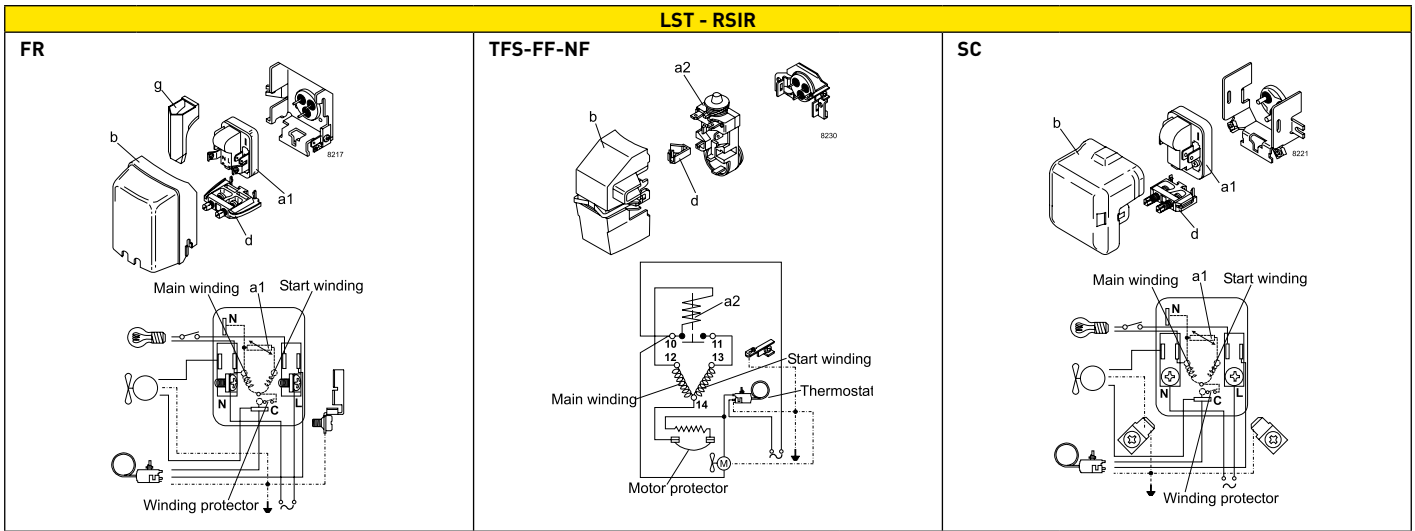
Accessories for SC Twin



Bolt joint for one compressor: 118-1917
in quantities: 118-1918

Snap-on in quantities: 118-1919

- SC10/10, SC12/12 and SC15/15:**
 Service valve for 12 mm tube 118-7350
 Solder connector for 12 mm tube 104B0584
- SC15/15D and SC18/18:**
 Service valve for 16 mm tube 118-7351
 Solder connector for 16 mm tube 118-7405
- SC10/10, SC12/12, SC15/15 and SC18/18:**
 Seal ring for service valve and solder connector 118-3638
 Time-delay relay 117N0001
 Check valve (to be used with time-delay relay) 020-1014



R426A Service compressors for repair of systems originally designed for R12

In all countries part of the Montreal Protocol, R12 is forbidden to be used for repair on old systems, since 2010. For new systems it was phased out earlier.

Secop has developed a service compressor range, released for

- Use of R426A
- Compatible with old R12 systems
- Allowing R22 containing mixtures, like R401A/B, R409A/B, in case R426A is not available

The replacement compressors have a similar refrigeration capacity in the system. For example,

- TFS4AT is replaced by TFS4ST
- FR..A LBP compressors are replaced by FR..S universal types
- Some NF..AK 220 V types are replaced by FR..S
- Some FF.. 115 V types are replaced by NF types



SERVICE COMPRESSORS

Old types obsolete	New service types 220 -240 V, 50 Hz	
TFS3AT	TFS3ST	102U2120
TFS4AT	TFS4ST	102U2125
TL4A	TFS4ST	102U2125
TFS5AT	TFS5ST	102U2130
TL5A	TFS5ST	102U2130
FF7.5AT o/c	FR7.5S o/c	103U2732
FF8.5AT	FR8.5ST	103U2831
FF8.5AT o/c	FR8.5S o/c	103U2832
FR6B	FR6S	103U2630
FR7.5A	FR7.5S	103U2730
FR7.5B o/c	FR7.5S o/c	103U2732
FR7.5B	FR7.5S	103U2730
FR7.5A o/c	FR7.5S o/c	103U2732
FR8.5A	FR8.5S	103U2830
FR8.5A o/c	FR8.5S o/c	103U2832
FR8.5B	FR8.5S	103U2830
FR8.5B o/c	FR8.5S o/c	103U2832
FR10A	FR10S	103U2930
FR10A o/c	FR10S o/c	103U2931
FR10B	FR10S	103U2930
FR10B o/c	FR10S o/c	103U2931
FR11A o/c	FR11S	103U2130
FR11B	FR11S	103U2130
NF7AK	FR8.5S	103U2830
NF9AK	FR10S	103U2930
NF10AK	FR11S	103U2130
SC10B	FR10S	103U2930
SC12B	SC12S	104L2610
SC15B	SC15S	104L2880
SC18B	SC18S	104L2180
SC21B	SC21S	104L2380

Old types obsolete	New service types 115 V, 60 Hz	
TFS4.5AT	TFS4.5ST	102U2121
TFS5A	TFS4.5ST	102U2121
TFS4AT	TFS4.5ST	102U2121
FR7.5B	FR7.5S	103U1740
FF8.5BX	FF8.5SX	103U1840
FF8.5BK o/c	NF6SK o/c	105F1670
FF10BX	FF10SX	103U1970
FF10BX o/c	No o/c available	FF10SX
NF6AK o/c	NF6SK o/c	105F1670
NF6AK	NF6SK o/c	105F1670
NF7AK	NF7SK	105F1770
NF9.5AK	NF9.5SK	105F1970
NF9AK	NF9.5SK	105F1970
SC10B	FF10SX	103U1970
SC12B	SC12S	104L1634
SC12B	SC12S	104L1634
SC15A	No direct replacement	

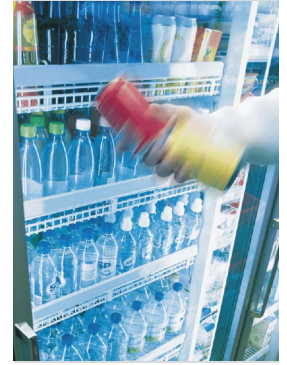
The service compressors are not intended for use with R12 and are not allowed to be sold for service with refrigerant R12.

SERVICE COMPRESSORS

Refrigerants R426A, R401A, R401B, R409A and R409B and the compressors for these, are especially suitable for service and repair on refrigerators, freezers and similar products, even if these were originally manufactured for use with the R12 refrigerant.

Our service compressors will perfectly fit various applications including:

Refrigerators and freezers | Laboratory and medical equipment | Clip-on and condensing units | Compressed air dryers | Glass door merchandisers | Bakery refrigeration equipment | Low temperature display cabinets | Vending machines | Ice making machines | Slush and frozen beverage makers | Bottle coolers



OUR JOURNEY SO FAR

