



INVOTECH
DISTRIBUTION CENTER TEXAS

INNOVATIVE
HVAC/R SOLUTIONS

www.invotechtexas.com

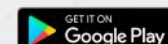


PRODUCT CATALOG

RE-INVENTING THE FUTURE OF THE HVAC/R INDUSTRY



DOWNLOAD THE
APP AND REGISTER



INVOTECH - MORE FOR LESS



COPELAND



SANYO

RANGE AND APPLICATIONS

Air Conditioning	√	√	Limited	Limited	√
Medium Temperature	√	√	√	√	N/A
Low Temperature	√	√	√	√	N/A
Inverter	√	√	√	√	N/A
Refrigerants A/C	R410A, R407C, R134A, R22, R454B, R32	R410A, R407C, R134A, R22, R454B, R32	R410A, R407C, R134A, R22, R454B, R32	R410A, R407C, R134A, R22, R454B, R32	R22, R410
Medium and Low-Temperature Refrigerants	R404A, R507A, R134A, R448A, R449A, R407F, R22, R455A, R454C, R290	R404A, R507A, R134A, R448A, R449A, R407F, R22, R455A, R454C, R290	R404A, R507A, R134A, R448A, R449A, R407F, R22, R455A, R454C, R290	R404A, R507A, R134A, R448A, R449A, R407F, R22, R455A, R454C, R290	R22, R410
Specifications	Tandem Ready, Rotalock, Sight Glass	On Demand	On Demand	On Demand	On Demand
Efficiency	COP 15%	COP 15%	COP 15%	COP 15%	Not published
Range	1- 60 HP	1 - 100 HP	20 - 100 HP	1 - 100 HP	1 - 12 HP
Accessories (Rotalock valves, DTC, Heat Exchangers, Resistance and supports)	Factory Originals Included with the Compressor	Sold separately at the factory	Sold separately at the factory	Sold separately at the factory	Not included

DISTRIBUTION CAPACITY

Distribution Center	USA - Mexico	USA - Mexico	USA - Mexico	USA - Mexico	China
Prepaid Freight	Terms and Conditions	Terms and Conditions	\$1000 USD, Terms and Conditions by Region	Not offered	Not offered
Fill rate	92%	Scheduled and Mandatory Purchase	Scheduled and Mandatory Purchase	Scheduled and Mandatory Purchase	Container
Shipping within 24-48 hours	Offered	Not offered	Not offered	Not offered	Not offered
Presentation	Individually packaged with installation manual	Packaged without installation manual	On pallets without boxes, without installation manual	Unpackaged, without installation manual	Unpackaged, no installation manual
Certification	Quality Management System ISO 9001: 2015	N/A	Management System ISO 9001:2015	N/A	N/A

POST-SALES SERVICE

Warranty	48 months OEM, 12 months replacement	36 Months OEM, 12 Months replacement, Subject to inspection	12 months limited	12 months limited	Not offered
Technician Certification	Free; endorsed by the Secretariat of Public Education	Free without government accreditation	Free without government accreditation	Free without government accreditation	N/A
Warranty Program	RAG	Not offered	Not offered	Not offered	Not offered
Competitiveness	Competitive	Premium	Medium Premium	Medium Premium	Minimal
Mobile Application	APP Invotech	APP Copeland	APP Danfoss	N/A	N/A
Training Program	Training Center	Training Center	Training Center	Not offered	Not offered
Promotions	Monthly and quarterly	N/A	N/A	N/A	N/A

INVOTECH SCROLL

A High-Tech Company

Invotech was founded by a group of engineers who formerly worked for the world's largest manufacturer of scroll compressors. We are a team of passionate and highly qualified professionals with more than 15 years of experience in this industry and our vast product offering is available throughout 30 countries and regions.

Invotech USA provides specialized scroll compressors and related technical consulting services for heat pump water heaters, refrigeration and air conditioning, chillers and other applications. We are willing to provide our customers with jointly developed or Turn-Key solutions to meet their needs.

Our vision: To become a first-class global solution provider by offering innovative products for the climate and energy industries.



Can Ship
Throughout the
USA



Combined Inventory
of up to 19,000
Compressors



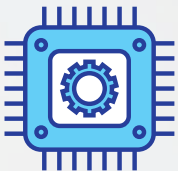
Inventory of
Over 200
Different SKU's



Technical Training
Programs



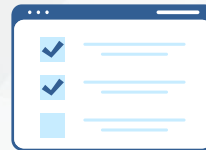
Single-Phase
Compressor
Start Kits



Engineering and
Applications
Division



Multiple
Distribution
Points



Real-Time
Inventory
Confirmation



Shipping
in 24-48 in
Hours



Compressors
are Individually
Packaged

INVOTECH WARRANTY

Invotech Distribution Center Texas offers a 12-month warranty on all compressors against manufacturing defects.



COMPRESSOR REGISTRATION



Fill out the form before removing the compressor



Compare data with Installation Data Sheet

The warranty claim is divided into:



Teardown

Warranty Claim Analysis

VISIT OUR WEBSITE

www.invotechtexas.com



Features



Availability



Warranty Registration



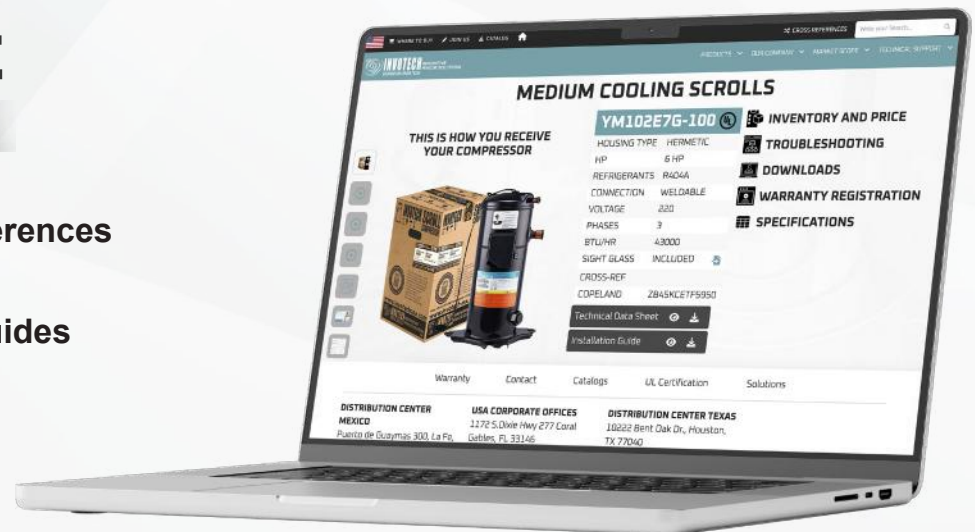
Cross-References



Start-Up Guides



Promotions



DC INVERTER SCROLL COMPRESSORS

FEATURES

- Energy saving, environmental protection, energy efficiency.
- Variable pressure ratio HVE exhaust valve is more suitable for wide evaporation and condensation temperatures.
- Perfect combination of EVI and inverter technology.
- Flexible design ensures the compressor is more suitable for bad operating conditions.

MEDIUM TEMPERATURE SINGLE PHASE

MODEL	VOLTAGE	PHASE	REF	DISPLACEMENT cc/Rev	Capacity (W)	Power (W)	Cop (W/W)	Oil type
YIM38E2G-100	220V-50/60HZ	1	R-404A	38	6180	2575	2.40	POE 32
YIM50E2G-100	220V-50/60HZ	1	R-404A	50	7883	4019	1.96	POE 32
YIM60E2G-100	220V-50/60HZ	1	R-404A	60	9459	4777	1.98	POE 32

MID TEMP [Te = -4.7°C | Tc = 45°C | Tret = 18°C | Sc = 0°C]
 MEDIUM X [Te = 20°F | Tc = 120°F | Tret = 65°F | Sc = 0°F]
 Cooling Capacity 1200-7200RPM, rated speed: 4500RPM



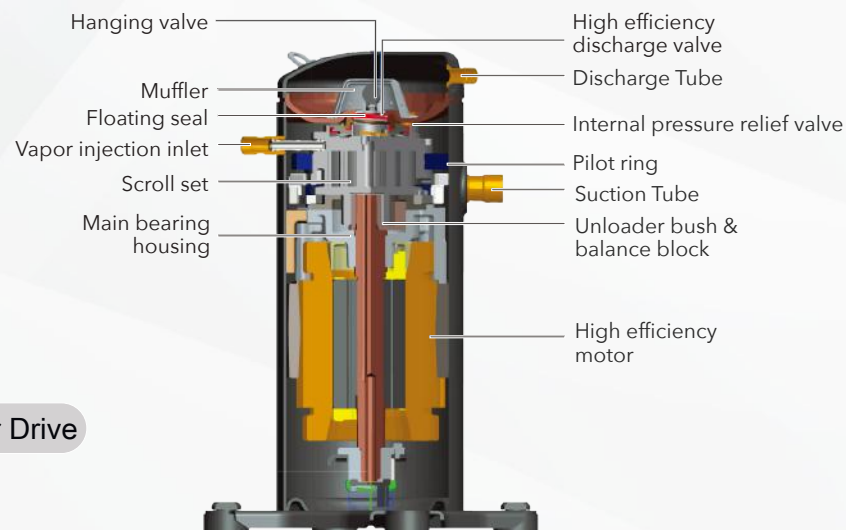
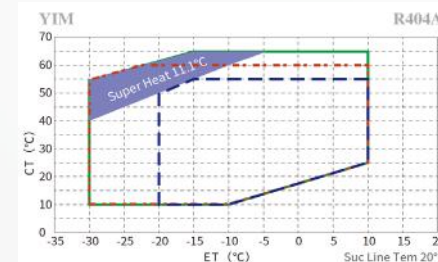
Reactor for Single-Tube
BOOST-PFC



Communication
Interface



Inverter Drive

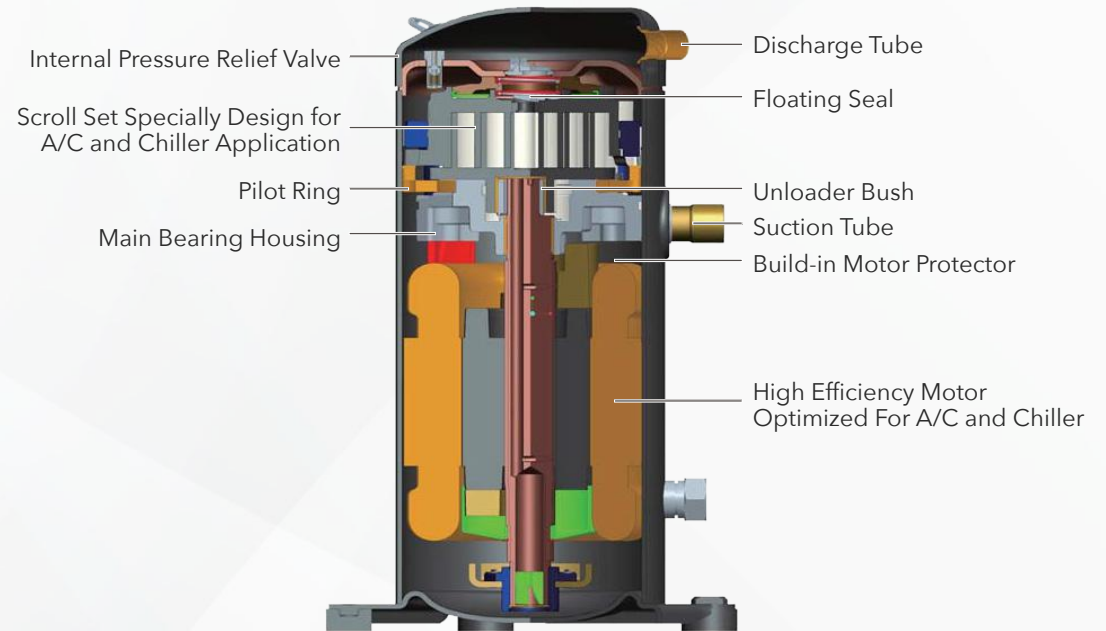


YH SERIES

SCROLL COMPRESSORS

Hermetic Scroll Compressors With Dual-Compliance for A/C and Chiller Applications.

- Precise Product-Definition Based On Customer's Needs
- Built-in Radius and Axial Compliance Design, with Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch the Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design



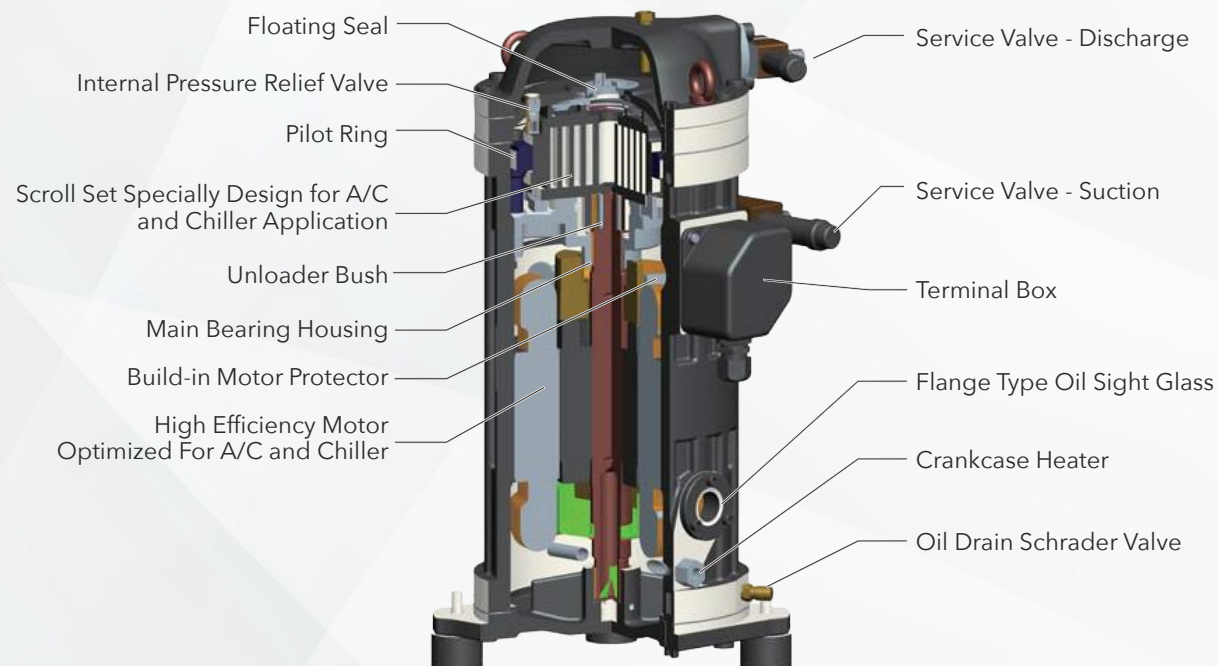
FEATURES

- Optimized Design Compression Ratio
- Optimized Floating Seal Design for Better COP
- Multiple Internal Protections
 - High Pressure Protection
 - Overload Protection

YSH SERIES SCROLL COMPRESSORS

Semi-Hermetic Scroll Compressors With Dual-Compliance

- Precise Product-Definition Based On Customer's Needs
- Built-in Radius and Axial Compliance Design, with Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch the Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design
- Repairable



R-410A A/C CHILLER

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference				
								Copeland	Panasonic	Danfoss	LG	Bitzer
YH95C3-100	3	39238	220	1	30	NO	\$1,472.45	ZP39K5E-PFV	C-SBP120HI6A	HRH049UI	ABA039KAA	
YH95C7-100	3	39546	220	3	31	NO	\$1,382.71	ZP39K5E-TF5	C-SBP120H36A	HRH040U2		
YH95C1-100	3	39546	460	3	31	NO	\$1,574.44	ZP39K5E-TFD	C-SBP120H39B	HRH040U4		
YH119C3-100	4	48724	220	1	31	NO	\$1,583.59	ZP49K5E-PFV	C-SBP140HI6A	HRH049UI	ABA051KAA	
YH119C7-210	4	49536	220	3	33	YES	\$1,461.14	ZP49K5E-TF5	C-SBP140H36A	HRH049U2	ABA051RAA	
YH119C1-100	4	49536	460	3	33	NO	\$1,461.14	ZP49K5E-TFD	C-SBP140H39B	HRH049U4	ABA051WAA	
YH128C3-210	4.5	52409	220	1	35	YES	\$1,597.50	ZP54K5E-PFV	C-SBP160H16A	HRH054UI	ABA054KAA	
YH128C7-210	4.5	53282	220	3	33	YES	\$1,428.74	ZP54K5E-TF5	C-SBP160H36A	HRH054U2		
YH128C1-210	4.5	53282	460	3	33	YES	\$1,428.74	ZP154K5E-TFD	C-SBP160H39B	HRH054U4	ABA054WAA	
YH150C3-210	5	61417	220	1	35	YES	\$1,611.36	ZP61K5E-PFV				
YH150C7-210	5	62440	220	3	33	YES	\$1,522.21	ZP61KCE-TF5	C-SBP170H36A	HLH061T2	ABA061RAA	
YH150C1-210	5	62440	460	3	33	YES	\$1,522.21	ZP61KCE-TFD	C-SBN373H9F	HLH061T4		
YH175C7-210	6	72014	220	3	35	YES	\$2,042.02	ZP72KCE-TF5	C-SBP205H36A	HLJ072T2		
YH175C1-210	6	72014	460	3	35	YES	\$2,042.02	ZP72KCE-TFD	C-SBP205H39B	HLJ072T4		
YH183C7-210	6.5	76177	220	3	35	YES	\$2,066.37	ZP76KCE-TF5	C-SBP235H36A	HLJ075T2		
YH183C1-210	6.5	76177	460	3	35	YES	\$2,066.37	ZP76KCE-TFD	C-SBP235H39B	HLJ075T4	ARA073WAA	
YH200C7-210	7	80273	220	3	38	YES	\$2,346.55					
YH200C1-210	7	80273	460	3	38	YES	\$2,346.55					
YH230C7-210	8	95742	220	3	53	YES	\$2,823.20	ZP90KCE-TF5		HCJ090T2		
YH230C1-210	8	95742	460	3	53	YES	\$2,823.20	ZP90KCE-TFD		HCJ090T4		
YH266C7-210	9	110727	220	3	53	YES	\$2,903.79	ZP103KCE-TF5		HCJ105T2		
YH266C1-210	9	110727	460	3	53	YES	\$2,903.79	ZP103KCE-TFD		HCJ105T4		
YH292C7-210	10	121550	220	3	54	YES	\$2,976.24	ZP122KCE-TF5		HCJ120T2		
YH292C1-210	10	121550	460	3	54	YES	\$2,976.24	ZP122KCE-TFD		HCJ120T4	AG120WAA	GSD60120VA_4
YH325C7-100	11	135287	230	3	54	NO	\$3,275.35	ZP137KCE-TF5				
YH325C1-100	11	135287	460	3	54	NO	\$3,275.35	ZP137KCE-TFD				GSD60137VA_4
YH355C7-210	12	144861	230	3	54	YES	\$3,370.11	ZP137KCE-TF5		SH140-3		
YH355C1-210	12	144861	460	3	54	YES	\$3,370.11	ZP144KFE-TFD		SH140-4		
YSH400C1G-100	13	161731	460	3	90	NO	\$4,154.11	ZP154KCE-TFD		SH161-4	AG160WAA	GSD60154VA_4
YH450C1-105	15	184429	460	3	59	NO	\$4,547.23	ZP182KCE-TFD		SH184-4	AG184WAA	GSD60182VA_4
YSH450C1G-100	15	182203	460	3	90	NO	\$5,826.54					
YH610C1G-100	20	259829	460	3	104	NO	\$8,103.93					
YH720C1G-100	25	283276	460	3	104	NO	\$9,530.67					
YH880C1G-100	30	353756	460	3	108	NO	\$10,159.89					

R-407C A/C CHILLER

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference				
								Copeland	Panasonic	Danfoss	LG	Bitzer
YH69T3-100	2	26737	230	1	31	NO	\$1,454.27	ZR28K3E-PFV				
YH69T7-100	2	27182	230	3	31	NO	\$1,396.66	ZR28K3E-TF5				
YH69T1-100	2	27182	460	3	31	NO	\$1,396.66	ZR28K3E-TFD				
YH89T3-100	3	35549	230	1	31	NO	\$1,587.60	ZR36K3E-PFV		HRP034T1		
YH89T7-100	3	35549	230	3	31	NO	\$1,513.73	ZR36K3E-TF5	C-SBN263H6C			
YH89T1-100	3	35549	460	3	31	NO	\$1,513.73	ZR36K3E-TFD		HRP034T4		
YH104T3-100	3.5	41681	230	1	31	NO	\$1,582.81	ZR42K3E-PFV	C-SBS120H16A	HRP042T1		
YH104T7-100	3.5	42376	230	3	31	NO	\$1,513.73	ZR42K3E-TF5	C-SBN263H6B			
YH104T1-100	3.5	42376	460	3	31	NO	\$1,513.73	ZR42K3E-TFD	C-SBN263H8A	HRP042T4		
YH119T3-100	4	46759	230	1	35	NO	\$1,582.81	ZR48K3E-PFV				
YH119T7-100	4	47538	230	3	33	NO	\$1,513.73	ZR48K3E-TF5				
YH119T1-100	4	47538	460	3	33	NO	\$1,513.73	ZR48K3E-TFD		HRP047T4		
YH128T3-100	4.3	50321	230	1	35	NO	\$1,582.81	ZR52K3E-PFV	C-SBS145H16A	HRP051T1		
YH128T7-100	4.3	51159	230	3	33	NO	\$1,513.73	ZR52K3E-TF5	C-SBN303H6A	HRP051T2		
YH128T1-100	4.3	51159	460	3	33	NO	\$1,513.73	ZR52K3E-TFD	C-SBN303H8A	HRP051T4		
YH133T3-100	4.5	52286	230	1	35	NO	\$1,582.81	ZR54K3E-PFV				
YH133T7-100	4.5	53127	230	3	35	NO	\$1,513.73	ZR54K3E-TF5				
YH133T1-100	4.5	53127	460	3	35	NO	\$1,513.73	ZR54K3E-TFD				
YH140T3-100	4.6	55029	230	1	35	NO	\$1,582.81	ZR57K3E-PFV	C-SBS165H16A			
YH140T7-100	4.6	55946	230	3	33	NO	\$1,513.73	ZR57K3E-TF5	C-SBN353H6B			
YH140T1-100	4.6	55946	460	3	33	NO	\$1,513.73	ZR57K3E-TFD	C-SBN353H8A			
YH150T3-100	5	58960	230	1	35	NO	\$1,720.50	ZR61KCE-PFV		HRP060T1		
YH150T7-100	5	59943	230	3	33	NO	\$1,535.88	ZR61KCE-TF5	C-SBN373H6A	HRP060T2		
YH150T1-100	5	59943	460	3	33	NO	\$1,535.88	ZR61KCE-TFD	C-SBN373H8A	HRP060T4		
YH175T7-100	6	68726	230	3	35	NO	\$1,822.06	ZR72KCE-TF5	C-SBN453H6A	HLP072T2		
YH175T1-100	6	68726	460	3	35	NO	\$1,822.06	ZR72KCE-TFD	C-SBN453H8A	HLP072T4		
YH200T7-100	7	79044	230	3	38	NO	\$2,164.87	ZR81KCE-TF5		HLP081T2		
YH200T1-100	7	79044	460	3	38	NO	\$2,164.87	ZR81KCE-TFD	C-SBS235H38A	HLP081T4		
YH230T7-100	8	92328	230	3	53	NO	\$2,633.31	ZR94KCE-TF5		SZ100-3		
YH230T1-100	8	92328	460	3	53	NO	\$2,633.31	ZR94KCE-TFD	C-SCN583H8H	SZ100-4		
YH266T7-100	9	106273	230	3	53	NO	\$2,698.63	ZR108KCE-TF5		SZ110-3		ESH725Y-20S
YH266T1-100	9	106273	460	3	53	NO	\$2,698.63	ZR108KCE-TFD	C-SCN673H8H	SZ110-4		ESH725Y-40S
YH307T7-100	10	122674	230	3	54	NO	\$2,749.41	ZR125KCE-TF5		SZ120-3		ESH730Y-20S
YH307TA-100	10	122674	460	3	54	NO	\$2,749.41	ZR125KCE-TFD	C-SCN753H8H	SZ120-4		ESH730Y-40S
YH355T7-100	12	141864	230	3	54	NO	\$2,850.93	ZR144KCE-TF5		SZ148-3		ESH736Y-20S
YH355T1-100	12	141864	460	3	54	NO	\$2,850.93	ZR144KCE-TFD		SZ148-4		ESH736-40S
YSH400T1G-100	13	155261	460	3	90	NO	\$4,154.11	ZR160KCE-TFD		SZ161-4		
YSH450T1G-100	15	171377	460	3	90	NO	\$5,826.54	ZR190KCE-TFD		SZ185-4		ESH743Y-40S

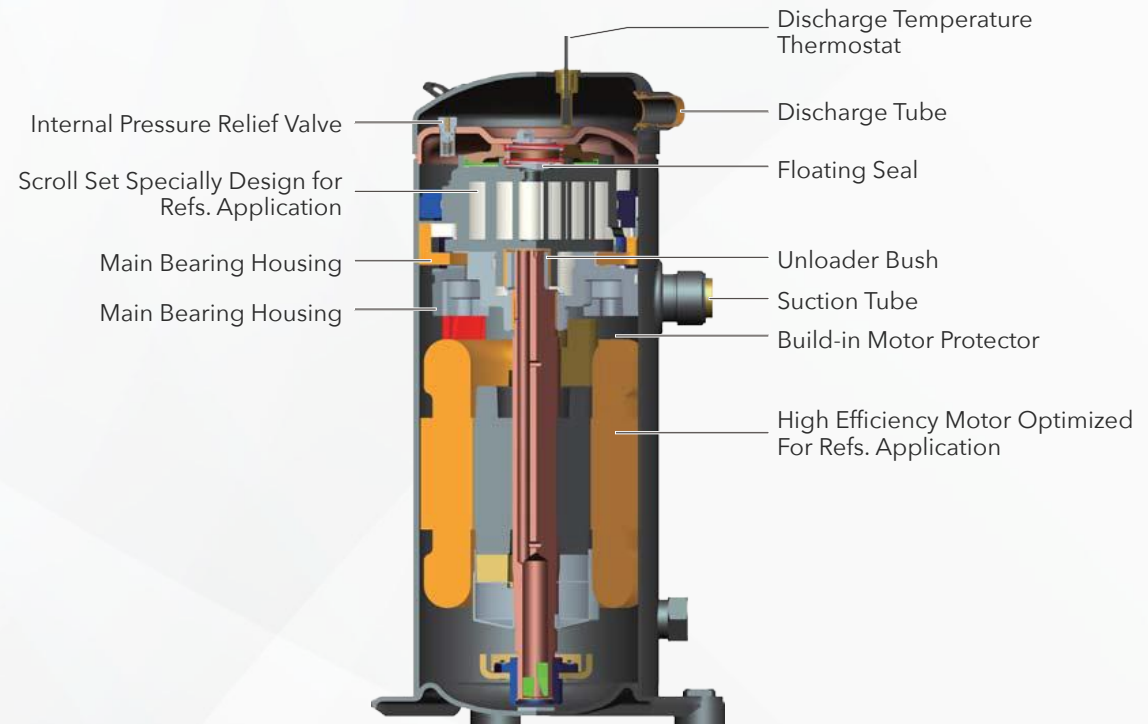
R-22 A/C CHILLER

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference					
								Copeland	Panasonic	Danfoss	LG	Bitzer	Tecumseh
YH69A3-100	2	27842	230	1	31	NO	\$1,351.69	ZR28K3-PFV					
YH69A7-100	2	27842	230	3	31	NO	\$1,404.12	ZR28K3-TF5					
YH69A1-100	2	27842	460	3	31	NO	\$1,404.12	ZR28K3-TFD					
YH89A3-100	3	37048	230	1	31	NO	\$1,378.59	ZR36K3-PFV		HRM034UI	SQA038KAA		VSC5534ENA
YH89A7-100	3	36411	230	3	31	NO	\$1,244.12	ZR36K3-TF5	C-SB263H6C	HRM034U2	SQ036RAA		
YH89A1-100	3	36411	460	3	31	NO	\$1,244.12	ZR36K3-TFD	C-SB263H8B	HRM034T4			
YH104A3-100	3.5	43401	230	1	31	NO	\$1,481.49	ZR42K3-PFV	C-SBR120H16P	HRM042UI	SQA042KAA		VSC5542ENA
YH104A7-100	3.5	43401	230	3	31	NO	\$1,277.27	ZR42K3-TF5	C-SB263H6B	HRM042U2	SQ042RAA		
YH104A1-100	3.5	43401	460	3	31	NO	\$1,277.27	ZR42K3-TFD	C-SB263H8A	HRM042T4			
YH119A3-100	4	48724	230	1	35	NO	\$1,513.10	ZR48K3-PFV		HRM047UI			VSC5547ENA
YH119A7-100	4	48724	230	3	33	NO	\$1,318.03	ZR48K3-TF5		HRM047U2	SR049RAA		
YH119A1-100	4	48724	460	3	33	NO	\$1,318.03	ZR48K3-TFD		HRM047T4	SR049SAA		
YH128A3-100	4.3	52409	230	1	35	NO	\$1,513.10	ZR52K3-PFV	C-SBR145H16P	HRM051UI			
YH128A7-100	4.3	52409	230	3	33	NO	\$1,344.93	ZR52K3-TF5	C-SB303H6A	HRM051U2	SR053RAA		
YH128A1-100	4.3	52409	460	3	33	NO	\$1,344.93	ZR52K3-TFD	C-SB303H8A	HRM051T4			
YH133A3-100	4.5	54456	230	1	35	NO	\$1,513.10	ZR54K3-PFV		HRM054UI	SRA053KAA		VSC5554ENA
YH133A7-100	4.5	54456	230	3	33	NO	\$1,344.93	ZR54K3-TF5		HRM054U2			SFA5554EXT
YH133A1-100	4.5	54456	460	3	33	NO	\$1,344.93	ZR54K3-TFD		HRM054T4			SFA5554EXG
YH140A3-100	4.7	57322	230	1	35	NO	\$1,512.47	ZR57K3-PFV	C-SBR165H16P	HRM058UI			
YH140A7-100	4.7	57322	230	3	33	NO	\$1,344.93	ZR57K3-TF5	C-SB353H6B	HRM058U2	SR057RAA		SFA5558EXT
YH140A1-100	4.7	57322	460	3	33	NO	\$1,344.93	ZR57K3-TFD	C-SB353H8A	HRM058U4			SFA5558EXG
YH150A3-100	5	61417	230	1	35	NO	\$1,533.25	ZR61KC-PFV	C-SBR180H16N	HRM060UI			VSC5560ENA
YH150A7-100	5	61417	230	3	33	NO	\$1,365.16	ZR61KC-TF5	C-SB373H6A	HRM060U2	SR061RBA		SFA5560EXT
YH150A1-100	5	61417	460	3	33	NO	\$1,365.16	ZR61KC-TFD	C-SB373H8A	HRM060T4	SR061SAA		SFA5560EXG
YH175A7-100	6	70424	230	3	35	NO	\$1,798.97	ZR72KC-TF5	C-SB453H6A	HLM072T2	SR071RAC		SFA5572EXT
YH175A1-100	6	70424	460	3	35	NO	\$1,798.97	ZR72KC-TFD	C-SB453H8A	HLM072T4	SR073SAA		SFA5572EXG
YH200A7-100	7	82362	230	3	38	NO	\$2,425.21	ZR81KC-TF5	C-SBR235H36A	HLM081T2	SR081RAA		SFA5581EXT
YH200A1-100	7	82362	460	3	38	NO	\$2,425.21	ZR81KC-TFD	C-SBR235H38A	HLM081T4	SR081SAA		SFA5581EXG
YH230A7-100	8	96158	230	3	53	NO	\$2,821.23	ZR94KC-TF5	C-SC583H6H	SM100-3			SFA5594EXT
YH230A1-100	8	96158	460	3	53	NO	\$2,821.23	ZR94KC-TFD	C-SC583H8H	SM100-4			SFA5594EXG
YH266A7-100	9	110727	230	3	53	NO	\$2,899.07	ZR108KC-TF5	C-SC673H6H	SM110-3		ESH725-20S	SFA5611EXT
YH266A1-100	9	110727	460	3	53	NO	\$2,899.07	ZR108KC-TFD	C-SC603H8H	SM110-4		ESH725-40S	SFA5611EXG
YH307A7-100	10	127794	230	3	54	NO	\$2,982.02	ZR125KC-TF5	C-SC753H6H	SM120-3		ESH730-20S	SFA5612EXT
YH307A1-100	10	127794	460	3	54	NO	\$2,982.02	ZR125KC-TFD	C-SC753H8H	SM120-4		ESH730-40S	SFA5612EXG
YH355A7-100	12	147775	230	3	54	NO	\$3,033.23	ZR144KC-TF5	C-SC903H6H	SM148-3		ESH736-20S	SFA5615EXT
YH355A1-100	12	147775	460	3	54	NO	\$3,033.23	ZR144KC-TFD		SM148-4		ESH736-40S	SFA5615EXG
YSH400A1G-100	13	161731	460	3	90	NO	\$5,043.52	ZR160KC-TFD		SM161-4			
YSH450A1G-100	15	178518	460	3	90	NO	\$5,043.52	ZR190KC-TFD		SM185-4		ESH743-40S	

YM SERIES SCROLL COMPRESSORS

Scroll Compressors With Dual-Compliance For Medium Temperature Application

- Precise Product-Definition Based On Customer's Needs
- Built-in Radius and Axial Compliance Design, with Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch the Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design



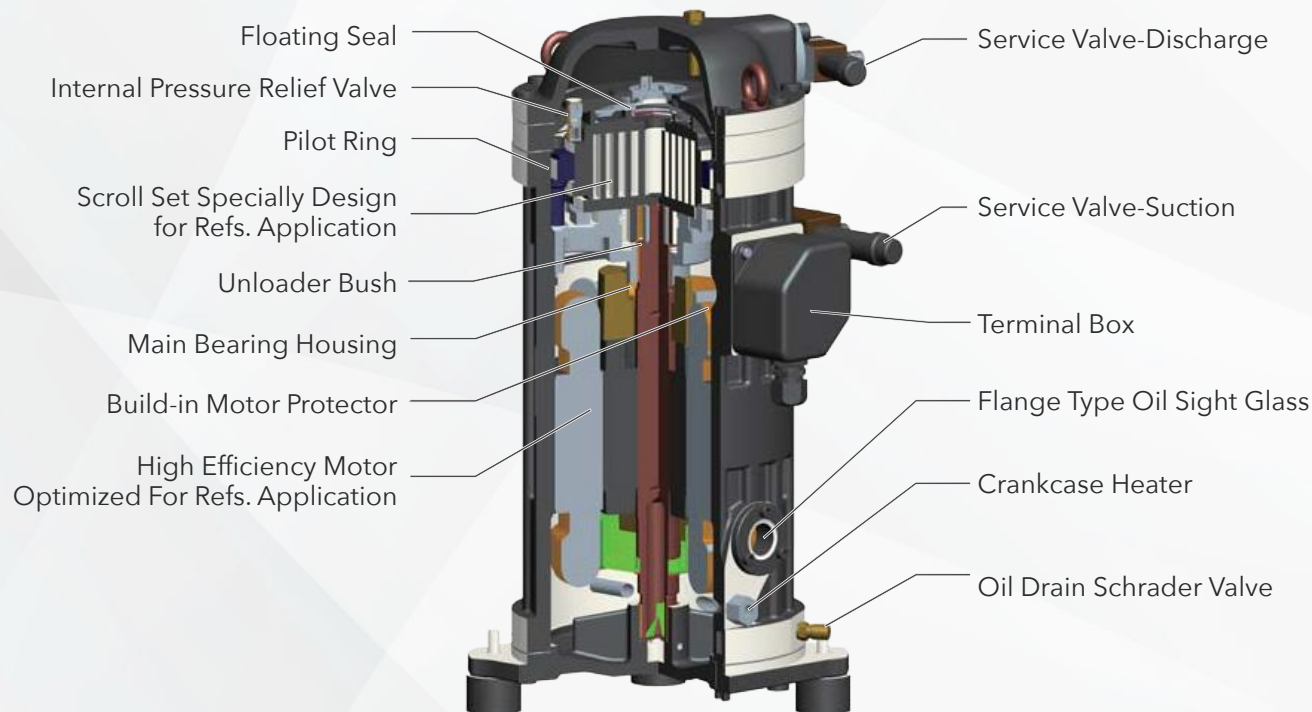
FEATURES

- Capable of Running as low as -15°C Evap. Temp. Without Liquid/ Vapor Injection
- Optimized Floating Seal Design for Better COP
- Scroll Design of Higher Build-in Compression Ratio For Refs. Application
- Multiple Internal Protections
 - High Pressure Protection
 - Overload Protection

YSM SERIES SCROLL COMPRESSORS

Scroll Compressors With Dual-Compliance For Medium Temperature Application

- Precise Product-Definition Based On Customer's Needs
- Built-in Radius and Axial Compliance Design, with Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch the Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design
- Repairable



R-404A REFRIGERATION MEDIUM TEMPERATURE

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference					
								Copeland	Panasonic	Danfoss	LG	Bitzer	Tecumseh
YS07E3G-100	1	7195	220	1	20	NO	\$1,657.31	ZS09KAE-TF5					
YS11E3G-100	1.5	10989	220	1	22	NO	\$1,731.93	ZS11KAE-TF5					
YS15E3G-100	2	15290	220	1	23	NO	\$1,789.89	ZS15KAE-TF5					
YS19E3G-100	2.5	17320	220	1	23	NO	\$1,847.94	ZS19KAE-TF5					
YS21E3G-100	3	21430	220	1	25	NO	\$1,897.66	ZS21KAE-TF5					
YM34E3G-100	2	14576	220	1	31	NO	\$1,614.42	ZB15KCE-PFV		MLZ015T1			
YM34E7G-100	2	14819	220	3	30	NO	\$1,503.60	ZB15KCE-TF5		MLZ015T2		2GES-2Y	
YM34E1G-100	2	14819	460	3	30	NO	\$1,503.60	ZB15KCE-TFD		MLZ015T4		2GES-2Y	
YM43E3G-100	2.5	17401	220	1	31	NO	\$1,649.06	ZB19KCE-PFV		MLZ019T1			
YM43E7G-100	2.5	17691	220	3	30	NO	\$1,545.15	ZB19KCE-TF5		MLZ019T2		2FES-3Y	
YM43E1G-100	2.5	17691	460	3	30	NO	\$1,545.15	ZB19KCE-TFD		MLZ019T4		2FES-3Y	
YM49E3G-100	3	19817	220	1	32	NO	\$1,683.74	ZB21KCE-PFV		MLZ021T1			
YM49E7G-100	3	20147	220	3	32	NO	\$1,579.78	ZB21KCE-TF5		MLZ021T2			SFA7525ZXT
YM49E1G-100	3	20147	460	3	32	NO	\$1,579.78	ZB21KCE-TFD		MLZ021T4			SFA7525ZXG
YM60E3G-100	3.5	24983	220	1	33	NO	\$1,749.40	ZB26KCE-PFV					
YM60E7G-100	3.5	24983	220	3	31	NO	\$1,644.31	ZB26KCE-TF5					
YM70E3G-100	4	28,334	220	1	35	NO	\$1,697.60	ZB29KCE-PFV		MLZ030T1			
YM70E7G-100	4	28,806	220	3	33	NO	\$1,593.65	ZB29KCE-TF5		MLZ030T2		2DES-3Y	SFA7530ZXT
YM70E1G-100	4	28,806	460	3	33	NO	\$1,593.65	ZB29KCE-TFD		MLZ030T4		2DES-3Y	SFA7530ZXG
YM86E3G-100	5	34,803	220	1	35	NO	\$1,722.27	ZB38KCE-PFV		MLZ038T1			
YM86E7G-100	5	35,161	220	3	33	NO	\$1,628.29	ZB38KCE-TF5		MLZ038T2		2CES-4Y	SFA7536ZXT
YM86E1G-100	5	35,161	460	3	33	NO	\$1,628.29	ZB38KCE-TFD		MLZ038T4		2CES-4Y	SFA7536ZXG
YM102E7G-100	6	42,043	220	3	35	NO	\$1,906.65	ZB45KCE-TF5		MLZ045T2		4FES-5Y	
YM102E1G-100	6	42,043	460	3	35	NO	\$1,906.65	ZB45KCE-TFD		MLZ045T4		4FES-5Y	
YM125E7G-100	7.5	50,951	220	3	53	NO	\$3,087.46	ZB50KCE-TF5				4EES-6Y	
YM125E1G-100	7.5	50,961	460	3	53	NO	\$3,087.46	ZB50KCE-TFD				4EES-6Y	
YM132E7G-100	8	53,670	220	3	53	NO	\$3,175.71	ZB58KCE-TF5		MLZ058T2			
YM132E1G-100	8	53,670	460	3	53	NO	\$3,200.81	ZB58KCE-TFD		MLZ058T4			
YM158E7G-100	9	65,945	220	3	53	NO	\$3,273.46	ZB66KCE-TF5		MLZ066T2			
YM158E1G-100	9	65,945	460	3	53	NO	\$3,273.46	ZB66KCE-TFD		MLZ066T4			
YM182E7G-100	10	74,329	220	3	54	NO	\$3,392.18	ZB76KCE-TF5		MLZ076T2		4VES-10Y	
YM182E1G-100	10	74,329	460	3	54	NO	\$3,392.18	ZB76KCE-TFD		MLZ076T4		4VES-10Y	
YM200E7G-100	12	81,322	220	3	54	NO	\$3,687.43						
YM200E1G-100	12	81,322	460	3	54	NO	\$3,687.43						
YM210E7G-100	12.5	85,518	220	3	54	NO	\$3,775.05	ZB95KCE-TE5		SZ148-3		4TES-12Y	
YM210E1G-100	12.5	85,518	460	3	54	NO	\$3,775.05			SZ148-4		4TES-12Y	
YSM235E7G-100	13	95,065	230	3	90	NO	\$4,916.91						
YSM235E1G-100	13	95,065	460	3	90	NO	\$4,916.91	ZB95KQE-TFD		SZ161-4			
YSM260E1G-100	15	105,178	460	3	90	NO	\$5,161.26	ZB114KQE-TFD		SZ185-4		4PES-15Y	
YM350E1G-100	20	135,625	460	3	104	NO	\$8,944.56						
YM410E1G-100	25	156,643	460	3	104	NO	\$10,182.95						

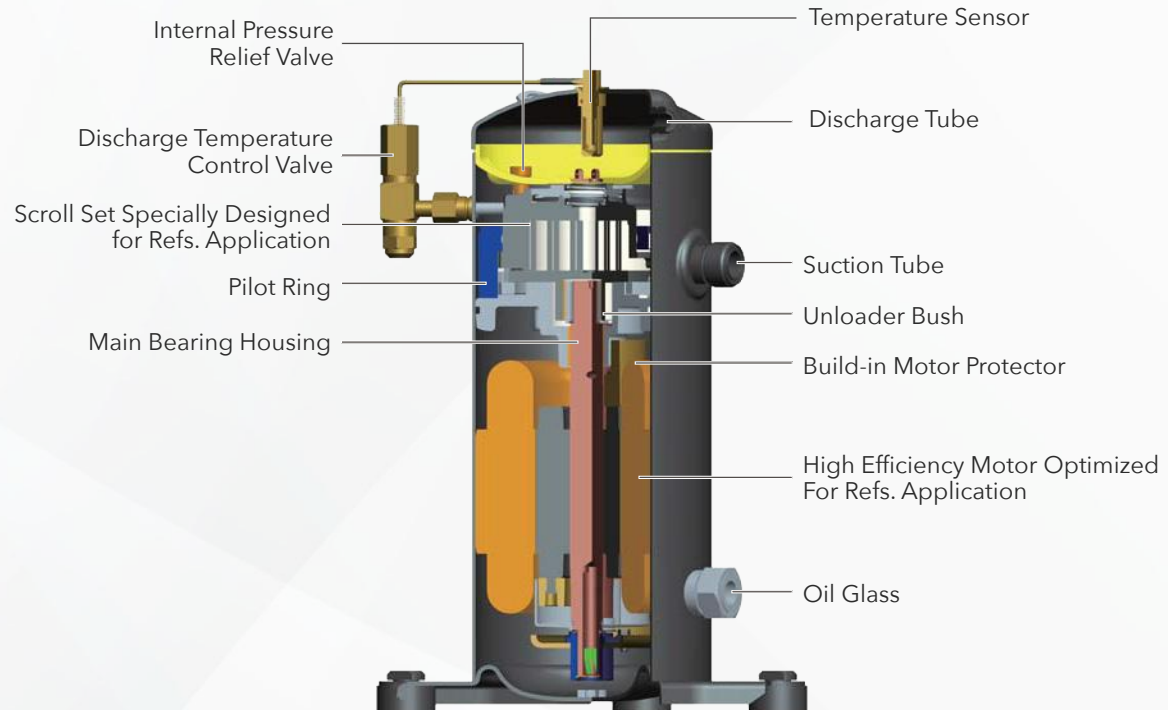
R-22 REFRIGERATION MEDIUM TEMPERATURE

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference					
								Copeland	Panasonic	Danfoss	LG	Bitzer	Tecumseh
YM34A3G-100	2	15,000	230	1	30	NO	\$1,614.42	ZB15KC-PFV					
YM34A7G-100	2	15,000	230	3	30	NO	\$1,503.60	ZB15KC-TF5				2GES-2	TFH4531F-K
YM34A1G-100	2	15,000	460	3	30	NO	\$1,503.60	ZB15KC-TFD				2GES-2	
YM43A3G-100	2.5	17,800	230	1	30	NO	\$1,649.06	ZB19KC-PFV		MLM19T1			
YM43A7G-100	2.5	17,800	230	3	30	NO	\$1,545.15	ZB19KC-TF5		MLM019T2		2FES-3	
YM43A1G-100	2.5	17,800	460	3	30	NO	\$1,545.15	ZB19KC-TFD		MLM019T4		2FES-3	
YM49A3G-100	3	20,300	230	1	30	NO	\$1,683.74	ZB21KC-PFV		MLM021T1			
YM49A7G-100	3	20,300	230	3	30	NO	\$1,579.78	ZB21KC-TF5		MLM021T2			TFH4540F-K
YM49A1G-100	3	20,300	460	3	30	NO	\$1,579.78	ZB19KC-TFD		MLM021T4			
YM70A3G-100	4	29,000	230	1	31	NO	\$1,697.60	ZB29KC-PFV		MLM030T1			
YM70A7G-100	4	29,000	230	3	31	NO	\$1,593.65	ZB29KQ-TF5		MLM030T2		2DES-3	TAG4561T-K
YM70A1G-100	4	29,000	460	3	31	NO	\$1,593.65	ZB29KC-TFD		MLM030T4		2DES-3	
YM86A3G-100	5	35,500	230	1	31	NO	\$1,722.27	ZB38KC-PFV		MLM038T1			
YM86A7G-100	5	35,500	230	3	31	NO	\$1,628.29	ZB38KC-TF5		MLM038T2		2CES-4	TAG4573T-K
YM86A1G-100	5	35,500	460	3	31	NO	\$1,628.29	ZB38KC-TFD		MLM038T4		2CES-4	
YM102A7G-100	6	42,000	230	3	33	NO	\$1,906.65	ZB45KC-TF5		MLM045T2		4FES-5	
YM102A1G-100	6	42,000	460	3	33	NO	\$1,906.65	ZB45KC-TFD		MLM045T4		4FES-5	
YM125A7G-100	7.5	52,200	230	3	53	NO	\$3,087.46	ZB50KC-TF5				4EES-6	
YM125A1G-100	7.5	52,200	460	3	53	NO	\$3,087.46	ZB50KC-TFD				4EES-6	
YM132A7G-100	8	55,000	230	3	53	NO	\$3,175.71	ZB58KC-TF5		MLM058T2			
YM132A1G-100	8	55,000	460	3	53	NO	\$3,087.46	ZB58KC-TFD		MLM058T4			
YM158A7G-100	9	65,800	230	3	53	NO	\$3,273.46	ZB66KC-TF5		MLM066T2			
YM158A1G-100	9	65,800	460	3	53	NO	\$3,273.46	ZB66KC-TFD		MLM066T4			
YM182A7G-100	10	75,800	230	3	54	NO	\$3,392.18	ZB76KC-TF5		MLM076T2		4VES-10	
YM182A1G-100	10	75,800	460	3	54	NO	\$3,392.18	ZB76KC-TFD		MLM076T4		4VES-10	
YM200A7G-100	12	83,300	230	3	54	NO	\$3,687.43	ZB88KC-TF5					
YM200A1G-100	12	83,300	460	3	54	NO	\$3,687.43	ZB88KC-TFD					
YM210A7G-100	12.5	87,500	230	3	54	NO	\$3,775.05	ZB95KC-TE5		SM148-2		4TES-12Y	
YM210A1G-100	12.5	87,500	460	3	54	NO	\$3,775.05			SM148-4		4TES-12Y	
YSM235A1G-100	13		460	3		NO	\$4,916.91	ZB95KQ-TFD		SM161-4			
YSM260A1G-100	15		460	3		NO	\$5,161.26	ZB114KQ-TFD		SM185-4		4PES-15Y	

YF SERIES SCROLL COMPRESSORS

Scroll Compressors With Dual-Compliance
For Low Temp. Application

- Precise Product-Definition Based On Customer's Needs
- Built-in Radius and Axial Compliance Design, with Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch the Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design



FEATURES

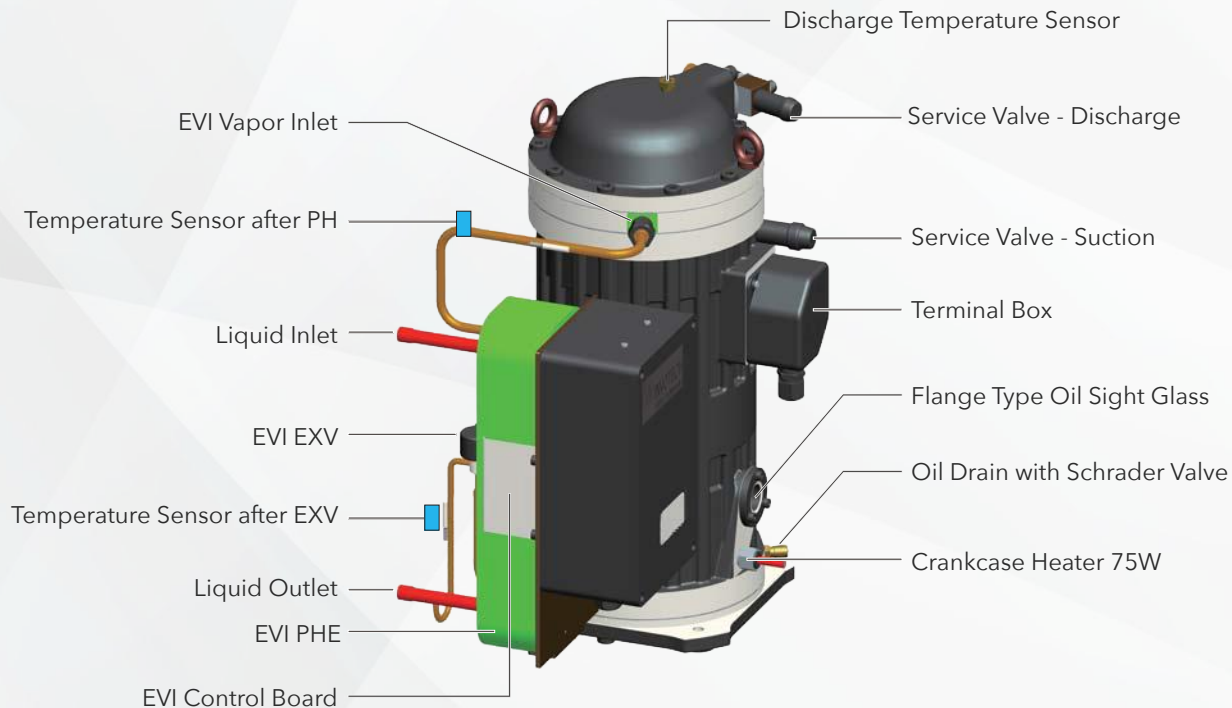
- Capable of Running as low as -40°C Evap. Temp.
- 20% Better in Terms of COP Than Similar Products in The Market
- Truly Specific Scroll Design For Refs. Application
- Optimized Floating Seal Design for Better COP
- Multiple Internal Protections
 - High Pressure Protection
 - Overload Protection

YSF SERIES

SCROLL COMPRESSORS

Semi-Hermetic Refrigeration Scroll Compressor

- Precise Product-Definition Based On Customer's Needs
- Built-in Radius and Axial Compliance Design, with Improved Floating Seal Design for Better Energy Efficiency
- Excellent Discharge Temperature Management to Stretch the Operation Envelope
- Accurate Calculation of Load and Sealing Force for Running Sound Optimization
- High Efficiency Motor Design
- Integrated Vapor Injection and Controller
- Evaporating Temperature capable of running as low as -40°C
- Field Repairable



R-404A REFRIGERATION LOW TEMPERATURE

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference					
								Copeland	Panasonic	Danfoss	LG	Bitzer	Tecumseh
YF13E3G-Q100	2	5674	230	1	29	NO	\$2,776.03	ZF06K4E-PFV					
YF13E7G-Q100	2	6410	230	3	29	NO	\$2,682.01	ZF06K4E-TF5				2FES-2Y	
YF13E1G-Q100	2	6410	460	3	29	NO	\$2,682.01	ZF06K4E-TFD				2FES-2Y	
YF17E3G-Q100	2.5	7238	230	1	30	NO	\$2,993.09	ZF08K4E-PFV		NTZ068-1			
YF17E7G-Q100	2.5	8200	230	3	30	NO	\$2,896.60	ZF08K4E-TF5				2EES-2Y	
YF17E1G-Q100	2.5	8200	460	3	30	NO	\$2,896.60	ZF08K4E-TFD				2EES-2Y	
YF20E3G-Q100	3	8511	230	1	31	NO	\$3,210.19	ZF09K4E-PFV		NTZ096-1			
YF20E7G-Q100	3	9699	230	3	31	NO	\$3,111.19	ZF09K4E-TF5		LLZ013T2		2DES-2Y	
YF20E1G-Q100	3	9699	460	3	31	NO	\$3,111.19	ZF09K4E-TFD		LLZ013T4		2DES-2Y	
YF29E3G-Q100	4	12876	230	1	31	NO	\$3,317.33	ZF13K4E-PFV		NTZ0108-1			
YF29E7G-Q100	4	14611	230	3	31	NO	\$3,218.48	ZF13K4E-TF5		LLZ015T2		4FES-3Y	
YF29E1G-Q100	4	14611	460	3	31	NO	\$3,218.48	ZF13K4E-TFD		LLZ015T4		4FES-3Y	
YF35E3G-Q100	5	16828	230	1	32	NO	\$3,532.50	ZF15K4E-PFV		NTZ136T-1			
YF35E7G-Q100	5	17108	230	3	32	NO	\$3,433.06	ZF15K4E-TF5		LLZ018T2		4EES-4Y	
YF35E1G-Q100	5	17108	460	3	32	NO	\$3,433.06	ZF15K4E-TFD		LLZ018T4		4EES-4Y	
YF41E7G-Q100	6	20647	230	3	33	NO	\$4,167.19	ZF18K4E-TF5				4DES-5Y	
YF41E1G-Q100	6	20647	460	3	33	NO	\$3,504.31	ZF18K4E-TFD		LLZ024T4		4DES-5Y	
YSF60E7G-V100	7	28764	230	3	90	NO	\$4,968.75	ZF18KVE-TF5-EVI				4CES-6Y	
YSF60E1G-V100	7	28764	460	3	90	NO	\$4,968.75	ZF18KVE-TFD-EVI				4CES-6Y	
YSF65E7G-V100	8	30637	230	3	90	NO	\$5,119.08					4TES-9Y	
YSF65E1G-V100	8	30637	460	3	90	NO	\$5,119.08					4TES-9Y	
YSF75E7G-V100	9	36232	230	3	91	NO	\$5,280.89	ZF25K5E-TF5-EVI				4PES-12Y	
YSF75E1G-V100	9	36232	460	3	91	NO	\$5,280.89	ZF25KVE-TFD-EVI				4PES-12Y	
YSF85E7G-V100	10	41668	230	3	91	NO	\$5,556.74					4NES-14Y	
YSF85E1G-V100	10	41668	460	3	91	NO	\$5,556.74	ZF28KVE-TFD-EVI				4NES-14Y	
YSF90E7G-V100	12	47121	230	3	91	NO	\$5,719.48						
YSF90E1G-V100	12	47121	460	3	91	NO	\$5,719.48	ZF33KVE-TWD-EVI					
YSF100E7G-V100	13	49119	230	3	91	NO	\$5,777.25					4JE-15Y	
YSF100E1G-V100	13	49119	460	3	91	NO	\$5,777.25					4JE-15Y	
YSF125E1G-V100	15	55274	460	3	92	NO	\$7,267.85	ZF40KVE-TW7-EVI				4HE-18Y	

R-22 REFRIGERATION LOW TEMPERATURE

Model	HP	BTU/HR	Voltage	Phases	WT/KG	Tandem	MSRP	Cross Reference					
								Copeland	Panasonic	Danfoss	LG	Bitzer	Tecumseh
YF13A3G-Q100	2	5,400	230	1	30	NO	\$2,776.03	ZF06K4-PFV					
YF13A7G-Q100	2	5,400	230	3	30	NO	\$2,682.01	ZF06K4-TF5				2FES-2	
YF13A1G-Q100	2	5,400	460	3	30	NO	\$2,682.01	ZF06K4-TFD				2FES-2	
YF17A3G-Q100	2.5	7,000	230	1	30	NO	\$2,993.09	ZF08K4-PFV					
YF17A7G-Q100	2.5	7,000	230	3	30	NO	\$2,896.60	ZF08K4-TF5				2EES-2	
YF20A3G-Q100	3	7,000	230	1	30	NO	\$2,896.60	ZF09K4-PFV					
YF20A7G-Q100	3	8,000	230	3	30	NO	\$3,210.19	ZF09K4-TF5				2DES-2	
YF20A1G-Q100	3	8,000	460	3	30	NO	\$3,111.19	ZF09K4-TFD				2DES-2	
YF29A3G-Q100	4	8,000	230	1	30	NO	\$3,111.19	ZF13K4-PFV					
YF29A7G-Q100	4	12,000	230	3	32	NO	\$3,317.33	ZF13K4-TF5				4FES-3	
YF29A1G-Q100	4	12,000	460	3	32	NO	\$3,218.48	ZF13K4-TFD				4FES-3	
YF35A3G-Q100	5	12,000	230	1	32	NO	\$3,218.48	ZF15K4-PFV					
YF35A7G-Q100	5	15,000	230	3	32	NO	\$3,532.50	ZF15K4-TF5				4EES-4	
YF35A1G-Q100	5	15,000	460	3	32	NO	\$3,433.06	ZF15K4-TFD				4EES-4	
YF41A7G-Q100	6	15,000	230	3	32	NO	\$3,433.06	ZF18K4-TF5				4DES-5	
YF41A1G-Q100	6	17,000	460	3	33	NO	\$4,167.19	ZF18K4-TFD				4DES-5	
YSF60A7G-V100	7	53954	230	3	90	NO	\$3,504.31	ZF24K4-TWC				4CES-6	
YSF60A1G-V100	7	53140	460	3	90	NO	\$4,968.75	ZF24K4-TWD				4CES-6	
YSF65A7G-V100	8	57580	230	3	90	NO	\$4,968.75					4TES-9	
YSF65A1G-V100	8	56555	460	3	90	NO	\$5,119.08					4TES-9	
YSF75A7G-V100	9	68099	230	3	91	NO	\$5,119.08	ZF33K4-TWC				4PES-12	
YSF75A1G-V100	9	66869	460	3	91	NO	\$5,280.89	ZF33K4-TWD				4PES-12	
YSF85A7G-V100	10	78208	230	3	91	NO	\$5,280.89	ZF40K4-TWC				4NES-14	
YSF85A1G-V100	10	78208	460	3	91	NO	\$5,556.74	ZF40K4-TWD				4NES-14	
YSF90A7G-V100	12	88487	230	3	92	NO	\$5,556.74						
YSF90A1G-V100	12	86950	460	3	92	NO	\$5,719.48						
YSF100A7G-V100	13	92312	230	3	91	NO	\$5,719.48	ZF48K4-TWC				4JE-15	
YSF100A1G-V100	13	90673	460	3	91	NO	\$5,777.25	ZF48K4-TWD				4JE-15	
YSF125A1G-V100	15	112223	460	3	92	NO	\$5,777.25					4HE-18	

ACCESSORIES, PARTS AND COMPONENTS



FEMALE ROTALOCK THREAD

MODEL	DESCRIPTION	MSRP
100-0060-00	1/2" WELDING TO 1" SCRW PORT	\$12.00
100-0060-01	7/8" WELDING PORT TO 1 1/4" PORT	\$14.00
100-0060-02	1 1/8" TO 1 3/4" WELDING PORT	\$16.00

ORIGINAL MANUFACTURER ACCESSORY



ROTALOCK VALVES

MODEL	DESCRIPTION	DISCHARGE VALVE	SUCTION VALVE	MSRP
100-0059-00	3/4"-16UNF + 1/2"ODS	2-7HP	N/A	\$18.00
100-0035-00	1 1/4"-12UNF + 7/8"ODS	8-12HP	2-7HP	\$22.00
100-0037-00	1 3/4"-12UN + 1 1/8"ODS	8-12HP	2-7HP	\$30.00

ORIGINAL MANUFACTURER ACCESSORY



CRANKCASE HEATERS

MODEL	DESCRIPTION	VOLTAGE	MSRP
100-0033-00	Carter plataform heater 5HP	70W/220V	\$20.00
100-0034-00	Carter plataform heater 10HP	90W/220V	\$25.00

ORIGINAL MANUFACTURER ACCESSORY



DTC VALVE FOR YF13***Q*** - YF80***Q***

MODEL	DESCRIPTION	MSRP
13100-0002-01-0	For 2HP-10HP platforms	\$190.00

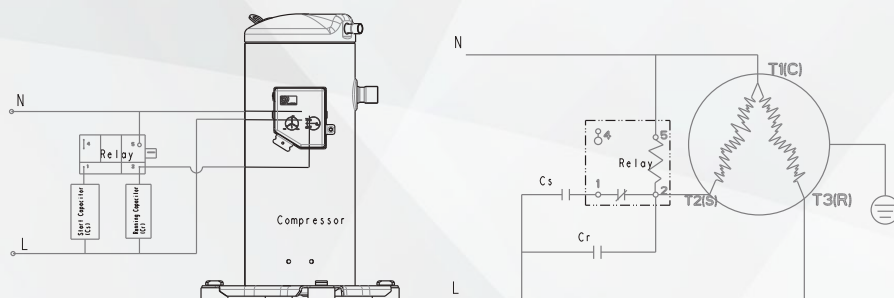
ORIGINAL MANUFACTURER ACCESSORY

ACCESSORIES, PARTS AND COMPONENTS

STARTING KITS

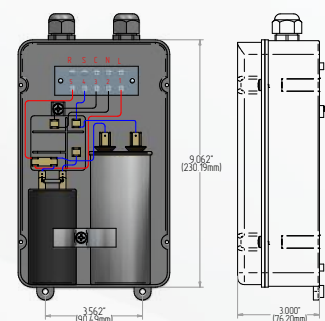
MODEL	COMPRESSOR	START CAPACITOR (Cs)		RUNNING CAPACITOR (Cr)		RELAY	MARKET SUGGESTED RETAIL PRICE
		Volume (uF)	Voltage (V)	Volume (uF)	Voltage (V)		
110-0076-00	YW75A(T)2~YW80A(T)2*-**** YW38J2~YW55J2*-**** YW75C2*-**** YH69A(T)2~YH89A(T)2*-**** YM34A(E)2~YM49A(E)2*-**** YMI3A(E)2~YM20A(E)2*-****	160	330	60	450	HLR3800-3E3D	\$30.00
110-0076-01	YWI02A(T)2~YWI IOA(T)2*-**** YW80J2*-**** YWI IOC2*-**** YH95C3*-**** YHI04A(T)2*-**** YHI04A(T)2~YHI28A(T)2*-**** YM60A(E)2~YM70A(E)2*-**** YF29A(E)2*-**** YF29A(E)3*-****	250	330	80	450	HLR3800-3H3D	\$30.00
110-0076-02	YM34A(E)3~YM49A(E)3*-**** YFI3A(E)3~YF20A(E)3*-**** YW38J3~YW55J3*-**** YH69A(T)3~YH89A(T)3*-****	160	330	60	450	HLR3800-4A3D	\$30.00
110-0076-10	YWI152A(T)2*-**** YWI152C2*-**** YWI35C2*-**** YWI35A(T)2*-**** YF35A(E)2/3*-**** YH119A(T)3~YH150A(T)3-100 YH119C2(3) -YH150C2(3)-100 YM86A(E)2*-**** YM70A(E)3~YM86A(E)3*-****(E)	250	330	100	500	HLR3800-3F3C	\$30.00

ORIGINAL MANUFACTURER ACCESSORY



NOTE:

1. RUNNING CAPACITOR, START CAPACITOR & Relay
CONNECT TO COMPRESSOR ACCORDING TO
WIRING DIAGRAM OTHERWISE, THE COMPRESSOR STARTING DIFFICULTIES;
2. NUMBERS(1, 2, 4, 5) MARKED ON RELAY COULD BE FOUND ON PHYSICAL PART;



100-0024-02 Starting Capacitor 60uF
100-0024-03 Starting Capacitor 80uF



DISCOVER OUR NEW SCROLLS



14 FRAME PLATFORM

- ❄ Refrigerant R410A
- ⚙ Capacity 40~50Ton
- ⚡ Voltage 380V/50Hz, 460V/60Hz



COMING SOON...

LARGE DC INVERTER

- ❄ Refrigerant R410A, R290, R32
- ⚙ Disp. 130cc~170cc
- ⚡ Voltage 380V/50Hz



2-STEP PLATFORM

- ❄ Refrigerant R454B
- ⚙ Capacity 20~30Kw
- ⚡ Voltage 230V/60Hz, 460V/60Hz



53 FR PLATFORM

- ❄ Refrigerant R404A
- ⚙ Capacity 1-3.5 Ton HP
- ⚡ Voltage 280~230V/60Hz
- ⚙ 2-Step Compatible
- ⚙ Variable Speed Compatible

DISCOVER

THE NEW INVOTECH SCROLL COMPRESSORS

Plug Technology
for Electrical connection

**REFRIGERACIÓN
MEDIA TEMP.**

Multi-Refrigerants

- R404A
- R448A
- R449A



**Start Capacitor
Included**



**Sight Glass
Included**



**Cable for Terminal
Included**



Model	HP	Voltage	Phase
YS07E3G-100 ZS09KAE-TF5	1HP	220/1/60	1Phase
YS11E3G-100 ZS11KAETF5818	1.5HP	220/1/60	1Phase
YS15E3G-100 ZS15KAETF5618	2HP	220/1/60	1Phase
YS19E3G-100 ZS19KAETF5618	2.5HP	220/1/60	1Phase
YS21E3G-100 ZS21KAETF5618	3HP	220/1/60	1Phase



CONTACT US

www.invotechtexas.com



INVOTECH

INNOVATIVE
HVAC/R SOLUTIONS
DISTRIBUTION CENTER TEXAS

Product Catalog



USA Corporate Offices
1172 S.Dixie Hwy 277 Coral Gables, FL 33146
(954) 655 9921 | www.invotechtexas.com



**DOWNLOAD THE
APP AND REGISTER**

