



DISTRIBUTED SYSTEMS

REFRIGERATION SYSTEM



KYSOR WARREN
eptarefrigeration

DISTRIBUTED SYSTEMS REFRIGERATION SYSTEM

Kysor Warren Distributed Systems are designed to be located close to refrigerant loads (cases), reducing refrigerant line runs and substantially reducing refrigerant charge.

Kysor Warren Distributed Systems provide significant benefits to food retail customers:

- Up to 80% refrigerant charge reduction
- Energy efficiency
- Ease of installation
- Ease of serviceability and maintenance

Our Distributed System portfolio contains four market leading platforms:

- Distributed Scroll System (DSS)
- Compact Scroll System (CSS)
- Distributed Scroll Pack (DSP)



Distributed Scroll System



Compact Scroll System



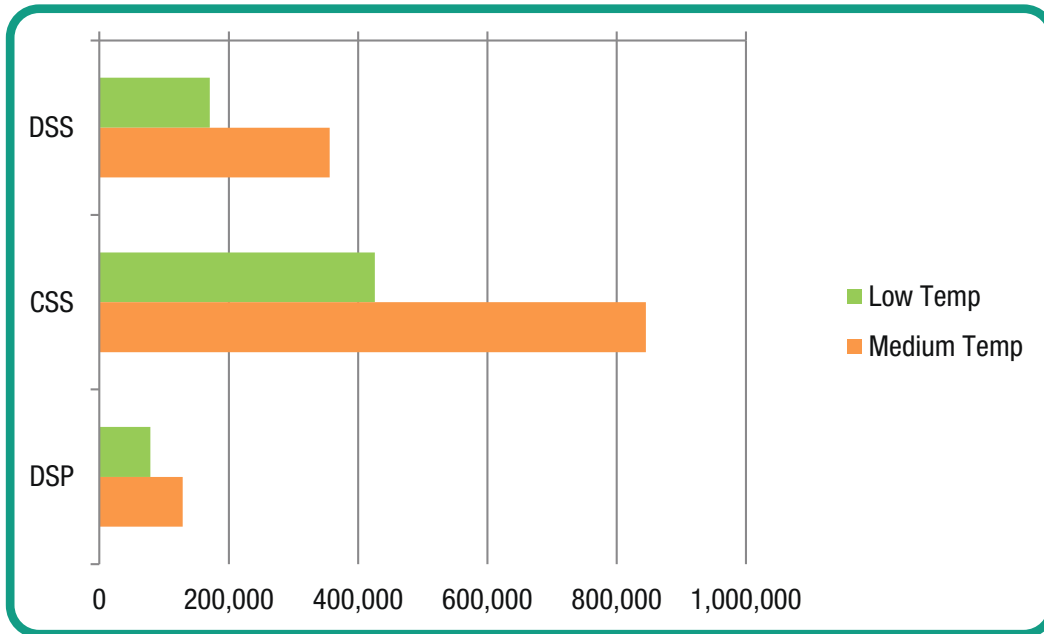
Distributed Scroll Pack System



INSIDE DSS

DISTRIBUTED SYSTEMS

CAPACITY RANGES



	DSS		CSS		DSP	
	Low end of capacity	Top end of capacity	Low end of capacity	Top end of capacity	Low end of capacity	Top end of capacity
LOW TEMPERATURE	50,700 BTUH	170,900 BTUH	50,700 BTUH	425,800 BTUH	44,367 BTUH	78,959 BTUH
MEDIUM TEMPERATURE	92,600 BTUH	355,900 BTUH	92,600 BTUH	845,000 BTUH	47,554 BTUH	128,847 BTUH

ASSUMPTIONS:

-LOW TEMPERATURE: 100°F AMBIENT/110 SCT/-20 SST/50°F SUBCOOLING (LT LOW END IS NON-SUBCOOLED)

-MEDIUM TEMPERATURE: 100°F AMBIENT/115 SCT/20 SST/ NON-SUBCOOLED

Typical Applications

SYSTEM TYPE				
DISTRIBUTED SCROLL SYSTEM	COMPACT SCROLL SYSTEM			
DISTRIBUTED SCROLL PACK	OUTDOOR SYSTEMS			
Common Applications	<ul style="list-style-type: none"> Behind interior store wall Back walkways or hallways Store mezzanine Retrofits/remodels Small back rooms or closets Traditional machine rooms 	<ul style="list-style-type: none"> On top of walk-in coolers/freezers Spaces with limited height clearance Traditional machine rooms 	<ul style="list-style-type: none"> On top of roof Retrofits/remodels 	<ul style="list-style-type: none"> OHW/OHN - outdoors, ground mounted OHD/OHS - outdoors, roof mounted

DISTRIBUTED SCROLL SYSTEM REFRIGERATION SYSTEM

Reduced Refrigerant Charge. Ease of Installation. Accessibility.

The redesigned Distributed Scroll System from Kysor Warren includes an environmentally friendly design offering reduced refrigerant charge and leak potential. The enhanced space-saving design allows for ease of installation and accessibility in one product solution for supermarkets. This innovative system significantly reduces refrigerant charge when applied near refrigeration loads.

Reduced Refrigerant Charge and Leak Potential

- Up to a 70% reduction in refrigerant charge as compared to a traditional centralized rack system
- Features a 35% reduction in brazed joints compared to previous models, drastically reducing the potential for leaks

Ease of Installation and Operation

- Maximizes merchandising space by eliminating need for a machine room
- Reduction of field braze joints means easier installation (less brazing and pipe work) and reduced leak potential
- Additional units can be added to existing facilities

Ease of Accessibility

- Sliding side doors allow for ease of servicing
- Hinged front doors provide easy access to compressor and electrical components
- Easily combined with a Kysor Warren Condenser Assembly to provide a complete high-side refrigeration system solution

Energy Efficient Design

- Features energy efficient Scroll compressors
- Optimal grouping of systems to more closely match suction temperature requirements

The refrigerant reducing Distributed Scroll System is an innovative product solution that significantly improves the total Life Cycle Climate Performance (LCCP) of refrigeration systems, helping our customers become better environmental stewards.



DSS with open cabinet



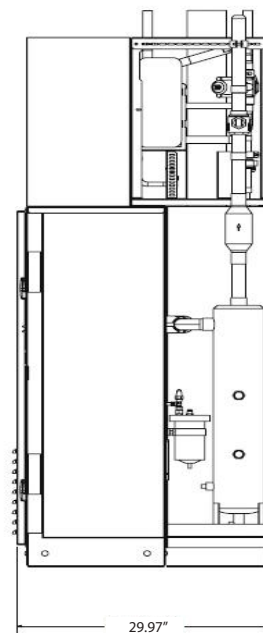
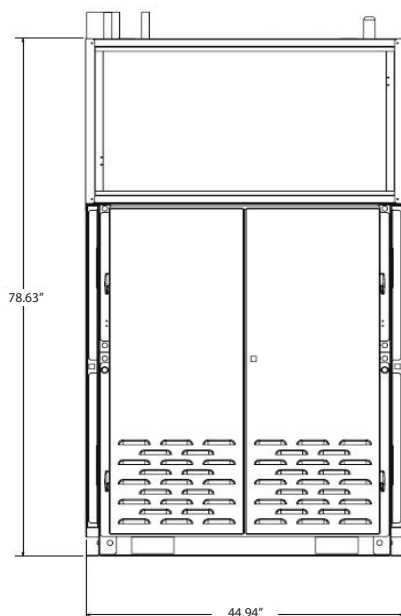
DSS - rear view

DISTRIBUTED SCROLL SYSTEM SPECIFICATIONS

STANDARD	
Design and Construction	<ul style="list-style-type: none"> ■ Galvanized steel cabinet featuring forklift cutouts for lifting; no disassembly required ■ Hinged doors on front access areas ■ Removable side doors for service access ■ Sound attenuating insulation ■ Available in 208V, 460V or 575V power input (dependent upon compressor availability)
Compressors and Piping	<ul style="list-style-type: none"> ■ Up to 6 compressors <ul style="list-style-type: none"> ● 3 compressors of up to 6 hp each on top level ● 3 compressors of up to 6 hp each OR 2 compressors of up to 15 hp each on bottom level ■ Designed for loop piping ■ High pressure Oil System (Centrifugal) ■ One suction group ■ Off-cycle defrost
Components	<ul style="list-style-type: none"> ■ Front-accessible electrical panel ■ Factory mounted microprocessor rack controller, if selected, is accessible without opening the electrical box ■ Factory installed disconnect up to 200A

OPTIONS (CONTACT FACTORY)	
Compressors and Piping	<ul style="list-style-type: none"> ■ Subcooler with brazed plate heat exchanger and electronic expansion valve ■ Up to 2 suction groups ■ Electric defrost or connections for hot gas defrost ■ Horizontal receiver in lieu of compressors on bottom rack ■ Optional auxiliary/shipped loose heat reclaim
Components	<ul style="list-style-type: none"> ■ Novar, Emerson or Danfoss rack controllers

DSS Dimensional Diagrams



COMPACT SCROLL SYSTEM REFRIGERATION SYSTEM

Reduced Refrigerant Charge. Ease of Installation. Accessibility.

The redesigned Compact Scroll System from Kysor Warren includes an environmentally friendly design offering reduced refrigerant charge and leak potential. The enhanced space-saving design is intended to be mounted over a walk-in box or similar structure where a low height is needed. This innovative system significantly reduces refrigerant charge when applied near refrigeration loads.



CSS - front view without skin

Reduced Refrigerant Charge and Leak Potential

- Up to a 50% reduction in refrigerant charge as compared to a traditional centralized rack system

Ease of Installation and Operation

- Maximizes merchandising space by placing refrigeration system over a walk-in or in similar space
- Reduction of field braze joints means easier installation (less brazing and pipe work) and reduced leak potential
- Additional units can be added to existing facilities

Ease of Accessibility

- Can be configured with or without skin and access panels
- Easily combined with a Kysor Warren Condenser Assembly to provide a complete high-side refrigeration system solution



CSS - rear view without skin

Energy Efficient Design

- Features energy efficient Scroll compressors
- Optimal grouping of systems to more closely match suction temperature requirements

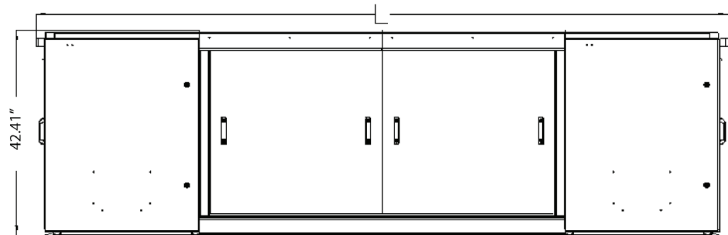
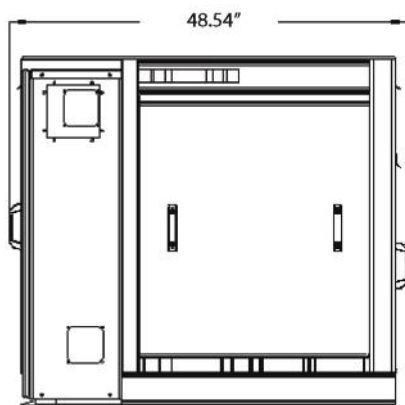
The refrigerant reducing Compact Scroll system is an innovative product solution that significantly improves the total Life Cycle Climate Performance (LCCP) of refrigeration systems, helping our customers become better environmental stewards.

COMPACT SCROLL SYSTEM SPECIFICATIONS

STANDARD	
Design and Construction	<ul style="list-style-type: none"> Unpainted Galvanized Steel Cabinet Removable side doors for service access Available in 208V, 460V or 575V power input (dependent upon compressor availability)
Compressors and Piping	<ul style="list-style-type: none"> Up to 9 scroll compressors Can accommodate Loop, Branch or Circuit piping High pressure Oil System (Centrifugal) One suction group Off-cycle defrost
Components	<ul style="list-style-type: none"> Front-accessible electrical panel Factory mounted microprocessor rack controller, if selected, is accessible without opening the electrical box Factory installed disconnect up to 200A

OPTIONS (CONTACT FACTORY)	
Compressors and Piping	<ul style="list-style-type: none"> Available with sound attenuation insulation on compressor section Removable access panels Subcooler with brazed plate heat exchanger and electronic expansion valve Up to 2 suction groups Electric or Hot Gas defrost Factory mounted receiver Optional auxiliary/shipped loose heat reclaim Additional electrical box Piping can exit back of unit a top, back of unit at bottom, and through the bottom of the unit Mechanical subcooling
Components	<ul style="list-style-type: none"> Painted steel cabinet Novar, Emerson or Danfoss rack controllers Water or comfort heat reclaim Electronic stepper regulator or mechanical suction pressure regulators

CSS Dimensional Diagrams



DISTRIBUTED SCROLL PACK REFRIGERATION SYSTEM

Reduced Refrigerant Charge. Ease of Installation. Accessibility.

The Distributed Scroll Pack from Kysor Warren includes an environmentally friendly design offering reduced refrigerant charge and leak potential. The integrated rack/condenser package allows for ease of installation and maximum flexibility. This innovative system significantly reduces refrigerant charge when applied near refrigeration loads.



DSP - exterior view

Reduced Refrigerant Charge and Leak Potential

- Up to a 80% reduction in refrigerant charge as compared to a traditional centralized rack system

Ease of Installation and Operation

- Maximizes merchandising space by eliminating need for a machine room
- Reduction of field braze joints means easier installation (less brazing and pipe work) and reduced leak potential
- Additional units can be added to existing facilities



DSP - open doors

Ease of Accessibility

- Hinged front doors provide easy access to compressor and electrical components
- Assembly to provide a complete high-side refrigeration system solution

Energy Efficient Design

- Features energy efficient Scroll compressors
- Optimal grouping of systems to more closely match suction temperature requirements

The refrigerant reducing Distributed Scroll Pack is an innovative product solution that significantly improves the total Life Cycle Climate Performance (LCCP) of refrigeration systems, helping our customers become better environmental stewards.

DISTRIBUTED SCROLL PACK SPECIFICATIONS

STANDARD	
Design and Construction	<ul style="list-style-type: none"> Painted steel cabinet Hinged doors on front access areas Available in 208V, 460V or 575V power input (dependent upon compressor availability)
Compressors and Piping	<ul style="list-style-type: none"> Up to three 6hp scroll compressors One suction group Off-cycle defrost
Components	<ul style="list-style-type: none"> Emerson E2 Controller Factory installed disconnect up to 200A

OPTIONS (CONTACT FACTORY)	
Compressors and Piping	<ul style="list-style-type: none"> Electric defrost or connections for defrost Optional auxiliary/shipped loose heat reclaim Available with piping terminations through bottom or out end of unit
Components	<ul style="list-style-type: none"> Novar, Emerson or Danfoss rack controllers

DSP Dimensional Diagrams

