

PRODUCT CATALOG

COMPOSITE REPAIR SOLUTIONS



TECHNICAL
SERVICES



EQUIPMENT



ACCESSORIES



MATERIALS

Innovating Solutions for the Advancement of
Composite Repair Technology

About HEATCON Composite Systems

Innovating Solutions for the Advancement of Composite Repair Technology

HEATCON Composite Systems has been involved in the support of advanced composite repairs since 1981. For over 35 years, we've committed our time and product development to improving composite repair processes.

As a leading global manufacturer and supplier of aerospace composite repair equipment, we provide a full range of hot bonders, accessories, technical and training services, and materials for the repair of composite structures.

We specialize in working with Aircraft Manufacturers (OEMs), Defense Organizations, Commercial Airlines, and Maintenance Repair Organizations (MROs) by providing them with the expertise and tools to repair composite flight controls and other main aircraft parts.

Our experience and knowledge allows us to continuously provide innovative solutions for the advancement of composite repair technology.

ISO 9001:2015, AS9100D, AS9120B CERTIFIED

VISION

To be recognized as the leading provider of composite repair equipment, materials, training and technology to the composite repair industry.

MISSION

We believe that teamwork and customer satisfaction are the foundation of our continued success. We are committed through the skills of our employees to being a vibrant, innovative and responsive market leader in composite repair technology, materials, training, and heating solutions. We will uphold our reputation for quality, engineering expertise, customer support, and product value while maintaining a preferred supplier status with our customers.

VALUES

In all of our relationships we are committed to these primary values:

- Honesty
- Ethics
- Accountability
- Teamwork
- Customer Satisfaction
- Organizational Excellence
- Niche Leadership

HEATCON and its subsidiaries are committed to safety, quality and continual improvement in all areas of the organization. We believe that teamwork and customer satisfaction are the foundation of our continued success. We are committed, through the talents and dedication of all our employees, to be a vibrant, innovative and responsible world market leader in Composite Repair Solutions and Material Processing.

HEATCON's goal is to remain the supplier of choice for each and every customer. We will accomplish this by continually improving the quality and safety of products and processes and by providing an exceptional customer service experience.



Please Recycle

EQUIPMENT

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HEAT BLANKETS

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All products, prices, services, or availability are subject to change without notice.

HOT BONDERS

05-15



HEAT BLANKETS

53-64



COMPOSITE MATERIALS

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REPAIR TOOL KITS

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HOT BONDER COMPARISON GUIDE

	Single Zone					Dual Zone				
	HCS8806	HCS9000B	HCS9000C	HCS9000B-EV	HCS9000-FL	HCS9200B	HCS9200B-EV	HCS9200-FL	HCS9200M	HCS9200N
Number of Zones	1	1	1	1	1	2	2	2	2	2
Output Amperage per Zone (Amps)	16	30	30	30	30	30	30	30	30	30
Operating Voltage (VAC)	90-264	90-264	90-264	90-264	90-264	90-264	90-264	90-264	90-264	90-264
Input Frequency (Hz)	47-63	47-63 400-440	47-63 400-440	47-63 400-440	47-63 400-440	47-63 400-440	47-63 400-440	47-63 400-440	47-63 400-440	47-63 400-440
Maximum Process Temperature (°F)	500	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1400 (J) 2000 (K)	1000
Primary Heating System	Blanket Hot Air Radiant Lamp	Blanket Hot Air Radiant Lamp	Blanket Hot Air Radiant Lamp	Blanket Hot Air Radiant Lamp	Flightline Blanket	Blanket Hot Air Radiant Lamp	Blanket Hot Air Radiant Lamp	Flightline Blanket	Blanket Hot Air Radiant Lamp	Blanket Hot Air Radiant Lamp
Upper Blanket Size Limitations @ 5 Watts in ² at 120V / 220V	480 960	720 1440	720 1440	720 1440	720 1440	720 1440	720 1440	720 1440	720 1440	720 1440
Network Functionality (Large Area Repair) (Requires Controller Console)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Operating Environmental Limitations Temperature °F	0-115	32-122	32-122	32-122	32-122	32-122	32-122	32-122	14-130	14-130
Relative Humidity % ± 5%	0-99	0-93	0-93	0-93	0-93	0-93	0-93	0-93	0-93	0-93
Vacuum Source	None	Shop Air	Shop Air	Shop Air / Int Pump	Shop Air	Shop Air	Shop Air / Ext Pump	Shop Air	Shop Air / Int Pump	Shop Air
Vacuum Lines	1 - 10ft	2 - 10ft	2 - 10ft	2 - 10ft	2 - 10ft	4 - 10ft	4 - 10ft	4 - 10ft	4 - 10ft	2 - 10ft
Vacuum Monitoring	On Screen Display	On Screen Display	On Screen Display	On Screen Display	On Screen Display	On Screen Display	On Screen Display	On Screen Display	On Screen Display	On Screen Display
Return Vacuum Monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Thermocouple Type	J	J or K	J or K	J or K	J or K	J or K	J or K	J or K	J	J
Thermocouples per Zone	6	10	10	10	10	10	10	10	10	8
Temperature Accuracy	± 1°F	± 1°F	± 1°F	± 1°F	± 1°F	± 1°F	± 1°F	± 1°F	± 1°F	± 1°F
Number of Storable Cure Programs	8	30	30	30	30	30	30	30	30	30
Dwell Time	0-480 Min	0-2000 Min	0-2000 Min	0-2000 Min	0-2000 Min	0-2000 Min	0-2000 Min	0-2000 Min	0-2000 Min	0-2000 Min
Max Program Time	0-720 Min	0-2880 Min	0-2880 Min	0-2880 Min	0-2880 Min	0-2880 Min	0-2880 Min	0-2880 Min	0-2880 Min	0-2880 Min
Run Separate Programs on each Zone	N/A	N/A	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes
Run Same Program on Both Zones at the same time	N/A	N/A	N/A	N/A	N/A	Yes	Yes	Yes	Yes	Yes
Ramp Rate	1-99	1-99	1-99	1-99	1-99	1-99	1-99	1-99	1-99	1-99
Modify a Program in Process	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Program Steps in a Cure Program	3 Ramps 2 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells	9 Ramps 8 Dwells
Full Functionality without a Personal Computer	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

HOT BONDER COMPARISON GUIDE

	Single Zone					Dual Zone				
	HCS8806	HCS9000B	HCS9000C	HCS9000B-EV	HCS9000-FL	HCS9200B	HCS9200B-EV	HCS9200-FL	HCS9200M	HCS9200N
Full Text-based GUI, Real Language screens	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Variable Units of Measure	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar	F / C InHg kPa mBar
Display Type	Mono chrome	Color LCD	Touch Screen	Color LCD	Color LCD	Color LCD	Color LCD	Color LCD	Color LCD	Color LCD
Sunlight Readable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
User Interface	4 Button	Keypad	Touch	Keypad	Keypad	Keypad	Keypad	Keypad	Keypad	Keypad
Vacuum Pressure Presented Visually	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
All TC's Status Presented Visually at Once	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TC Test / Blanket Test Prior to Start Cure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Data Export	USB	USB	USB	USB	USB	USB	USB	USB	USB	USB
Stored Cured Data	Last 6 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures	Last 12 Cures
Data Logging Interval	1 Min	1 Min	1 Min	1 Min	1 Min	1 Min	1 Min	1 Min	1 Min	1 Min
Print Interval	N/A	1-99 Min	1-99 Min	1-99 Min	1-99 Min	1-99 Min	1-99 Min	1-99 Min	1-99 Min	1-99 Min
Password Protection	No	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
Printer	No*	1 per Zone	No*	1 per Zone	1 per Zone	1 per Zone	1 per Zone	1 per Zone	1 per Zone	1
Audible Alarm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
High Limit Relay	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power Loss Recovery	Yes 2 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min	Yes 0-15 Min
Weight (lbs)	4.1	15	13	29	25	28	38	37	42.5	37
Dimensions (L x W x H)	10in x 6.5in x 2.5in	18in x 13in x 5.75in	13in x 10.5in x 5.75in	21.75in x 14.25in x 6.5in	23.5in x 17 in x 7.75in	21.75in x 14.25in x 6.5in	21.75in x 14.25in x 6.5in	29in x 19in x 9.5in	23.75in x 18in x 7in	29in x 18in x 8in
Removable Lid	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Equipment Storage in Lid	Separate Case	Optional	Separate Case	Optional	Optional	Optional	Optional	No	No	Separate Case
30 Amp Standard Circuit Breaker	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CE Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Internal GFI Protection	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Hot Bonder Accessory: HCS2070 Printer Station is available for the HCS8800 and HCS9000C to enable printing capabilities.

This and other information from HEATCON Composite Systems® provides product or system options for further investigation by users having technical expertise. Before you select or use any product or system it is important that you analyze all aspects of your technical application and review the information concerning the product in the current product catalog. The user, through their own analysis and testing, is responsible for making the final selection of the system and components and assuring that all performance, safety, and warning requirements of the application are met.



Single & Dual Zone Hot Bonders

HCS9200B	
Weight	28lbs (12.7kg)
Dimensions	21.75in x 14.25in x 6.5in (55.25cm x 36.2cm x 16.5cm)
HCS9000B	
Weight	15lbs (6.8kg)
Dimensions	18in x 13in x 5.75in (45.7cm x 33.02cm x 14.6cm)
Full Features and Options (Page 10)	



Bonders provided by HEATCON Composite Systems are used to control localized heat sources for a wide variety of manufacturing and repair applications which require the curing of prepregs, resins or adhesives.

Bonders typically support 'out-of-autoclave' processing, and are especially useful for on-aircraft repair and secondary curing applications in the manufacturing environment.

- Accessories Included:**
- 4 Heat Blankets**
1-6inx6in, 1-10inx10in
1-12inx12in, 1-15inx15in
 - Power Cords
 - Thermocouples
 - Vacuum Hose
 - Air Filter
 - Extra Printer Ribbon and Printer Paper
 - Data Capture Analysis Software (DCAS)
 - USB Drive
- **Custom heat blankets are available upon request.

**RELIABLE
EASY TO USE
UPGRADABLE
NETWORK CAPABLE*
3 YEAR WARRANTY**

*REQUIRES HCS9300NW CONTROLLER

**Hot Bonder of Choice for
Major Airlines, Repair
Stations and Special
Purposes!**



Touch Screen Single Hot Bonder

HCS9000C (Single Zone)	
Weight	13lbs (5.9kg)
Dimensions	13in x 10.5in x 5.75in (33.02cm x 26.67cm x 14.6cm)
Touch Display Dimensions	4.5in x 3.5in (11.43cm x 8.89cm)
Full Features and Options (Page 10)	



The HCS9000C Hot Bonder is the next generation of Heatcon composite repair systems – built for composite and metal bond repair applications for the modern world.

Its smaller and compact which allows users to easily transport it from job to job. Although different in construction, the HCS9000C consists of the same functionality and durability as found in previous models.

The feature of the touch screen gives users the power to program and monitor cures at their fingertips. Having this convenient feature makes it easier and faster to browse through menus and upload programs.

Bonders typically support ‘out-of-autoclave’ processing, and are especially useful for on-aircraft repair and secondary curing applications in the manufacturing environment.

RELIABLE
EASY TO USE
UPGRADABLE
NETWORK CAPABLE*
3 YEAR WARRANTY
*REQUIRES HCS9300NW CONTROLLER

- Accessories Included:**
- 4 Heat Blankets**
1-6inx6in, 1-10inx10in
1-12inx12in, 1-15inx15in
 - Power Cords
 - Thermocouples
 - Vacuum Hose
 - Air Filter
 - Data Capture Analysis Software (DCAS) USB Drive
 - 3-Year Warranty*
- *Subject to Terms and Conditions



Built in Vacuum System

EV Series Single & Dual Zone Hot Bonders

HCS9200B-EV	
Weight	38lbs (17.4kg) (Vacuum Pump located in Lid Assembly)
Dimensions	21.75in x 14.25in x 6.5in (55.25cm x 36.2cm x 16.5cm)
HCS9000B-EV	
Weight	29lbs (13.2kg)
Dimensions	21.75in x 14.25in x 6.5in (55.25cm x 36.2cm x 16.5cm)
Electric Vacuum Pump	Max. Flow is 0.75 cubic ft/min (354 cm ³ /sec) and Max. Level is 28+ in/Hg (0.967kgs/cm ²)
Full Features and Options (Page 10)	



This line of HEATCON® Composite Repair Systems has a built-in vacuum system to allow easier mobility to the repair site and eliminates the need for a alternative air source.

Bonders provided by HEATCON Composite Systems® are used to control localized heat sources for a wide variety of manufacturing and repair applications which require the curing of prepregs, resins or adhesives.

Bonders typically support 'out-of-autoclave' processing, and are especially useful for on-aircraft repair and secondary curing applications in the manufacturing environment.

- Accessories Included:**
- 4 Heat Blankets**
1-6inx6in, 1-10inx10in
1-12inx12in, 1-15inx15in
 - Power Cords
 - Thermocouples
 - Vacuum Hose
 - Air Filter
 - Extra Printer Ribbon and Printer Paper
 - Data Capture Analysis Software (DCAS)
 - USB Drive
- **Custom heat blankets are available upon request.**

**RELIABLE
EASY TO USE
UPGRADABLE
NETWORK CAPABLE*
3 YEAR WARRANTY**

*REQUIRES HCS9300NW CONTROLLER



Built in Vacuum System

Flightline Single & Dual Zone Hot Bonders

HCS9200FL	
Weight	37lbs (16.9kg)
Dimensions	29in x 19in x 9.5in (73.66cm x 48.26cm x 24.13cm)
HCS9000FL	
Weight	25lbs (11kg)
Dimensions	23.5in x 17in x 7.75in (59.69cm x 43.18cm x 19.68cm)
Distinctive Specifications:	
These Units are Purged and Pressurized for Use in Hazardous Environments.	
Dynamic Alarm/Control Integration with Indicators for Pressure Status, Purge Cycle Initiation and System Ready	
Arc Suppressing Power Connectors are Specifically Designed for Hazardous Environments	
A Ground Fault Interrupter (GFI) is installed to Maximize Equipment Safety.	
An Independent High Limit Controller Disables Power in the Event of Over-Temperature Conditions.	
Full Features and Options (Page 10)	



DESIGNED SPECIFICALLY FOR HAZARDOUS AND FLIGHTLINE ENVIRONMENTS!

- Accessories Included:**
- Power Cords
 - Thermocouples
 - Vacuum Hose
 - Air Filter
 - Extra Printer Ribbon and Printer Paper
 - Data Capture Analysis Software (DCAS)
 - USB Drive
- Specific accessories are described by quotation**

The Flightline Composite Repair Systems include the same basic features, operation and capabilities as the HCS9000 and HCS9200 systems, but are further designed to meet the requirements of Class I, Division II, hazardous environment operation per the U.S. National Electric Code (NEC), as promulgated by the National Fire Protection Association (NFPA).

The primary application is composite and metal bond repairs on fueled aircraft and in other Class I, Division II environments.

Heat blankets* for the flightline systems include a supervisory grid for over-temperature safety and a ground plane for sensing faulty circuits.

***Flightline hot bonder systems require special heat blankets for vapor volatile environments. Heat blankets must be ordered separately. Please ask your Heatcon Sales Engineer for more information regarding Supervisory Heat Blankets.**



Extreme Environment Dual Zone Hot Bonder



HCS9200M	
Weight	42.5 lbs. (19.28kg)
Dimensions	23.75in x 18in x 7in (60.33cm x 45.72cm x 17.78cm)
Internal Electric Vacuum Pump (12 Volt DC)	
(2) Low Temperature Operation (Heated) Pneumatic Vacuum Pumps	
Internal GFI Protection	
HCS9200N	
Weight:	37lbs (16.78kg) (Accessory Set - 70lbs (31.75kg))
Dimensions:	29in x 18in x 8in (73.66cm x 45.72cm x 20.32cm)(Accessory Set - 25in x 19in x 9.5in (63.5cm x 48.26cm x 24.13cm))
8 Thermocouples per Zone	
Single Printer for both Zones	
No Return Vacuum Monitoring	
Accessory Set Cables Rated at 20 Amps	
Full Features and Options (Page 10)	

The primary system application is composite and metal bond repairs under adverse environmental conditions. The HCS9200M and HCS9200N have been certified to extreme environments as defined by MIL-STD-810E. HCS9200N series have been further certified to meet MIL-STD-461E EMI shielding requirements.

The HCS9200M series hot bonder also features an internal electric vacuum pump and two low temperature (heated) pneumatic vacuum pumps, capable of operating in temperatures from 14°F to 140°F.

- Accessories Included:**
- Heat Blankets
 - Power Cords
 - Thermocouples
 - Vacuum Hose
 - Air Filter
 - Extra Printer Ribbon and Printer Paper
 - Data Capture Analysis Software (DCAS)
 - USB Drive
- HCS9200N**
- Data Download Cable
 - Vacuum Gauge
- Specific accessories are described by quotation

DESIGNED SPECIFICALLY FOR EXTREME ENVIRONMENTS!



Features and Options

Standard Features

Operate by easy to follow menus on High-Resolution, Software Dimmable, and Sunlight readable LCD Screen (5.25in x 6.75in) (13.33cm x 17.14cm)

Easy change of any cure parameter while program is running

In progress graphic and numeric displays are easy to interpret

Store 30 programs, enter or revise from key pad

Temperature control by TC 1 or 2, hottest/coolest (automatically locates) or average of all thermocouples, mode selected by operator

10 thermocouple inputs per zone, per aerospace manufacturers recommendations

Temperature adjustments made in increments of 1°F or C.

Exceptional integration of alarm and control systems:

1. Scans all thermocouples for alarm and control
2. High/low temperature deviation alarms for both ramp and dwell
3. Select low vacuum alarm level
4. Alarm system advises specific problem
5. Any alarm causes hold condition, not shut down
6. Alarm hold is automatically released when problem is corrected
7. Easy to silence audible alarm
8. Adjustable loudness

Precise PID control, plus Auto-Tune for unusual situations

Automatic management of thermocouple break or malfunction

Intelligent, automatic restart function after power loss

Dot matrix printer offers the following:

1. Standard paper tape and ribbon
2. Time, date, and full program/cure description

Standard Features

3. Record of Tag Number, P/N, Employee ID

4. Graph of actual cure showing time and temperature

5. Setpoint, actual temperatures and vacuum are printed at selected intervals

6. Print - Temperature Summary or all Thermocouples

7. Record of alarm conditions and alarm clear

8. Prints any program changes or adjustments made during cure

Quiet internal vacuum system runs off plant air

Vacuum system capable of up to 28 in/Hg

Monitor vacuum by separate line from repair

External filter/trap cleans plant air

Adjustable vacuum level, readable before starting cure

Shock mounted components

Operates on 90-264 VAC (47-63 Hz)

30 amps per zone allows bigger blankets and more heat

Both zones on HCS9200B can be independently powered/operated

HCS9200B "Slave" function runs two zones or blankets as one

Temperature display in Celsius or Fahrenheit, user selectable

Vacuum display in Millibars, in/Hg, or kPa, user selectable

Multiple blanket per zone capability

All aluminum, scratch resistant, anodized faceplate

Ergonomic design, convenient hookup of all accessories

Removable lid, lightweight, portable and rugged

Circuit breakers are on front panel, no fuses to replace

Handles on three sides for convenient handling

Options:

- Software security lock with password access
- Menu systems in 4 languages (English, French, Mandarin Chinese, or Japanese)
- Software modifications for special applications
- Customized silicone rubber heat blankets
- Accessory kits and tool packages
- Type "K" Thermocouples
- Special Hot Bonder/cure process training
- Accessory storage in removable lid
- User defined PID values
- 0.1 degree ramp rate
- Accessory case (HCS1011-005)

Configure your Hot Bonder Package

STEP 1: Select Composite Repair Unit	
Model	Yes/No
HCS9000B / HCS9200B	
HCS9000B-EV / HCS9200B-EV	
HCS9000FL / HCS9200FL	

STEP 2: Select Options	
Item	Yes/No
Accessory Storage Lid	
Accessory Storage Case HCS1011-05	
Type K Thermocouple Operation (p 43)	
Special Vacuum Fitting Options	
Special Software Option	
Security Password Protection	

STEP 3: Select Voltage for Repair Unit	
120V	
240V	

STEP 4: Select Input Power Cable		
Item	Voltage	Yes/No
HCS9000-70-145 (US)	120V	
HCS9000-70-140 (US, Asia)	100V/220V	
HCS9000-70-150 (Europe)	100V/220V	
HCS9000-70-160 (China)	250V	

STEP 5: Select Output Power Cable		
Item	Voltage	Yes/No
HCS9000-71-220	125V/30A	
HCS9000-72-220	250V/30A	
HCS9000-71-145	125V/30A	
HCS9000-72-180	250V/30A	
Other (specify)		

STEP 6: Thermocouple Type	
Item	Yes/No
Standard (Type J Disposable)	
Type J	
Type K (must select Type K Operation in Step 2)	

STEP 7: Select Heat Blankets		
Item	Voltage	Yes/No
Standard	120 / 240V	
Stretchable	120 / 240V	
Flightline (for use ONLY with flightline bonders)	120 / 240V	

To properly configure your Hot Bonder, please follow the steps outlined here. This will help ensure you obtain the correct product to meet your specific requirements. Consult your "Authorized Documentation", such as the SRM, for specific details and application procedures.

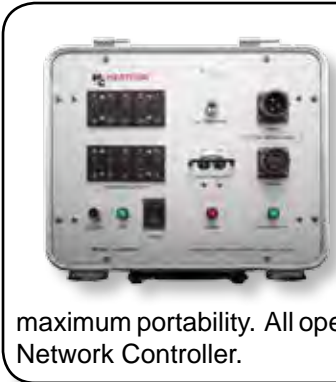
Network Controller

Specifications

Weight	15lbs (6.8kg)
Dimensions	18in x 13in x 5.75in (45.7cm x 33.02cm x 14.6cm)
Network Ports	13
Power	90-264VAC (47-63Hz)
Alarm	Dynamic / Control Integration
Screen	High-Resolution, Software Dimmable, and Sunlight readable LCD Screen (5.25in x 6.75in)
Up to 25 Networkable Zones Available	
Up to 16 Zones Running a Common Program	
Power Failure and Connection Loss Auto Recovery	
USB Interface for Data Export to USB Storage Device	

The HCS9300NW Series Network Controller is used to coordinate the operation of multiple HCS9000/9200 Hot Bonders to accomplish large area cures or thermally complex repair situations where multiple zones are required. The Network Controller centralizes the operator interface, data collection and cure record export functions, and bonder synchronization tasks into one unit, allowing easier management of complex composite repair scenarios.

*HCS9300Z Network Node Hot Bonder requires a HCS9300NW Network Controller to operate.



The HCS9300Z Network Node Hot Bonder has the basic components of a hot bonder without a user interface. The unit uses a high technology combination of hardware and software to accomplish large or complex composite repair and parts fabrication. The Network Node serves as an alternative to using a standard hot bonder, saving size and weight, with maximum portability. All operation is controlled through the HCS9300NW Network Controller.

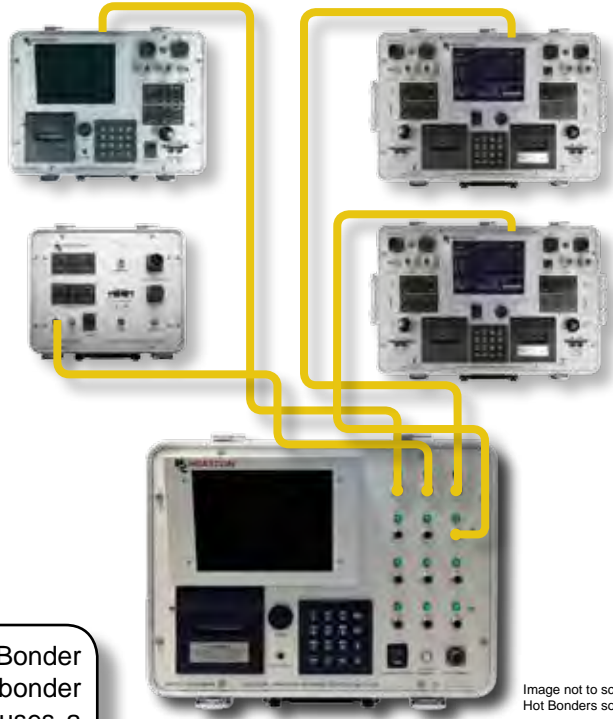


Image not to scale
Hot Bonders sold separately

**CONTROL
MULTIPLE HOT
BONDERS
FROM A SINGLE
LOCATION!**

- Accessories Included:**
- Power Cords
 - Network Cables
 - Extra Printer Ribbon and Printer Paper
 - Data Capture Analysis Software (DCAS)
 - USB Drive
 - Removable Storage Lid
- Specific accessories are described by quotation**

Thermocouple Expansion Unit

HCS9320E Specifications	
Weight	8.75lbs (4kg)
Dimensions	13in x 10.5in x 5.75in (330mm x 267mm x 146mm)
Interface/Display	Requires HEATCON Hot Bonder
Power	90-264VAC (47-63Hz), 2 Amps
Thermocouple (TC) Jack Options	20 or 40
Connectivity	HEATCON Serial Data Cable
Operating Environment	32-122°F, 0-93% Humidity
Temperature Range (Type J)	Ambient to 1,400°F
Temperature Range (Type K)	Ambient to 2,000°F
Temperature Accuracy	+/- 1°F
Temperature Resolution	1°F
Two models available in this series: HCS9320E (20 TC inputs) and HCS9340E (40 TC inputs)	



HCS9340E Model
40 TC Expansion Unit



HCS9320E Model
20 TC Expansion Unit

The HCS9300E Series Thermocouple Expansion Unit is a device that expands the thermocouple channels from the 20 inputs available on the HCS9200B Hot Bonder to 40 or 60 inputs total.

Increasing thermocouple channels in the HCS9200B Hot Bonder significantly expands the capability of heat controlling and monitoring across complex and/or large aircraft structure surfaces.

EXPAND THERMOCOUPLE INPUTS FOR THERMAL SURVEYS!

- Product Features:**
- Allows for an additional 20 or 40 thermocouple inputs
 - Available for Type J or K thermocouples
 - Cure data recorded/stored on connected hot bonder
 - Data activity light indicates proper connection
 - Internally stored calibration data with serial number
 - HEATCON hot bonder Rev 18 (or later) required for operation
 - Compatible with HCS2051-01 calibration kit

- Accessories Included:**
- Input Power Cord
 - Serial Data Cable
 - Thermocouples (quantity depends on model)
 - Operations Manual
- SPECIFIC ACCESSORIES ARE DESCRIBED BY QUOTATION

Multizone Composite Repair System

Specifications	
Weight	200lbs (91kg)
Dimensions	56in x 23in x 26in (1423mm x 584mm x 660mm)
Expansion Ports	04
Input Power	380-415VAC (50-60Hz), 3 phase
Output Power	220-240VAC (50-60Hz), 1 phase
Alarm	Dynamic / Control Integration
Screen	High-Resolution, Software Dimmable, and Sunlight readable LCD Screen (5.25in x 6.75in)
AMPS Maximum	30 AMP per zone
Thermocouple	10 per zone, 6 zones available
Up to 6 Independent Zones Available	
Up to 4 Groups of Zones Running a Common Program	
Power Failure and Connection Loss Auto Recovery	
USB Interface for Data Export to USB Storage Device	



Multizone Back Panel
Features a 6-zone System

The HCS9306R is a six zone composite repair system used to accomplish large area cures or thermally complex repair situations where multiple zones are required. The multizone composite repair system brings together six independent hot bonders into a convenient mobile rack, allowing easier management of complex composite repair scenarios. The multizone system is intended for use in shop repair and manufacturing applications.

ZONE OPERATION BASED ON PROVEN HEATCON HOT BONDER TECHNOLOGY!

- Product Features:**
- Integral ground fault protection with resettable circuit breakers
 - 4 auxiliary network ports for connecting additional hot bonder systems
 - Built in electric vacuum pump
 - Standard thermocouple jacks, power, and vacuum connectors
 - Built in printer
 - Alternate zone and power configurations upon request

- Accessories Included:**
- Power Cords
 - Network Cables
 - Extra Printer Ribbon and Printer Paper
 - Data Capture Analysis Software (DCAS)
 - USB Drive
- SPECIFIC ACCESSORIES ARE DESCRIBED BY QUOTATION

Micro Bonder

EQUIPMENT

Bonders provided by HEATCON Composite Systems are used to control localized heat sources for a wide variety of manufacturing and repair applications which require the curing of prepregs, resins or adhesives.

The HCS8806 Micro Bonder is especially well-suited for use in repair environments which require portability and light weight.

Bonders typically support 'out-of-autoclave' processing, and are especially useful for on-aircraft repair and secondary curing applications in the manufacturing environment.



ONLY
4 lbs

**Lightweight, Portable
and Easy to Operate!**

- LCD Graphic Display
- Audible Alarm
- Type J Thermocouples
- 4 Key Operator Interface
- USB Data Connection
- Integrated Circuit Breaker and Power Switch
- Vacuum Monitoring Capability
- Printer Station Compatible
- NEW!** 6 Thermocouple Inputs

SPECIFICATIONS	
Weight	4.1 lbs (1.9kg)
Dimensions	10 in. x 6.5 in. x 2.5 in. (25.4cm x 16.51cm x 6.35cm)
Operating Voltage:	120 or 240V, single phase
Current (Amps) Maximum Load:	16 Amps
Operating Environmental Limitations:	Temperature: 0 - 115° F (-18° - 46.1° C) Relative Humidity: 0 - 99%
Cure Temperature Range:	0 - 500° F (-18° - 260° C)
Internal Control System Resolution:	0.5° F (0.28° C)
Display Resolution:	1.0° F (0.55° C)
Program Resolution:	1.0° F (0.55° C)
Temperature Accuracy:	+/- 1° F (0.55° C)
Control Methods:	Hottest TC Coolest TC TC Average

SPECIFICATIONS	
Vacuum Monitoring Capability:	0 - 30 Hg
Temperature Feedback:	6 Type J Thermocouples
Operation Interface:	4 Push Buttons with Menu Selected/Real Language Screens on a Dark and Sunlight Readable 2.8 in. (7.11cm) Liquid Crystal Display (LCD)
Power Failure/Recovery:	Power Recovery within 2 minutes of power loss results in continued program operation
Alarm Volume:	77 dB (Adjustable)
Programs Stored to Memory:	8 Separate programs – either downloaded via USB, or operator-entered
Cure Data Download:	USB Uploadable to HEATCON Composite Systems DCAS Software
Ideal for Training Environments!	

Printer Station

The HCS2070 Printer Station is a lightweight, portable printer designed for use with HCS8800, HCS8806, HCS2044, and HCS9000C products. The printer uses a non-thermal, impact print & ink process for a more permanent record than thermal paper can provide. One printer can also be used to print cure records for several bonders.

SPECIFICATIONS

Weight	2.5 lbs (1.133kg)
Dimensions	11.28in x 4.72in x 4.97in (28.65cm x 11.98cm x 12.62cm)
Power	90 - 264 VAC, 47-63 Hz, 1 phase, 1 Amp Max

FEATURES

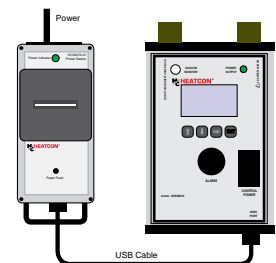
Connects via USB
Non-Thermal Dot matrix printer
Standard paper tape and ribbon
Time, date, and full program/cure description
Record of Tag Number, P/N, Employee ID
Graph of actual cure showing time and temperature
Setpoint, actual temperatures and vacuum are printed at selected intervals
Print - Temperature Summary or all Thermocouples
Record of alarm conditions and alarm clear
Prints any program changes or adjustments made during cure
Post cure printing only

Accessories Included:

- Power Cable
- Printer Paper
- Carrying Case
- Printer Ribbon
- USB Cable



HCS2070-01
Typical Setup



Paper and Ink

B-Model Paper and Ink

Description	Image	Part Number	Details
Printer Paper		HCS2045-03	Printer paper roll used for hard copy text and graphic printouts of repair information.
Printer Ribbon		HCS2045-04	Continuous loop ink ribbon used for printouts of repair information. Use with HCS2045-03 Printer paper roll.

Calibration Services

Our calibration program is in accordance with ISO10012-1 and MIL-STD-45662A. All instruments used for calibration are certified and have traceability back to N.I.S.T. We provide calibration services for all HEATCON composite repair systems. Contact us at service@heatcon.com.

Equipment Support Program

HCS8800	HCS9000B / EV / FL	HCS9200B / EV / FL
Part Number	Part Number	Part Number
HCS8800-ESP1	HCS9000-ESP1	HCS9200-ESP1

A 3-year optional package that includes:

- Annual Calibrations
- Software Updates
- In-Depth Inspections
- Functional Testing
- Paper / Ribbon Replacement

Note: Term effective from date of shipment on new equipment. Standard software revisions only. No options included.

Equipment Leasing / Renting

Leasing Program

The HCS 9000B and 9200B bonders are available for purchase through extended 24-month leasing payments. Terms and conditions apply and will be provided upon request.

Rental Program

Bonders (HCS 9200B, HCS 9000B and HCS 8800) and Hot Air Machines (HCS 2041-01) may be rented at favorable monthly rates.

Warranty Services

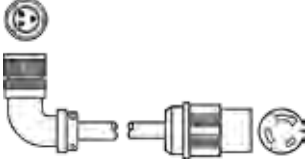
HEATCON Composite Systems® now warranties all of our Hot Bonders for 3 full years and 1 full year on all of our HCS manufactured products against parts and workmanship defects from date of delivery, provided such products are properly applied, used, and maintained. Should any product fail under warranty conditions, it will be repaired or replaced at no charge. If you need warranty service for your product contact us for instructions on where to send your equipment. (See actual written warranty for complete coverage details and conditions.)

Equipment Input Cables

B-Model Equipment Input Cables				
Description	Image	Part Number ²	Color Code	Wire Support
Input Power Cable - with plug		HCS9000-70-145	U.S. Black White Green	Up to 30A @ 125VAC 15A Installed Plug
Input Power Cable - without plug ¹		HCS9000-70-140	U.S./ASIA Black White Green	Up to 30A @ 250VAC
Input Power Cable - without plug ¹		HCS9000-70-150	EUROPEAN Brown Blue Green	Up to 30A @ 250VAC
HCS8800 - Equipment Input Cables				
Input Power Cable - without plug ¹		HCS2001-46	U.S. Black White Green	Up to 20A @ 250VAC
Input Power Cable - with plug		HCS2001-49	U.S. Black White Green	Up to 20A @ 125VAC 15A Installed Plug
Input Power Cable - with plug		HCS2001-50	EUROPEAN Brown Blue Green	Up to 20A @ 250VAC 15A Installed Plug

¹User installs plug.
²Part of Standard Accessory Package. Based on Customer Requirements.

Equipment Output Cables

B-Model Equipment Output Cables							
Description	Image	Part Number	Lead Length	Blade Type	NEMA	Volts	Amps
Output Power Cable - with Receptacle		HCS9000-71-220	5ft (1.52m)	Twist Lock	L5-30	125V	30A
Output Power Cable - with Receptacle		HCS9000-72-220	5ft (1.52m)	Twist Lock	L6-30	250V	30A
Output Power Cable - with Receptacle		HCS9000-72-225	10ft (3.05m)	Twist Lock	L6-30	250V	30A
Output Power Cable - with Receptacle		HCS9000-71-225	10ft (3.05m)	Twist Lock	L5-30	120V	30A
Output Power Cable - 4-Gang Box		HCS9000-71-175	5ft (1.52m)	Straight	5-15	125V	4-15A
Output Power Cable - 4-Gang Box		HCS9000-72-175	5ft (1.52m)	Straight	6-15	250V	4-15A
Output Power Cable - 4-Gang Box		HCS9000-71-155	5ft (1.52m)	Twist Lock	L5-15	125V	4-15A
Output Power Cable - 4-Gang Box		HCS9000-72-155	5ft (1.52m)	Twist Lock	L6-15	250V	4-15A

Equipment Output Cables

EQUIPMENT

B-Model Equipment Output Cables							
Description	Image	Part Number	Lead Length	Blade Type	NEMA	Volts	Amps
Output Power Cable - Duplex Receptacle		HCS9000-71-230	5ft (1.52m)	1 @ 30A Twist Lock 2 @ 15A (Straight Blade available in any output configuration)	L5-30 /5-15	125V	1-30A/ 2-15A
Output Power Cable - Duplex Receptacle		HCS9000-72-230	5ft (1.52m)	1 @ 30A Twist Lock 2 @ 15A (Straight Blade available in any output configuration)	L6-30 /6-15	250V	1-30A/ 2-15A
Output Power Cable - Duplex Receptacle		HCS9000-71-245	10ft (3.05m)	1 @ 30A Twist Lock 2 @ 15A (Straight Blade available in any output configuration)	L5-30 /5-15	125V	1-30A/ 2-15A
Output Power Cable - Duplex Receptacle		HCS9000-72-245	10ft (3.05m)	1 @ 30A 2 @ 15A Twist Lock	L6-30 /6-15	250V	1-30A/ 2-15A
Output Power Cable - Duplex Receptacle		HCS9000-71-170	5ft (1.52m)	Straight	5-15	125V	2-15A
Output Power Cable - Duplex Receptacle		HCS9000-72-170	5ft (1.52m)	Straight	6-15	250V	2-15A
Output Power Cable - Duplex Receptacle		HCS9000-71-145	5ft (1.52m)	Twist Lock	L5-15	125V	2-15A
Output Power Cable - Duplex Receptacle		HCS9000-72-180	5ft (1.52m)	Twist Lock	L6-15	250V	2-15A

Equipment Output Cables

EQUIPMENT

HCS8800 - Equipment Output Cables

Description	Image	Part Number	Lead Length	Blade Type	NEMA	Volts	Amps
Output Power Cable with Receptacle		HCS2005-56	5ft (1.52m)	Straight	5-15	125V	15A
Output Power Cable with Receptacle		HCS2005-57	5ft (1.52m)	Straight	6-15	250V	15A
Output Power Cable with Receptacle		HCS2005-60	5ft (1.52m)	Pin / Socket	CA Style	125V 250V	20A
Output Power Cable with Receptacle		HCS2005-61	5ft (1.52m)	Twist Lock	L5-15	125V	15A
Output Power Cable with Receptacle		HCS2005-62	5ft (1.52m)	Twist Lock	L6-15	250V	15A

Bonder Calibration Kit



Specifications:

Weight	5.5lbs (2.5kg)
Dimensions	17.25in x 12.25in x 3.5in (43.82cm x 31.12cm x 8.89cm)

The HCS2051 Bonder Calibration Kit is designed for use with HCS9000/9200B, HCS9000C, HCS8800/8806, HCS9200M, and HCS9000/9200FL.

The HCS2051 Hot Bonder Calibration Kit is used to perform equipment calibration, traceable to N.I.S.T. standards for FAA and other regulatory body certification.

Proper use of this equipment may eliminate the requirement to send your composite repair system off-site for calibration and certification, reducing repair downtime.

This kit also allows a calibration lab to be functional with a single purchase. Items provided can be used to calibrate most HEATCON composite repair systems. Yearly calibration recommended.

Items Included:

- Digital Temperature Calibrator
- Thermocouple Interconnect Cable
- Protective Case
- Calibrated Vacuum Gauge
- Hose Assembly & Adapter

Data Capture and Analysis Software (DCAS)

The Data Capture and Analysis Software (HCS-DCAS) is a visual graphical program used for cure evaluation and to create / store a history of cure records for maintenance repair organizations.

Software Package Includes:

- Data Capture Software Flash Drive
- Installation Guide

System Requirements:

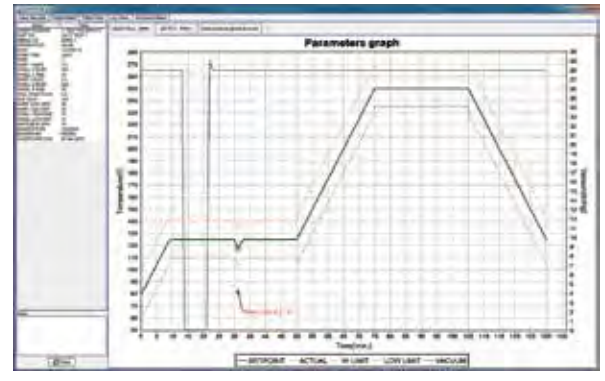
- Windows® 98 or Newer Operating System¹
- Serial (DB9) or USB Connector
- For legacy bonders equipped with a DB9 serial port, the HCS9000-74-100 Serial Cable is required for data export
- For PCs not equipped with a DB-9 (RS-232) serial port, the HCS1018-020 USB to Serial Adapter is available
- Note: Hot Bonder software revisions .8A - .8H require Data Export Software to be installed on the Hot Bonder

Features:

- Summary and Detailed Graph Display of Cure with Time, Temperature, and Vacuum
- Events Log Page with Time-stamped Alarms, Program Changes, Power-loss Events, and Program Step Changes
- Cure Records Database with Ability to Easily Search for Individual or Groups of Cures by Single or Multiple Fields
- Built-in Excel Spreadsheet Format Data Export
- Built-in Print Function for any page of the Cure Record, Enabling Hardcopy Distribution and Record Retention
- ¹Windows is a Registered Trademark of Microsoft Corporation. All Rights Reserved.



Cure Records



Graph View

Table View

Log View

Available as a FREE Download. Call your representative for more information.

Part Number	Description
HCS-DCAS-04	Data Capture Software
HCS9000-74-100	Serial Cable
HCS1018-020	USB to Serial Adapter

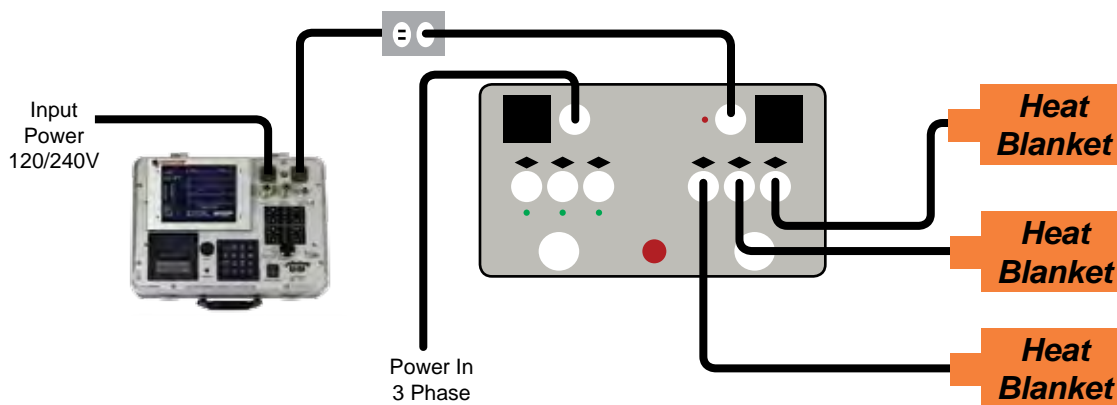
Power Booster Box



The HCS2040 series Power Booster Boxes are designed to connect directly to the output from your HCS9000/HCS9200 Hot Bonder. Three-phase power is supplied to the booster on a separate circuit, and is internally switched to control your large repair. An emergency stop is included for operator safety.

Power Booster Box				
Model Number	Maximum Output Load	Input Voltage 30Amps	Output 3 Phase	Output 1 Phase
HCS2040-09	19.7kW	380/415 VAC 3 Phase WYE	2ea @ 380/415 VAC 20A	6ea @ 220/240 VAC 15A

Typical Setup:



Allows the user to operate up to 6 large Heat Blankets, at the same time!

Accessories Included:

- Input Power Cable
- Bonder Interface Cable

Specific accessories are described by quotation

Specifications:

Weight	40lbs (18.1kg)
Dimensions	24.5in x 15in x 12in (62.2cm x 38.1cm x 30.4cm)

RepairClave



Example Shown: HCS3100-36-120
US Patent - 7,137,799
Canadian Patent: 2,534,014

Our patented HCS3100 RepairClaves are custom built semi-portable pressure vessels. They are designed to provide controlled temperature, vacuum, and pressure during composite and metal bond repair processes.

The positive internal pressure applied to the repair enables operators to achieve the higher pressure when required by aircraft manufacturer repair manuals. Heat is applied only where required using specially constructed silicone rubber heat blankets. This method results in reduced operational costs and fewer problems due to temperature induced part damage.

SPECIFICATIONS	
Dimensions*:	<ul style="list-style-type: none"> Standard lengths start at 3ft (36in), progressing in 3ft increments, up to 30ft (360in) Inside diameter: 3ft or 4ft (36in - 48in) Length and diameter may be customizable upon request
Recommended Power Requirements:	<ul style="list-style-type: none"> 120-240V 1-Phase to 480V 3-Phase Amperage will depend on customer configuration requirements Other Voltages, Multiple Zones, and Phase Configurations Available
Operating Pressure:	<ul style="list-style-type: none"> ASME certified pressure vessel rated at 150 psi maximum pressure at 400°F Nominal operating pressure is 100 psi Certified Pressure Relief Valve built in, per ASME to ensure vessel safety
Construction:	<ul style="list-style-type: none"> Vessel: Constructed from certified rolled plate steel material (SA516-70) Vessel stamped with final ASME Hydrostatic Test on permanently affixed data plate Closures: Hinged Closure - various mechanical locking devices Fixed (Closed) End - Welded Domed Tank Head Locking Casters and Floor Jacks for mobility and stabilization Additional Auxiliary Ports for future expansion
Calibration:	<ul style="list-style-type: none"> 1 Year Intervals recommended by HEATCON Composite Systems
Re-Certification:	<ul style="list-style-type: none"> No Annual Certification of the Pressure Vessel required
<i>(Please check local government directives which may supercede this requirement)</i>	
* Non-standard sizes may be available, call for more information.	

RepairClave

EQUIPMENT



Example Shown:
HCS3100-36-36

Features:

- Lighted Interior
- Removable Part Carrier
- Internal Connections for Heat Blankets, Vacuum, and Thermocouples
- Built in Electric Vacuum Pump
- Adjustable Operating Pressures
- Custom Sizes to Suit your Applications
- Safety Indicator for Vessel Pressure
- Flanged Access Ports for Additional Options

Typical Applications:

- Rotor Blades • Ailerons • Rudders
- Wing Flaps • Winglets • Elevators



Optimized
Interior
Space

Internal
Connectors
for ease
of use



Built-in
Vacuum
System

Customized
Control
Panels



**CUSTOM SIZES
AVAILABLE
TO SUIT YOUR
APPLICATIONS!**



Example Shown:
HCS3100-48-360

Phosphoric Acid Containment System (PACS)

Developed Under a Licensing Agreement from Boeing

The HCS2046-02 Phosphoric Acid Containment System (PACS) includes all equipment necessary for trained operators to perform a phosphoric acid anodizing process. The control methods for this unit are automatic timing and voltage monitoring and manual flow adjustment. Operator Interface is 20 character, backlit LCD display, 5 push-button operation, and flow control valve for flow adjustment. The HCS2046-02 also includes an alarm for both voltage shorts and low flow rate with 85dB and adjustable volume.




SPECIFICATIONS:

Weight	15lbs (10kg)
Dimensions	16.5in x 12in x 9in (41.91cm x 30.5cm x 22.86cm)
Input Power	90VAC - 264VAC (45 - 65Hz)
Output Power	3-10V, 10A maximum
Stainless Steel Screens, Fluid Recovery / Supply Bottles, and Connectors must be ordered separately or from the available kits Specific accessories are described by quotation.	














Stainless Steel Screens in Kits (1ea):
Mesh Size: 16in x 16in, 0.018AWG
Stainless Grade: 304
 12in x 12in (30.48cm x 30.48cm)
 10in x 10in (25.4cm x 25.4cm)
 8in x 8in (20.32cm x 20.32cm)
 6in x 6in (15.24cm x 15.24cm)

Accessories Included:

- PACS Console
- Flow Control Head
- Inlet Air Filter
- Power Lead Set
- (2) Carbon Filter for Vacuum Exhaust

Bottle Kit Description	Image	Part Number	Details
Bottle Kit, Large Designed for Larger Repair Areas		HCS2046-02-300	Fluid Containment Bottles - 2 ea 10L bottles - 1 ea 4L bottle - 1 ea 2L bottle Stainless Steel Screens 12in x 12in, 10in x 10in, 8in x 8in, 6in x 6in (30.48cm x 30.48cm, 25.4cm x 25.4cm, 20.32cm x 20.32cm, 15.24cm x 15.24cm) (1ea) Connectors
Bottle Kit		HCS2046-02-200	Fluid Containment Bottles - 2 ea 5L bottles - 2 ea 2L bottle Stainless Steel Screens 12in x 12in, 10in x 10in, 8in x 8in, 6in x 6in (30.48cm x 30.48cm, 25.4cm x 25.4cm, 20.32cm x 20.32cm, 15.24cm x 15.24cm) (1ea) Connectors

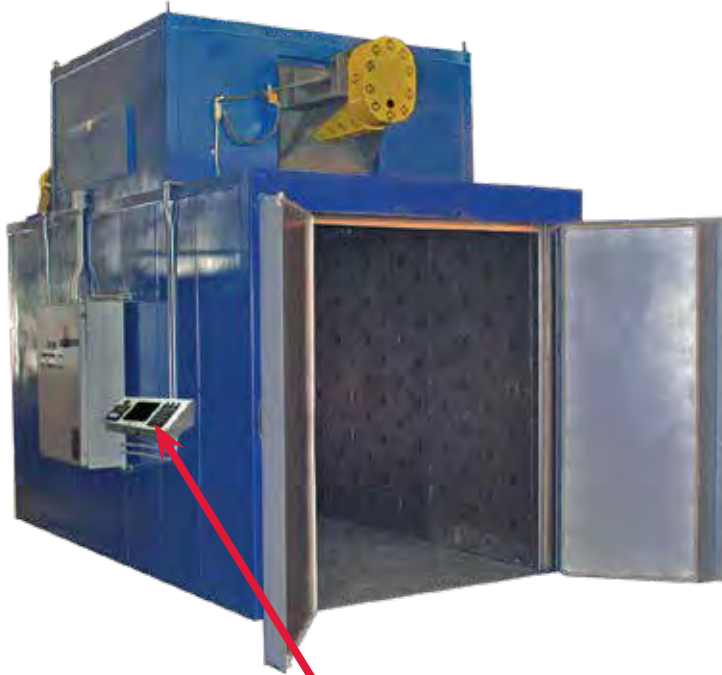
PACS Accessory Assortment

Description	Image	Part Number	Details
Service Cart (Console)		HCS2046-02-021	Acid Resistant 24in x 36in x 32.5in (60.96cm x 91.44cm x 82.55cm)
Phosphoric Acid Solution - 1 Liter		HCS2046-02-002	12%, 1L Package
Phosphoric Acid Solution - 4 Liter		HCS2046-02-002-4	12%, 4L Package - Cubitainer
Acid Disposal Container		HCS2046-02-003	Polyethylene Drum 55gal Capacity (208.17L)
Spill Containment Pallet		HCS2046-02-004	51.5in x 51.5in x 10in (130.81cm x 130.81cm x 25.4cm) 62gal Spill Capacity (234.67L)
Sodium Bicarbonate Powder		HCS2046-02-005	500g (0.5kg)
Emergency Spill Kit		HCS2046-02-006	For chemical/acid spill cleanup
Acid Storage Cabinet - 2 Door		HCS2046-02-007	65in x 43in x 18in (165.1cm x 109.22cm x 45.72cm)
Polarizing Inspection Filter		HCS2046-02-008	
Fluorescent Inspection Lamp		HCS2046-02-009	15W, 120V, 60Hz 25ft (7.62m) Cord
pHydrion™ INSTA-CHEK 0-13 Jumbo pH Testing Paper		HCS2046-02-010	Dispenser w/paper 0-13pH
Safety Goggles		HCS2046-02-011	Chemical Splash resistant, anti-fog design
Safety Apron		HCS2046-02-013	Heavy-Duty Nitrile coated with adjustable neck and waist
Safety Gloves Nitrile		HCS2046-02-012	S, M, L or XL when ordering 50 Pair/box

Venting Closure Lid for PACS System Sold Separately

pHydrion is a registered trademark of Micro Essential Laboratory

Composite Curing Ovens



Our HCS2910 series ovens have been designed to meet demanding composite curing requirements.

Airflow patterns maximize temperature uniformity throughout the oven and provide rapid ramp rates. Digital controls and power switching components ensure accurate temperature control.

We offer installation and startup assistance for all ovens. Consult your sales representative for a quotation.

Standard Capabilities:

- Dual or Horizontal Airflow
- Maximum Operation Temperature of 500°F (260°C)
- Standard Units - 80 ft³ (2.3 m³) to 1000 ft³ (28.3 m³)



Heatcon Oven Controller Included

**OVEN CONTROLLER
USES HEATCON HOT
BONDER TECHNOLOGY**

STANDARD CONSTRUCTION

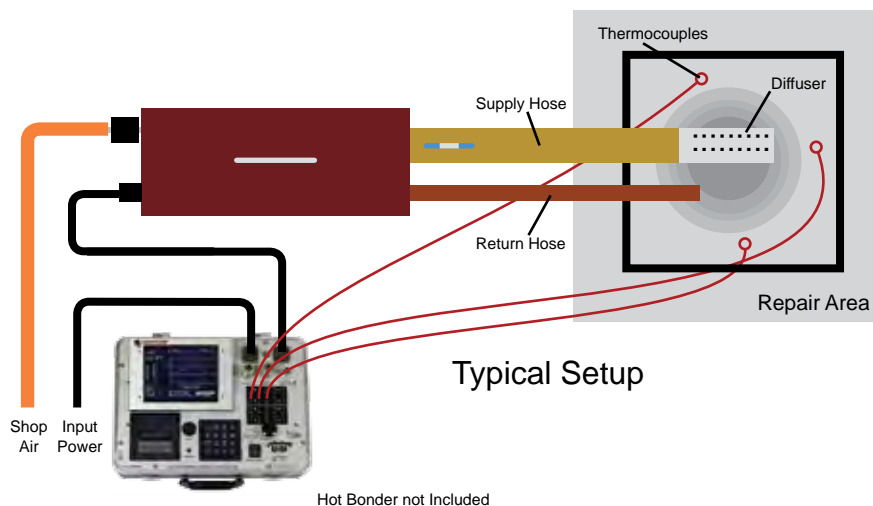
Double front opening doors
Double wall construction
High temperature insulation and gaskets
Internal vacuum connections
Internal temperature monitoring thermocouple jacks
Gas or electric heating options
Heatcon oven controller

Hot Air Curing System



Standard all Models	
Size	22in x 8in x 6.5in (55.39cm x 20.3cm x 16.5cm)
Weight	9 lbs (4kg)
Safety	Internal High Limit
Plant Air	80psi / 4CFM

SPECIFICATIONS			
Model	Power	Input	Coverage Area
HCS2041-01	1800W	110 / 120V	19in x 19in (48cm x 48cm)
HCS2041-02	3000W	220 / 240V	24in x 24in (61cm x 61cm)
HCS2041-04	3600W	110 / 120V	24in x 24in (61cm x 61cm)



This Portable Hot Air Composite Curing System fills an important gap in composite repair techniques by applying heat to difficult shapes or hard to reach areas. Primary applications are composite repairs, secondary bonding, and modifications to composite structures. Powered and controlled by a Hot Bonder, it can be effectively used in place of standard silicone rubber heat blankets. More importantly, it provides even heating of contoured surfaces where a heat blanket cannot be used.

A typical procedure involves vacuum bagging the repair area and placing thermocouples in strategic locations. A second bag, and the supplied insulation shroud, is then applied to make a tent which fills with hot air. To provide consistent temperature, hot air enters the tent through a controllable diffuser and may be recirculated by way of a return hose. The system is easy to set-up and operate and includes the hot air generator as well as high temperature hoses, an air diffuser and insulation shrouds. It will heat an approximate surface area of up to 30in x 30in (76.2cm x 76.2cm) at 250°F (121°C) with ease. Depending on the application and techniques used, it is capable of heating a larger area at higher temperatures.

Applications are constantly evolving, so call for the latest developments.

Infrared Curing Systems

HCS2044-10-T	
Weight	130lbs (58kg)
Frame Dimensions	65.5in x 32.5in x 40in (166cm x 82cm x 101cm)
Input Power	240VAC, 50-60Hz., 1 Phase, 14A
Output Power	3000W
Head Lamp Modules	3

HCS2044-20-T	
Weight	145lbs (65kg)
Frame Dimensions	65.5in x 45in x 40in (166cm x 114cm x 101cm)
Input Power	240VAC, 50-60Hz., 1 Phase, 28A
Output Power	6000W
Head Lamp Modules	6

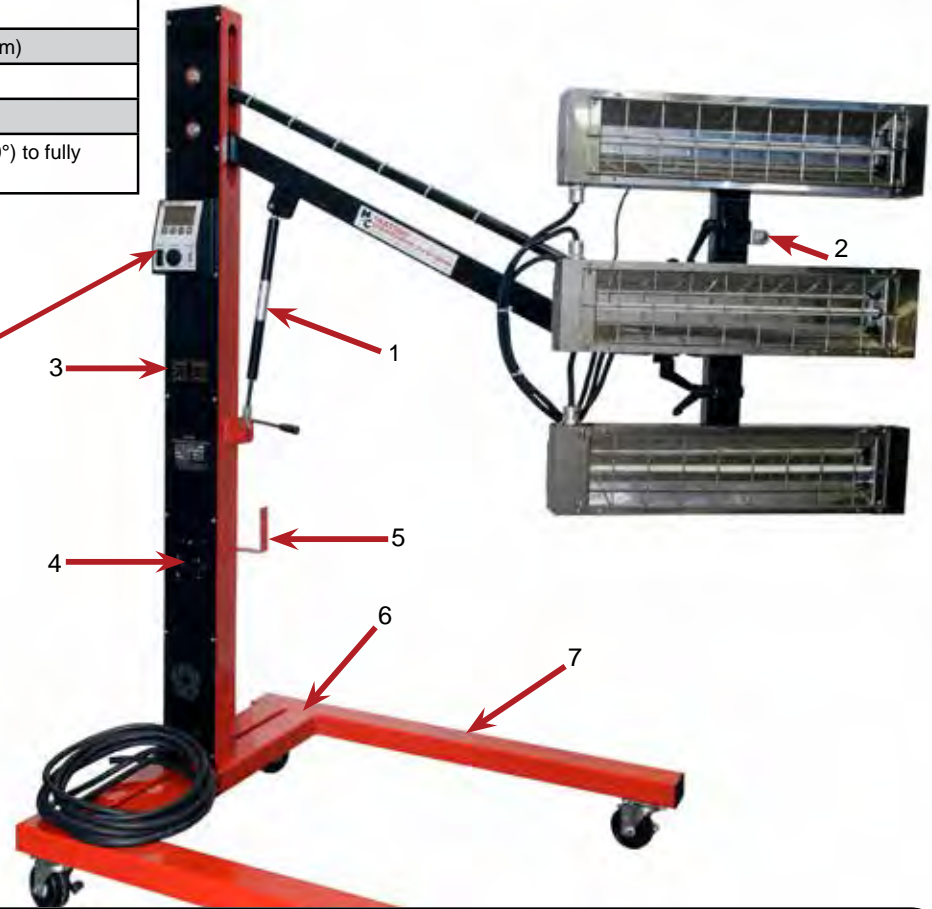
Distinct Specifications	
Arm Length	54in (137cm)
Head Pivot Height	34in to 76in (86cm to 193cm)
Head Swivel Left-Right	-90 to +90°
Head Swivel Up-Down	-90 to +90°
Head Lamp Angles	Fully open straight (2X 180°) to fully closed (2X 60°)

Standard Features	
Item Number	Feature
1	Pneumatic Spring Assist
2 or 3	Selectable Control: IR Sensor or Four Thermocouples
4	Fused System for Safety
5	Cable Hook for Easy Storage
6	Welded Steel Construction
7	Powder Coated Finish
Industrial Grade Components	
HCS2070 Printer Station Compatible	
CE Certified	

** Plug not included*

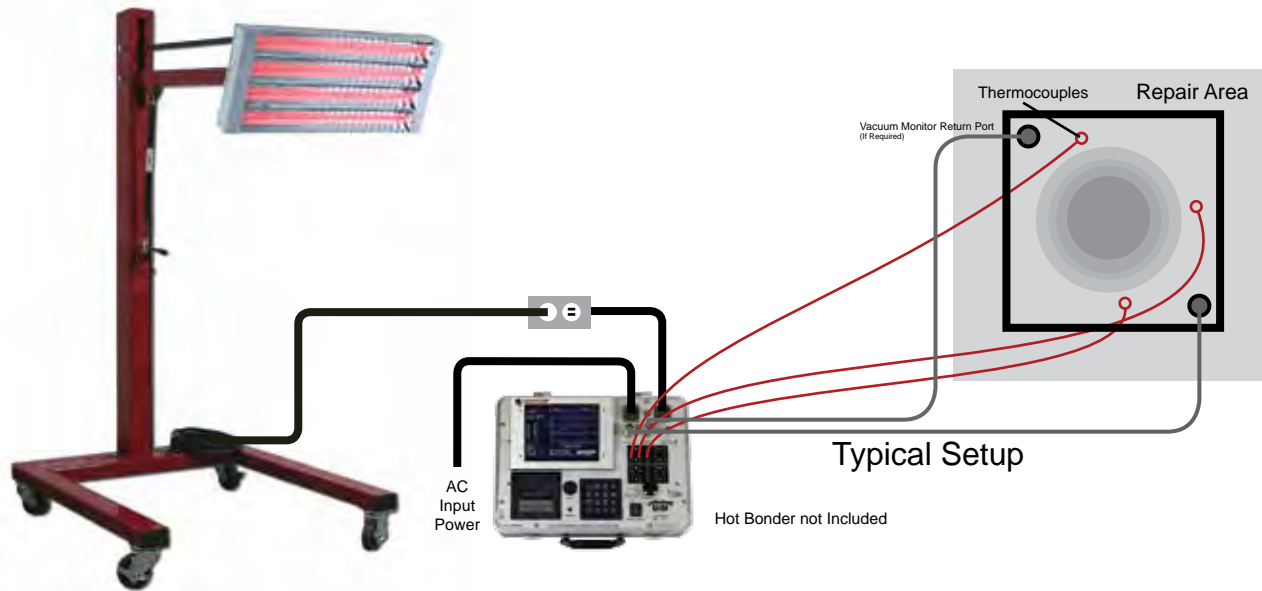


Controller
LCD Display Screen
Programmable Ramp and Soak Settings
Data Export via built in USB port
Easy to Operate & Control



The primary system application is to accelerate the cure of two part resin systems, paint, primers and other coatings. High-efficiency, electric quartz infrared heat elements that provide non-contact radiant heat to the surface of the heated part. An adjustable head allows heat to be directed where it is needed.

Hot Bonder Controlled Heat Lamps



HCS2044-30-02 Series

HCS2044-30-02-120 / 220	
Wattage	3600W
Head Dimension	26in W x 12in H x 2in D (66.04cm W x 30.48cm H x 5.08cm D)
Controlled with Hot Bonder	
HCS2044-30-01-120 / 220	
Wattage	1600W
Head Dimension	12in W x 12in H x 2in D (30.48cm W x 30.48cm H x 5.08cm D)
Controlled with Hot Bonder	
Standard Stand Size	
Height	68in (172.72cm)
Width	31in (78.74cm)
Depth	40in (101.6cm)



HCS2044-30-01 Series

The primary system application is to accelerate the cure of two-part resin systems, paint, primers and other coatings. Head configurations can be custom designed to meet your needs

Debulking and Curing Table



HCS7500-07 shown

The primary system application is curing and debulking of large size composite parts. This can be a difficult process, but HEATCON Composite Systems® has addressed this with our HCS7500 Series of Heated Vacuum Debulking and Curing Tables. By utilizing this equipment, debulking and curing of large panels can be accomplished with less time and less expense as compared with other methods. There are four different sizes and multiple options to choose from. Custom manufacturing of tables to customer requirements is also available.

**MAKING EASY WORK OF
LARGE PART REPAIRS!**

Standard Features:

- Welded Aluminum Tube Frame
- Locking Caster Wheels
- Reusable Vacuum Bag Assembly
- Electric Vacuum Pump System
- Temperature Range to 400°F (204°C)
- HCS9000 Panel Mount Control System
- 8 Thermocouple Monitor Ports

Options:

- Voltage - 240V (Model -06), 380V, 480V (3 Phase)
- Lid - None, Standard, or Insulated
- Electric Vacuum Pump or None (plumbing only)
- Vacuum Gauge
(Inches Mercury and kiloPascals or Millibars)

SPECIFICATIONS:

HCS7500	-06	-07	-08	-09
Length	60in (152.4cm)	72in (182.9cm)	72in (182.9cm)	120in (304.8cm)
Width	48in (121.9cm)	48in (121.9cm)	60in (152.4cm)	60in (152.4cm)
Height	36in (91.4cm)	36in (91.4cm)	36in (91.4cm)	36in (91.4cm)

Double Vacuum Debulking (DVD) Chamber

**OUTSTANDING
POROSITY REDUCTION
CAPABILITY!**



EQUIPMENT

The HCS7600 series DVD Chamber is a custom designed, double vacuum, debulking chamber used for pre-curing composite repair patches resulting in a near-autoclave quality repair.

DVD Chamber operation is an operator and/or repair-specific combination of traditional Hot Bonder controlled heat and bag-vacuum with operator controlled chamber vacuum.

The DVD Chamber is capable of holding 28 in/Hg vacuum over an extended period of time and is adjustable via an onboard vacuum regulator.

Standard Features:

- Aluminum Construction
- Pneumatically Operated Chamber Lid
- Smooth table surface
- Hot Bonder Interface Panel to pass control and power through the platen to the chamber interior
- Built-in vacuum regulator
- Sight Glass on 48in² and larger
- Interior Task Light on 48in² and larger
- Locking / Rolling Casters

Options:

- Storage shelves, and drawers
- Electric Vacuum Pump for Chamber Vacuum

Specific accessories are described by quotation

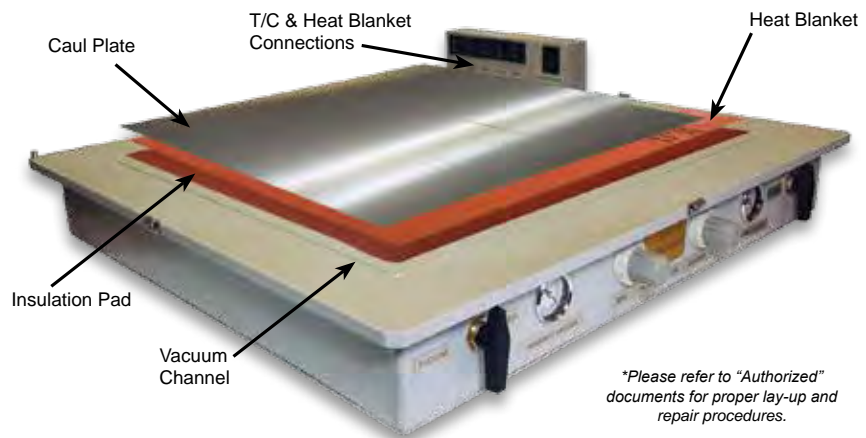
Portable Double Vacuum Debulking (DVD) Chamber



Vacuum Control Panel



Hot Bonder Interface Panel



**Please refer to "Authorized" documents for proper lay-up and repair procedures.*

Model: HCS7600-05 Series

The HCS7600-05 series is a custom designed portable double vacuum, debulking (DVD) chamber. The DVD chamber supports processing of high ply-count composite laminate repair patches in a single cycle.

The DVD chamber allows a unique combination of pressure and temperature parameters which provides an improved ability to remove volatiles during debulking of thick laminates. The DVD chamber is capable of holding 28 in/Hg vacuum, either supplied from a hot bonder or facility source, over an extended period of time. The chamber and bag vacuum levels are operator adjustable via on-board vacuum regulators.

- Accessories Included:**
- Insulation Pad
 - Heat Blanket
 - Caul Plate
 - Thermocouples
- Specific accessories are described by quotation*

SPECIFICATIONS:	
Dimensions	Exterior: 30.375in x 25.625in x 10in (77.15cm x 65.08cm x 25.4cm)
	Interior: 24.5in x 22.5in x 4in (62.23cm x 57.15cm x 10.16cm)
Weight	88 lbs (39.9Kg)
Working Area	18in X 18in (45.72cm x 45.72cm)
Control Input	One (1) Control Zones, 120-240/60/1 from HCS9000/HCS9200 Series Hot Bonder
Maximum Plate Temperature	250°F (121°C) – Material strength decreases significantly when temperatures exceed 250°F.
Maximum Heater Load	1620 Watts
Operating Environmental Limitations:	Temperature: 0° – 122° F (-17° – 50° C) Relative Humidity: 0 – 99 %
Interior 'Bag Vacuum'	Determined by vacuum source
Interior 'Chamber Vacuum'	Determined by vacuum source

OUTSTANDING POROSITY REDUCTION CAPABILITY IN A COMPACT UNIT!

Walk-In Freezers



Model HCS2710-0808 Shown

The HCS2710 Walk-in freezers are a necessity for larger composite repair facilities. Sizes starting at 8ft x 8ft (2.43m x 2.43m) allow for bulk material storage with easy access. Standard and custom sizes are available to suit your storage needs.

Refrigeration Units must be matched to the freezer/voltage requirements.

You will need to hire a refrigeration contractor to install the freezer and charge the system with refrigerant (not included with purchase).

SPECIFICATIONS:

Model ¹	Length	Width	Height
HCS2710-0808	8ft (2.43m)	8ft (2.43m)	8ft 7in (2.61m)
HCS2710-0812	8ft (2.43m)	12ft (3.65m)	8ft 7in (2.61m)
HCS2710-1212	12ft (3.65m)	12ft (3.65m)	8ft 7in (2.61m)
HCS2710-1216	12ft (3.65m)	16ft (4.87m)	8ft 7in (2.61m)
HCS2710-1220	12ft (3.65m)	20ft (6.09m)	8ft 7in (2.61m)

¹Specify voltage when ordering.

Standard Features:

- 26ga embossed galvanized steel, aluminum coated
- Smooth aluminum floor
- Integral thermometer and lighting
- Heavy duty hinges and hardware
- Designed for CFC-free (R-404A Refrigerant)
- 36in (91.44cm) wide self-closing door with emergency release
- Temperature rating to -10°F (-23°C)
- Timed defrost system built-in

Options:

- External access ramp
- Temperature chart recorder
- Strip curtains

Many accessories are available to complete your system. Items such as ramps, racking, freezer curtains, and non-skid coating can be purchased with the HCS2710 or separately. Contact a sales representative for more information.



Sizes start at
8ft x 8ft
(2.43m x 2.43m)

available for quick shipment!

Composite Material Freezer

These large capacity freezers are specifically engineered to meet storage requirements for prepreg composite material and our standard 44in (1.12m) cores. Standard models are configured to include a digital temperature controller, chart recorder and an audible over-temperature alarm system.



Convenient, Safe and Economical Cold Storage!

Standard Features:

- Outer cabinet of welded steel, two-coat enamel finish, zinc coated
- Inner compartment; welded steel, zinc coated, epoxy enamel finish
- Cabinet sealed to minimized moisture accumulation
- Insulation is environmentally safe, high density, non-settling fiberglass or urethane foam
- Rigid compartment support
- Controls are conveniently mounted in instrument panel
- Refrigerants are CFC-free (non-ozone depleting)
- Breaker strips of ABS

Standard Features:

- 6 Heavy duty swivel type casters (recessed)
- Counterbalanced lid, easy opening and safe with magnetic gasket
- Handle, chrome plated, solid die casting, with cylinder key lock
- Sub-lids for added content protection
- Permanently lubricated and hermetically sealed compressor
- Nontoxic, noncombustible refrigerant
- Circular chart recorder
- Digital temperature controller
- Sonalarm temperature and power alarm
- LED lighting

Composite Material Freezer

Model	Size	Temp		Dimension to nearest inch/centimeter						Operating Power	Amps
				Outside Dimension			Inside Dimension				
		°C	°F	H	W	D	H	W	D		
HCS2700-34-25-1	25ft³	-34	-30	34in (86cm)	83in (210cm)	31in (78cm)	24in (61cm)	77in (195cm)	23in (58cm)	120V (60Hz)	10
HCS2700-34-25-2	25ft³	-34	-30	34in (86cm)	83in (210cm)	31in (78cm)	24in (61cm)	77in (195cm)	23in (58cm)	220V (50Hz)	5

Circular Chart Recorder

The HCS1335 is a circular chart recorder like no other. Programmable alarm options combined with “ease of set-up” provide the flexibility required for multiple recording applications. The HCS1335 is the first recorder to “self-document” set-up configuration and can operate using standard or competitive charts, another first in the industry. Eliminate “multi-vendor” chart inventories while reducing operator confusion. Protect your process with the battery backup option, continuous recording for up to 48 hours in the event of power loss.



HCS1335-1110111 (shown)

Not compatible with HCS2700-34 and cannot be used as a direct replacement.

Description	Part Number
10in (25.4cm) Chart Paper	HCS1335-01
Replacement Pen Units	HCS1335-02
¹ Not available on single pen ink model	
² 48 hours of continuous recording	
UL Pending, CE, CUL	

Specifications:

Weight	7lbs Maximum (3.17kg)
Dimensions	14in x 14in x 3.8in (35.56cm x 35.56cm x 9.65cm)
Line Voltage	110/220VAC, 50/60Hz
Power Consumption	15VA Maximum
Thermocouple (T/C)	Type J,K,T,R,B,S
Linear	4-20 mA, 0-5VDC
Common Mode Rejection	> 120dB at 60Hz
Cold Junction Accuracy	±0.2°C @ 25°C ambient
Ambient Error	±0.01% span /°C from 25°C ambient
Isolation	PV inputs isolated from all alarm outputs

Recording:

Chart Size:	10in (25.4cm)
Recording Accuracy:	±0.5% of span (100 division span)

Specifications:

Sensor Break:	Full scale pen < 10 seconds
Chart Speed:	Configurable
Input Filtering:	Programmable up to 120 seconds

Miscellaneous Features:

Operating Temperature:	32°F to 140°F (0 to 60°C)
Storage Temperature:	0°F to 149°F (-40 to 65°C)
Humidity:	0-90% RH (non-condensing)
Vibration:	0.3 to 100Hz @ 0.2g
Mounting:	± 20 degrees of vertical ± 10 degrees of horizontal
Moldings:	Fire retardant Noryl w/acrylic window
Panel Rating:	Nema 3 std (Nema4 option)
Panel Cutout:	12.7in x 12.7in (32.25cm x 32.25cm)

Downdraft Tables

Our HCS2037 series downdraft tables enable source capture collection efficiency for industrial applications requiring larger, open collection areas and work surfaces. These downdraft tables combine the work surface with the particulate collection area. The downdraft design draws contaminants away from the technician's breathing zone without hindering their movement or productivity. We offer a selection of portable and stationary downdraft tables for most any type of grinding, sanding, and welding application.



HCS2037-24

Available Options:

- Center Divider & Side Shields
- Alternate Grate
- Regulator
- Regain Enclosure
- Backsplash Extension



HCS2037-25
(Designed for Light Duty or Schools)



HCS2037-22

Downdraft Tables

Part Number ¹	Table Dimensions (W x H x D)	Work Surface Dimensions (W x D)	Motor (HP)	Downdraft Velocity (FPM)	Noise Level (dBA)
HCS2037-22	32in x 33in x 31in (81.3cm x 83.8cm x 78.7cm)	32in x 24.5in (81.3cm x 62.2cm)	1.5	150	79
HCS2037-23	48.5in x 33in x 31in (123.1cm x 83.8cm x 78.7cm)	48in x 24.5in (121.9cm x 62.2cm)	3.0	208	79
HCS2037-24	70in x 33in x 42in (177.8cm x 83.8cm x 106.8cm)	66.25in x 42in (168.2cm x 106.6cm)	5.0	250	81
HCS2037-25	36in x 30in x 24in (91.4cm x 76.2cm x 60.9cm)	24in x 36in (60.9cm x 91.4cm)	0.25	250 - 1100	65

¹All units available in 50Hz configurations.
NOTE: Please specify voltage, frequency, and other options when requesting quote.

Portable Dust Collectors

EQUIPMENT

Airborne contaminants produced during manufacturing and processing applications are not always effectively collected with ambient dust collector systems.

These portable dust collectors deliver up to 1600 CFM of source collection power anywhere it's needed on the shop floor. These portable dust collectors offer multiple filter options, including: aluminum mesh pre-filters, high-pressure polyester bag filters, and cartridge filters for collection of contaminants from mist and fumes to dust and smoke.

Available Options:

- 7ft, 10ft, or 14ft Extractor Arms
- Dual Extraction Arms
- Replacement HEPA Filter



Portable Dust Collectors				
Part Number ¹	Dimensions (W x H x L)	Motor (HP)	Nominal Air Flow (CFM)	Noise Level (dBA)
HCS2037-26	24in x 31in x 37in (60.9cm x 78.7cm x 93.9cm)	1.5	800	74
HCS2037-27	24in x 34.25in x 49.25in (60.9cm x 86.9cm x 125.0cm)	3.0	1200	75

¹All units available in 50Hz configurations.
Note: Please specify voltage, frequency, and other options when requesting quote.

Positive Pressure Clamps



Specifications:

Weight	31lbs (2.3kg)
Dimensions Available	39.375in x 14.75in (100cm x 37.47cm) 19in x 14.75in (48.26cm x 37.47cm)
Operating Pressure:	10 PSI nominal, 15 PSI Maximum
Pressure Bladder Area:	12.5in x 12.5in (31.75cm x 31.75cm)
Adjustable Height and Pressure Area Placement	
Two types of clamps are available in this series: Single Bladder Clamp or Dual Bladder Clamp (HCS2034-05)	

The HCS2034 series Positive Pressure Clamps are custom designed to be used on-location or localized “on-blade” repairs that require a positive pressure application. These clamps enable repairs to be made on the aircraft which greatly reduces track and balance issues and provides additional labor and operational cost savings. The bladder assembly and/or padded base can be reversed for even greater possibilities.

Custom configurations are available upon request.

Thermowelder

Our HCS2030 Thermowelder provides a foolproof system for ensuring quality welded junctions for both type “J” and “K” thermocouples. Few things are more exasperating than having a composite part damaged by faulty thermocouple readings during its cure. Twisted wire junctions are susceptible to splitting open under pressure, and silver solder type welds often leave unwanted marks on the finished product. Our Thermowelder provides a low profile micro-bead welded junction which eliminates thermocouple mark-off and breaks.



Not available in Europe




Specifications:





Weight	9.5lbs (4.3kg)
Dimensions	11in x 8in x 7.75in (279.4mm x 203.2mm x 196.8mm)
Input Power	120V or 240V/50-60Hz

HTW-WP Weldpowder 4oz
(for use in our Thermowelder)










Thermocouples

Thermocouples			
Description	Image	Part Number	Details
Thermocouple		HCS2010-01	T/C, TYPE J KAPTON 10FT, STD. PLUG 24 GA KAPTON WIRE
Thermocouple		HCS2010-25	T/C, TYPE J TEFLON 10FT, MOLDED PLUG, 24 AWG WITH STD SIZE PLUG, STRAIN RELIEF, 1/4" PARALLEL BEADED JUNCTION
Thermocouple		HCS2010-41	THERMOCOUPLE, ACCUFLEX, 12 ft., TYPE-J, FLAT KAPTON, 28 AWG USED FOR MINIMAL MARK-OFF

Thermocouple Accessory Assortment			
Description	Image	Part Number	Details
Thermocouple Plug - Type "J"		HCS1353	The HCS1353 is a type "J", 2-pole connector plug that provides dependable connections to the receptacle. This plug provides a continuous temperature rating to 400°F (200°C).
Thermocouple Clamp		HCS1354	The HCS1354 strain relief attaches directly to the HCS1353 plug, relieving wire tension that can cause thermocouple failure. Packaged in bulk when necessary.
Thermocouple Plug - Type "K"		HCS1362	The HCS1362 is a type "K", 2-pole connector plug that provides dependable connections to the receptacle. This plug provides a continuous temperature rating to 400°F (200°C).
Mini-Thermocouple Plug		HCS1355	This is a type "J", 2-pole connector plug that provides dependable connections to the receptacle. This plug provides a continuous temperature rating to 400°F (200°C).

Thermocouple Accessory Assortment

Thermocouple Accessory Assortment			
Description	Image	Part Number	Details
Thermocouple Wire Stripper		HCS2036-01-049	One light squeeze strips wire clean up to 0.88in (22.35mm).
Thermocouple Wire - AutoBond™ FEP		HCS1385	This is a color-coded, type “J”, insulated singles, 24ga thermocouple wire, bonded with the AutoBond™ process. This eliminates the need for a conventional jacket. This wire is rated to 545°F (285°C) and is available in rolls of 500ft (152.4m) or 1000ft (304.8m).
Thermocouple Wire - Kapton®		HCS1351	This is a type “J”, 24ga thermocouple wire with Kapton® Insulation. It offers precise temperature readings along with exceptional kink resistance. This wire is rated to 600°F (316°C) and is available by the foot (30.48cm) or rolls of 500ft (152.4m).
Thermocouple Wire - Fiberglass		HCS1352	This is a type “J”, 24ga thermocouple wire with fiberglass insulation. It is an excellent choice for higher temperature applications such as thermoplastics. This wire has a continuous temperature rating to 900°F (482°C) and is available by the foot (30.48cm) or rolls of 500ft (152.4m).
Thermocouple Wire - Teflon®		HCS1350	This is a type “K”, 24ga thermocouple wire with Teflon® insulation. It offers precise temperature readings and calibrated conductors for high system accuracy. This wire is rated to 400°F (204°C) and is available by the foot (30.48cm) or rolls of 500ft (152.4m).
5-Port Thermocouple Block		HCS1358	The HCS1358 is a type “J”, 5 port thermocouple block receptacle. This block provides a continuous temperature rating to 400°F (200°C) and 500°F (260°C) intermittent.
Thermocouple Round Single Port Block		HCS1365	The HCS1365 is a type “J”, round single thermocouple block that provides a continuous temperature rating to 400°F (200°C).

Vacuum Generator



Single Vacuum Models
HCS2025-01 Single, in/Hg
HCS2025-02 Single, mb

Dual Vacuum Models
HCS2025-03 Dual, in/Hg
HCS2025-04 Dual, mb

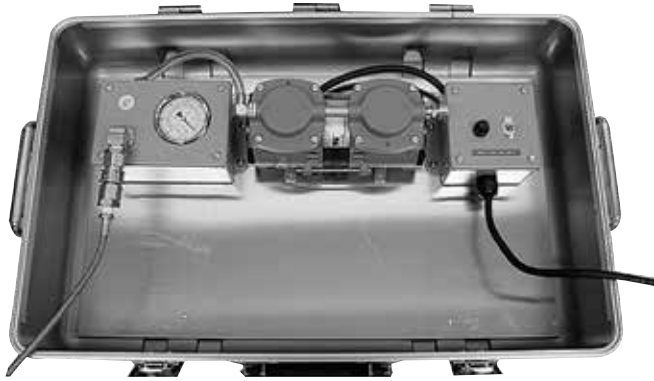
Specifications:	
HCS2025-01/02	
Weight	4lbs (1.8kg)
Dimensions	10.25in x 6in x 5in (26.04cm x 15.24cm x 12.7cm)
HCS2025-03/04	
Weight	8 lbs (3.6 kg)
Dimensions	13.5 In X 9.0 In. X 8.0 In. (330mm X 229mm X 203mm)

Our lightweight, rugged and portable vacuum generator is designed to provide regulable vacuum pressure for a wide range of applications. The HCS2025 can achieve up to 28 in/Hg or 933.33mb vacuum pressure. It can be used in conjunction with our composite repair systems for large area repairs or as a stand alone unit for wet lay-up repairs.

This unit features a vacuum gauge for precise readings and a brass regulator for exact control. Vacuum can be measured inches/Hg or Millibars. Positive air pressure of 80-100psi is needed to operate this device.

Both single vacuum source or dual configurations are available (see part number variations above image). The dual unit can be used to provide vacuum to two separate repairs or to provide vacuum to a double bag lay-up for use with our HCS2046-02 Phosphoric Acid Anodizing Kit.

Electric Vacuum Pumps



**HCS2055-02 120V Version
HCS2055-04 220V Version**

Specifications:	
Weight	29lbs (13kg)
Dimensions	24in x 15in x 9in (60.96cm x 38.1cm x 22.86cm)

Portable two-stage Electric Vacuum Pump for small to medium sized composite repairs. Unit has two modes of operation, maximum flow and maximum level. Maximum flow is 0.75 cubic ft/min (354 cm³/sec) and used for initial bag pull-down and seal. Maximum level is 28+ in/Hg (0.967kgs/cm²) and used for final cure vacuum.

This unit includes universal power input for operation anywhere in the world (47-63Hz, 100-250VAC). The removable accessory case lid holds a vacuum hose assembly. There is also an internal power cord storage area (shown). Vacuum hose included with vacuum pump.

This Accessory Case with Electrical Vacuum Pump is capable of delivering 28+ in/Hg (0.967kg/cm²) at 1 cubic ft/min (472cm³/sec) per and is equipped with power switch, fuse and built-in vacuum gauge. The lid of the case has a large storage compartment with a hinged divider and push button latches. The lower section of the case has additional storage capacity for hoses and cords. An "F" adapter (HCS2016-06) and two vacuum hoses with sniffer are also included.



**HCS2055-06
100-250V**

Specifications:	
Weight	13lbs (5.9kg)
Dimensions	3.75in x 12.25in x 7.5in (34.93cm x 31.12cm x 19.05cm)

Vacuum Leak Checker



Specifications:

Vacuum - 0-30 in/Hg

Used with HCS2015-06 Vacuum Sniffer

The HCS2018 Vacuum Leak Checker can help prevent one of the most common problems associated with composite fabrication and repair - loss of vacuum pressure during the cure process. This device allows you to check the integrity of your vacuum seal before you cure your composite lay-up.

The vacuum leak checker can be used in conjunction with autoclaves, ovens and composite repair systems (hot bonders). This simple yet effective system can detect the presence of hidden leaks before they damage a valuable part.

Vacuum Hose / Sniffer Assembly

Specifications:

Collapse-proof, high temperature Teflon® hose

Stainless steel braided protective wrap to prevent crushing and abrasion

Quick release fitting for ease of operation and vacuum integrity

250°F (121°C) High temperature 450F (Oven Use) versions available

High temperature machined aluminum vacuum sniffer



The HCS2015 Vacuum Hose/Sniffer Assemblies are designed to eliminate problems such as vacuum leaks and collapsed vacuum lines. It is intended for use with both composite repair systems and curing ovens.




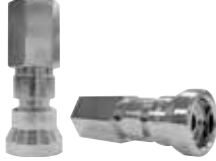





HCS2015	-05	-08	-11	-32	-33
Length (ft)	10	20	6	15	30

Vacuum Accessory Assortment

Description ¹	Image	Part Number	Details	Size
Vacuum Hose - Teflon® with stainless steel overbraid 450°F (232°C)		HCS1404	This collapse-proof hose with stainless steel over-braid offers excellent abrasion and puncture protection. Each end includes 0.25in (6.4mm) NPT male threads. This vacuum hose is offered in various lengths, including custom lengths.	4ft (1.21m)
		HCS1405		5ft (1.52m)
		HCS1406		6ft (1.82m)
		HCS1403		10 ft (3.04m)
		HCS1407		20ft (6.09m)
Vacuum Sniffer		HCS1418	Made of machined aluminum with maximum temperature 500°F (260°C). Simple 1/4 turn installation, and breathable base design. Wrench flats for easy change of fittings. Very rugged and easy to seal.	
Vacuum Sniffer Assembly		HCS2015-06	Same as above, with the addition of the HCS1402 male quick-disconnect.	
Vacuum "F" Adapter		HCS2016-06	Allows composite repair system to monitor and record vacuum from an external source.	
Air Filter/Trap Assembly		HCS2021-01	Inline filter/trap, bulb style. Easy to clean and view contaminates. Installs directly to machine's plant air connection and has quick disconnect on plant air side. Can be used on other composite repair units. Please consult factory.	
Element, Replacement Filter		HCS2021-01-001	Replacement Filter Element for Air Filter/Trap Assembly	
Integrated Vacuum Pump & Sniffer		HCS2026-01	Attach to plant air and apply vacuum direct to repair. Use 80 to 100psi, at 2.0 SCFM for 27in - 28in/Hg at sea level.	
5-Port Vacuum Manifold		HCS2016-02	Primarily designed for schools or training situations when curing multiple projects simultaneously. Allows vacuum to multiple bags.	
4-Port Vacuum Manifold		HCS2016-03	Primarily designed for schools or training situations when curing multiple projects simultaneously. Allows vacuum to multiple bags	

¹Replacement Accessories for HCS9000/9200 Series Composite Repair Systems.

Vacuum Accessory Assortment

Description ¹	Image	Part Number	Details
Quick Disconnect Coupler - Male		HCS1428-002	Male version with 0.25in (6.35mm) NPT female threads. Also used on HCS2015-05 Vacuum Hose/Sniffer Assembly.
Quick Disconnect Coupler - Female		HCS1015-002	Female version with 0.25in (6.35mm) NPT male threads. Mates with HCS1428-002.
Quick Disconnect		HCS1414	Plant air hose fitting that mates with the composite repair equipment air input connection. For equipment that uses plant air. 0.25in (6.35mm) NPT female threads. Used on HCS2021-01 filter assembly
Quick Disconnect - Female		HCS1401	Vacuum hose fitting that mates with HEATCON Composite Systems [®] vacuum sniffers. Allows for rapid, leak-proof vacuum connections. This parts 0.25in (6.35mm) NPT female threads mate with vacuum hoses or HCS1402 with 0.25in (6.35mm) NPT male fittings.
Quick Disconnect - Male		HCS1402	Vacuum hose fitting that mates with HEATCON Composite Systems [®] vacuum sniffers. Allows for rapid, leakproof vacuum connections. Attaches to HCS1418 vacuum sniffer with 0.25in (6.35mm) NPT male fittings or the HCS1401
Vacuum Gauge		HCS2051-01-002 (gauge only)	Precision 0-30 in/Hg gauge with 3in (7.6cm) dial. 0.25in (6.35mm) NPT Stainless Steel fitting provides 0.5% accuracy. Available with certification documents for calibration purposes. Also used as a replacement gauge for the HCS2051 Calibration Kit. Not available in millibars.
Vacuum Gauge Assembly		HCS2051-01-005	Precision 0-30 in/Hg gauge with 3in (7.6cm) dial. 0.25in (6.35mm) NPT Stainless Steel fitting provides 0.5% accuracy. Available with certification documents for calibration purposes. Also used as a replacement gauge for the HCS2051 Calibration Kit. Not available in millibars
Vacuum Gauge with Sniffer		HCS2027-01	Inexpensive means of monitoring the vacuum of a composite repair bag. Available with certification documents as an option. Also available: HCS2027-04 Vacuum Gauge with HCS1401 quick disconnect, without sniffer.
Vacuum Gauge with Quick Disconnect		HCS2027-03	Precision 0-30 in/Hg and 0-100 Kilopascals (KPS) gauge and HCS1401 quick disconnect used to monitor vacuum of a composite repair bag. Available with certification documents as an option. Used with HCS2015-06 Vacuum Sniffer.

¹Replacement Accessories for HCS9000/9200 Series Composite Repair Systems.

Radome Moisture Meter



The HCS2049 Radome Moisture Meter indicates moisture levels in aircraft radomes. A patented dielectric radio frequency power-loss absorption method is used to determine moisture levels.

HCS2049-01 115V
HCS2049-02 220V

Kit Includes:

- Metering unit
- Electrode gun
- Separate charger

Features:

- Direct reading scale for instantaneous reading of Good, Fair, Poor and Unacceptable radome moisture levels.
- Spring-loaded contact points allow nondestructive testing of irregular radome surfaces.
- Separate electrode gun permits testing in remote areas.
- Rechargeable Ni-Cad batteries.
- Available with 115V or 220V battery charger
- Maximum 2.5 to 3.0cm measurement depth

Portable Electronic Scales

Typically used for weighing fillers, adhesives, and resins during composite layup applications. The HCS2038-03 Series electronic scales allows for accurate weight measurements up to 6200g.



HCS2038-03-002



HCS2038-03-003



HCS2038-03-005

Specifications

Model Number	Description*	Pan Size	Capacity	Accuracy	Weighing Modes	Power Incl. / (Optional)
HCS2038-03-002	Portable Scale Round Platform	5.75x5.25in (14.61cm x 13.34cm)	2000g	±1g	g, lb/oz	115 VAC (3 AA Alkaline Batteries)
HCS2038-03-003	Portable Scale Round Platform	5.5in diameter round	620g	±0.01g	g, ct, lb/oz	115 VAC (230 VAC, EUROPEAN STYLE, HCS2038-03-009)
HCS2038-03-005	Portable Scale Square Platform	7.5x7.5in (19.05cm x 19.05cm)	6200g	±0.1g	g, ct, lb/oz	115 VAC (230 VAC, EUROPEAN STYLE, HCS2038-03-009)
Model Number	Description		Voltage	Style		
HCS2038-03-009	ADAPTER, SCALE		6VDC/230VAC	EUROPEAN STYLE, (FOR HCS2038-03-003, 005)		

Note: Above images are provided to represent the type of product only. Balance scales cannot be calibrated before shipping. Reference manufacturer manual for calibration instructions.

Ultrasonic Leak Detector

The HCS2038-02 Ultrasonic Leak Detector is ideal for detecting and locating sources of vacuum leaks through the use of sophisticated electronic circuitry. The Ultrasonic Leak Detector incorporates an internal noise control that eliminates interference from audible noise and detects only high frequency sounds caused by vacuum leaks.



Multiple Uses:

- Vacuum Bag Leaks Operations
- Leaks in Compressed Air Systems • Detecting Electric Arcing
- Diagnosing Solenoid • Detecting Gas Leaks
- Locating Worn Bearings

Specifications:

Weight with battery	9oz (255g)
Operating Temp	32° to 140°F (0° to 50°C)
Power	9VDC (Battery)
Includes	9V Battery, Rubber Probe Extension, Headphones, Storage Case

Magnehelic® Pressure Gauges



The HCS2038-11 Magnehelic® Differential Pressure Gauge is the industry standard to monitor and measure positive pressure in clean rooms, fan and blower pressures, and filter resistance.

Part Number	Range in W.C.	Included*
HCS2038-11D	0 - 0.25	Single Unit
HCS2038-11	0 - 0.25	1 -Gauge 1-Enclosure 10ft-Tube

Specifications:

Service	Air and non-combustible, compatible gases.
Housing	Die cast aluminum case and bezel with acrylic cover. Exterior finish coated gray to withstand 168hr salt spray corrosion test.
Accuracy	±4% of full scale throughout range at 70°F (21.1°C).
Pressure Limits	-20 in/Hg to 15psig† (-0.677 bar to 1.034 bar)
Overpressure	Relief plug opens at approximately 25psig (1.72kPa), standard gauges only.
Temperature Limits	20 to 140°F (-6.67 to 60°C).
Size	4in (101.6mm) Diameter dial face.
Mounting Orientation	Diaphragm in vertical position.
Process Connections	1/8in (3.175mm) female NPT duplicate high and low pressure taps - one pair side and one pair back
Weight	1lb 2oz (510g)

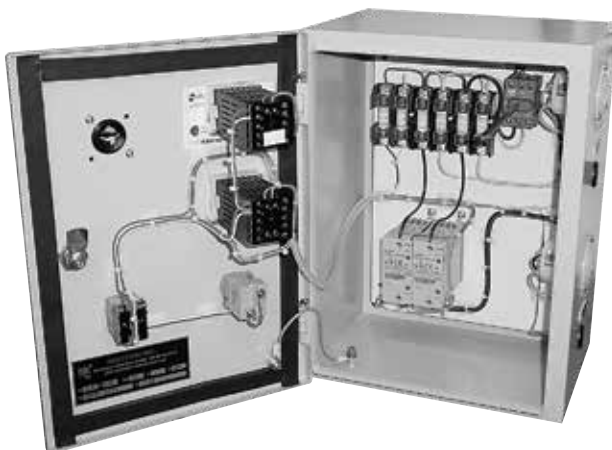
Note: Magnehelic® is a registered trademark of Dwyer Instruments

*Above image is to represent the type of product only.

Custom Capabilities



Front of Control Panel



Inside Control Panel

For those applications where a portable composite repair system is not the best choice, we can provide custom heat control systems to suit your requirements.

- Composite Fabrication
- Larger Infrared Heat Lamps
- Oven Control
- Refrigeration Control

Simply provide us with your requirements and we will provide the solution.

Capabilities:

- UL 508 Listed Industrial
- Standard or Made-to-Order
- Single and Multiple OEM
- Complete Systems Integration

Available Options:

- Controls:
 - Single and Multizone
 - Temperature Limit
 - Timers, Counters, Panel Meters
 - Chart Recorders
 - Programmable Logic
 - Operator Interface Terminals
- Relays:
 - Contractor
 - Mercury Displacement
 - Solid State
 - Motor Starters and Drives
- Enclosure Ratings:
 - NEMA 12 Dust Resistant (standard)
 - NEMA 4 Moisture Resistant
 - NEMA 4X Corrosion Resistant
 - NEMA 4/7 Moisture/Explosion Resistant
 - NEMA 7 Explosion Resistant

Heat Blanket Tester



This easy-to-use Heat Blanket Tester will identify possible hidden damage to the blanket with a simple “Pass/Fail” feature. This will help to ensure uniform heating of the application by elimination of cold spots associated with blanket failure.

With prompting by on-screen menus, the repair technician connects the blanket to the tester, enters the voltage and wattage and views the results. The tester can identify open, shorted and intermittent circuits or power leads.

**IT’S AS SIMPLE AS
“PASS” OR “FAIL”**



Protective Case Included!

Specifications:	
Weight	2.5lbs (1.1kg)
Dimensions	8.5in x 6in x 3in (21.59cm x 15.24cm x 7.62cm)
Power	100-240VAC (47-63Hz), 0.1A
Construction	Aircraft Quality Aluminum Enclosure, Sealed Overlay Keypad, Backlit LCD Graphic Display
Includes	Carrying Case, Test Leads

Heat Blankets

**STRONG
FLEXIBLE
DURABLE
UNIFORM HEATING
UNIQUE
CONSTRUCTION**

Our silicone rubber heat blankets are specifically designed for the repair of composite structures using vacuum bagging techniques.

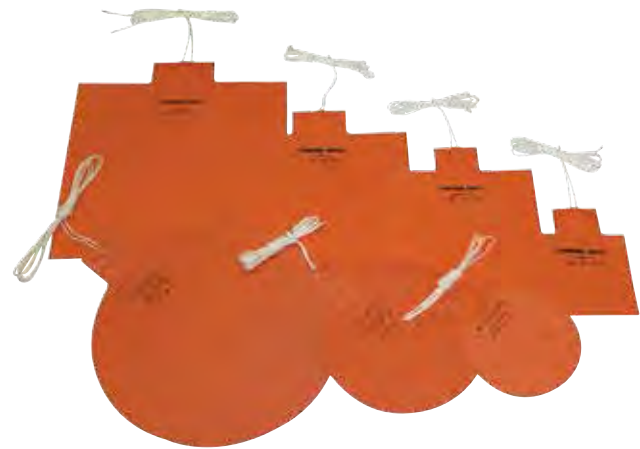
The unique construction of our heat blankets allows you to apply uniform heat exactly where you want it. Our design employs a grid of wound resistance wire, vulcanized between two layers of fiberglass reinforced silicone rubber. This design features strength, flexibility, durability and even heat distribution.

Specifications:

Maximum Width - 48in (121.9cm) Unspliced
Maximum Length - 136in (345.44cm) Unspliced
Maximum Temperature - 450°F (232°C)
Watt Density - 5 W/in ² (0.8 W/cm ²)
Standard Material - Textured silicone rubber
Standard Leads - Teflon® insulated 600V/400°F (204°C)
Standard Lead Length - 5ft (1.52m)
Standard Input Power - 120V or 220/240V (others available)
Double Bus Bar Construction - to maximize strain relief
External Tabs - Increase heating area
CE Conformity
Dimensional Tolerance - ± 1%

Featured Options:

Heat Mapping - to test for thermal uniformity
Supervisory Circuits - for hazardous environments
Multiple Zones - for large repairs up to 30 Amps per zone
Custom Sizes/Shapes/Contours
Plugs - for various applications and power sources



HEAT BLANKETS

The Solution to Uneven Heat Distribution is *Quality!*

Useful Formulas

Heat Blanket Amperage

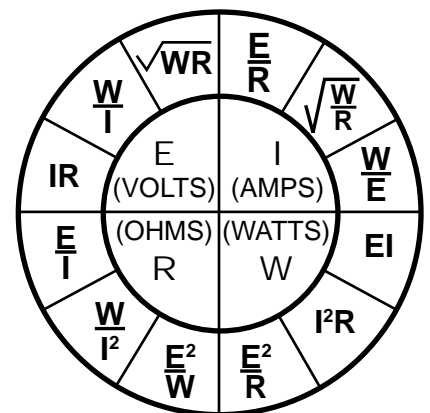
$$\text{Amperage} = \frac{\text{Watts rated}}{\text{Volts rated}}$$

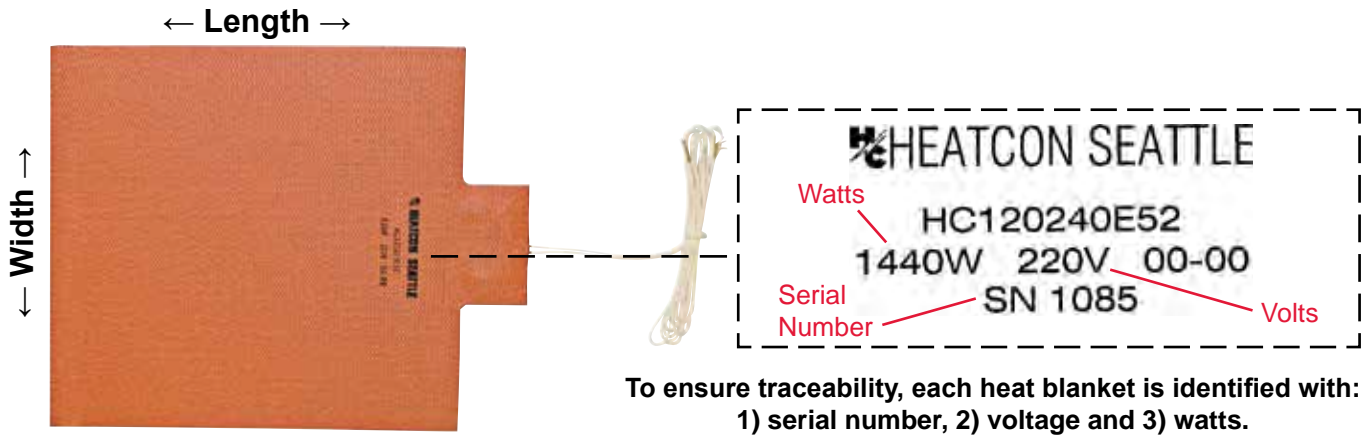
Heat Output Due to Voltage Change

$$W_{\text{NEW}} = W_{\text{RATED}} \frac{(V_{\text{NEW}})^2}{V_{\text{RATED}}}$$

$$3 \text{ Phase Amperes} = \frac{\text{Total Watts}}{\text{Volts} \times 1.732}$$

Ohm's Law





To ensure traceability, each heat blanket is identified with:
1) serial number, 2) voltage and 3) watts.

HEAT BLANKETS

Normally Stocked 120V / 220V Rectangular Heat Blanket Assortment

Description	120V Part Number	220V Part Number	Watts	Bonder Kit ¹	Supervisory	Heat Mapping
4in x 10in (10.6cm x 25.4cm)	HC040100E51	HC040100E52	200W		√	√
6in x 6in (15.2cm x 15.2cm)	HC060060E51	HC060060E52	180W	√	√	√
6in x 8in (15.2cm x 20.3cm)	HC060080E51	HC060080E52	240W		√	√
6in x 10in (15.2cm x 25.4cm)	HC060100E51	HC060100E52	300W		√	√
6in x 12in (15.2cm x 30.5cm)	HC060120E51	HC060120E52	360W		√	√
6in x 20in (15.2cm x 50.8cm)	HC060200E51	HC060200E52	600W		√	√
6in x 24in (15.2cm x 61.0cm)	HC060240E51	HC060240E52	720W		√	√
6in x 36in (15.2cm x 91.4cm)	HC060360E51	HC060360E52	1080W		√	√
6in x 40in (15.2cm x 101.6cm)	HC060400E51	HC060400E52	1200W		√	√
6in x 72in (15.2cm x 182.9cm)	HC060720E51	HC060720E52	2160W		√	√
8in x 8in (20.3cm x 20.3cm)	HC080080E51	HC080080E52	320W		√	√
9in x 12in (22.8cm x 30.4cm)	HC090120E51	HC090120E52	540W		√	√
10in x 10in (25.4cm x 25.4cm)	HC100100E51	HC100100E52	500W	√	√	√
12in x 12in (30.5cm x 30.5cm)	HC120120E51	HC120120E52	720W	√	√	√
12in x 18in (30.5cm x 45.7cm)	HC120180E51	HC120180E52	1080W		√	√
12in x 24in (30.5cm x 61.0cm)	HC120240E51	HC120240E52	1440W		√	√
15in x 15in (38.1cm x 38.1cm)	HC150150E51	HC150150E52	1125W	√	√	√
15in x 18in (38.1cm x 45.7cm)	HC150180E51	HC150180E52	1350W		√	√
18in x 18in (45.7cm x 45.7cm)	HC180180E51	HC180180E52	1620W		√	√
18in x 24in (45.7cm x 61.0cm)	HC180240E51	HC180240E52	2160W		√	√
24in x 24in (61.0cm x 61.0cm)	HC240240E51	HC240240E52	2880W		√	√

Normally Stocked 120V / 220V Round Heat Blanket Assortment

6in (15.2cm)	HC060060E51R	HC060060E52R	141W		√	√
8in (20.3cm)	HC080080E51R	HC080080E52R	250W		√	√
10in (25.4cm)	HC100100E51R	HC100100E52R	393W		√	√
12in (30.5cm)	HC120120E51R	HC120120E52R	565W		√	√
15in (38.1cm)	HC150150E51R	HC150150E52R	884W		√	√
18in (45.7cm)	HC180180E51R	HC180180E52R	1272W		√	√

¹Standard Sizes to be included with Hot Bonder Purchase. Please specify requirement - 120V or 220V

Heat Blankets

Specifications:

Maximum Width - 39in (99.1cm) Unspliced
Maximum Length - 138in (350.5cm) Unspliced
Maximum Temperature - 450°F (232°C)
Watt Density - 5 W/in ² (0.8 W/cm ²)
Standard Material - Unsupported silicone rubber
Standard Leads - Teflon® insulated 600V/ 400°F (204°C)
Standard Lead Length - 5ft (1.52m)
Standard Input Power - 120V or 220/240V (others available)
External Tabs - increase heating area
CE Conformity
Dimensional Tolerance - ± 1%
Featured Options:
Plugs - for various applications and power sources

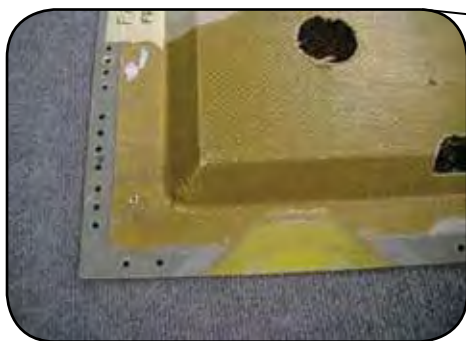
Our stretchable heat blankets are specifically designed for the repair of complex 3D composite shapes or contoured surfaces. The design employs a grid of wound resistance wire vulcanized between durable unsupported silicone rubber.

Compared to traditional material used for stretchable heat blankets, we are now using Mosites Rubber Company, Inc. material that features improved strength, flexibility, and durability. In combining Heatcon's technology with Mosites material it upgrades the most important property of the stretchable heat blanket which is providing a greater degree of conformability.

The unique construction of our stretchable heat blankets allows you to apply uniform heat exactly where you want it.

- TEAR RESISTANT**
- FLASH TAPE COMPATIBILITY**
- FITS INTO TIGHT RADIUS**
- UNIQUE CONSTRUCTION**

Complex Problem



**Stretchable Heat Blankets
are the Innovative Solution**

Heat Blankets

Normally Stocked Stretchable Heat Blanket Assortment 120V / 220V

Description	Part Number 120V	Part Number 220V	Watts	Heat Mapping
6in x 6in (15.2cm x 15.2cm)	HC060060E51E1	HC060060E52E1	180W	√
8in x 8in (20.3cm x 20.3cm)	HC080080E51E1	HC080080E52E1	320W	√
10in x 10in (25.4cm x 25.4cm)	HC100100E51E1	HC100100E52E1	500W	√
12in x 12in (30.5cm x 30.5cm)	HC120120E51E1	HC120120E52E1	720W	√
15in x 15in (38.1cm x 38.1cm)	HC150150E51E1	HC150150E52E1	1125W	√
18in x 18in (45.7cm x 45.7cm)	HC180180E51E1	HC180180E52E1	1620W	√
18in x 24in (45.7cm x 60.9cm)	HC180240E51E1	HC180240E52E1	2160W	√
24in x 24in (60.9cm x 60.9cm)	HC240240E51E1	HC240240E52E1	2880W	√

HEAT BLANKETS

Thermal Uniformity Testing

The quality of the repair can, in many cases, be traced back to the quality of the cure. A heat blanket that provides temperature uniformity over the entire surface is a key step in the repair process.

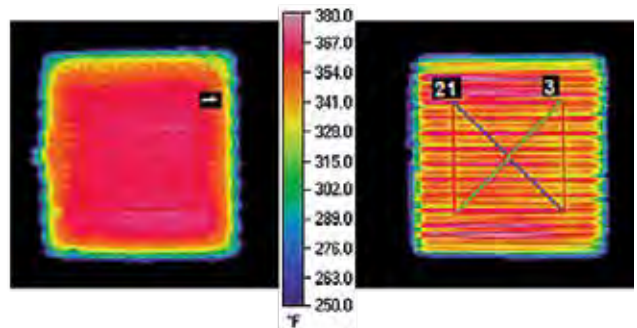
Thermal mapping is becoming the quality standard for many maintenance facilities. The Commercial Aircraft Composite Repair Committee (CACRC) refers to SAE Document ARP 5144 Section 7, which states specific recommendations for the handling, maintenance and thermal testing of heat blankets.

Our testing follows the recommendations of SAE Document ARP 5144. HEATCON is a Boeing authorized and formally delegated supplier of Thermal Uniformity Testing qualified per Appendix A of Boeing Specification D6-56273.

This additional quality process can be specified for most of your Silicone Rubber Heat Blankets at an additional charge and includes the following services:

- Supply of heat blankets that are pre-qualified
- Qualification and Re-Qualification services for HEATCON heat blankets

Please contact us for a quote.



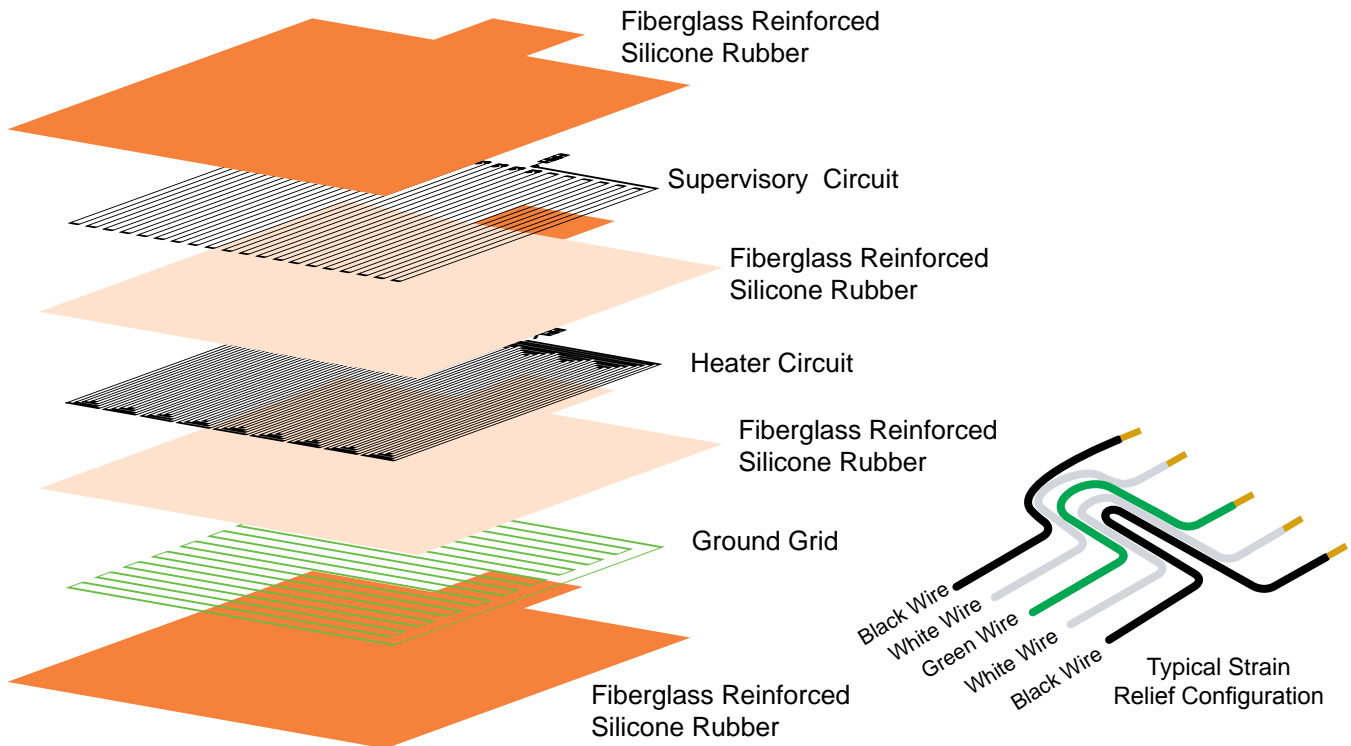
Infrared thermal image displays HEATCON heat blanket (left side) compared to competitor's heat blanket (right side). Temperature uniformity across the surface of the heat blanket is illustrated by the color gradient scale.

Our Heat Blankets have Superior Thermal Uniformity

Heat Blankets

Supervisory Heat Blankets are used when performing a composite repair in a hazardous or flightline environment. These blankets have a very unique construction that includes an additional supervisory temperature sensing circuit to effectively reduce hazardous situations in a vapor volatile environment.

The Supervisory Heat Blankets are designed to be used with our HCS9000/9200FL (Flightline) Series Composite Repair Systems. If the blanket sensor detects a high cure temperature, the controller will disable the power output to the blanket. The circuit will then reset itself when the temperature falls below the critical level. An indicator and alarm on the HEATCON® Flightline Repair System will alert the operator to the condition.



HEAT BLANKETS

Supervisory Heat Blanket Assortment 120V / 220V

Description	Part Number 120V	Part Number 220V
8in (15.2cm) Diameter	HC080080M51R-X	HC080080M52RX
10in (25.4cm) Diameter	HC100100M51R-X	HC100100M52RX
12in x 12in (30.5cm x 30.5cm)	HC120120M51X	HC120120M52X
8in x 18in (15.2cm x 45.7cm)	HC080180M51X	HC080180M52X
6in x 6in (15.2cm x 15.2cm)	HC060060M51X	HC060060M52X
10in x 10in (25.4cm x 25.4cm)	HC100100M51X	HC100100M52X
15in x 15in (38.1cm x 38.1cm)	HC150150M51X	HC150150M52X

Heat Blankets

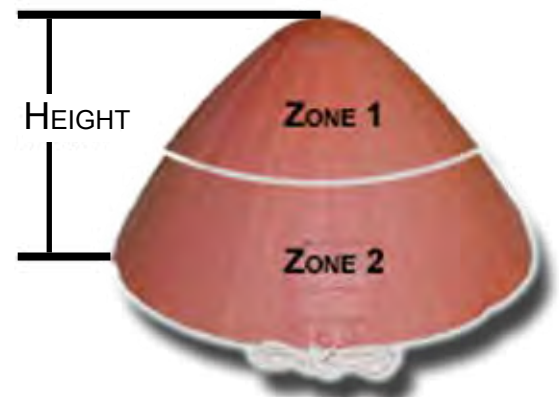
HEAT BLANKETS

Standard - 220 Volt - Two Zone Radome Stock					
Aircraft Model	Part Number	Height (inches)	Watt Density	Wattage Zone 1	Wattage Zone 2
B707/727/737	HC737130G42Z2	13in (33.02cm)	4	1936W	2720W
B747	HC747130G42Z2	13in (33.02cm)	4	2500W	5493W
B757	HC757130G42Z2	13in (33.02cm)	4	1936W	2596W
B767/777	HC777130G42Z2	13in (33.02cm)	4	2500W	5493W
A300/310/330/340	HCA30130G42Z2	13in (33.02cm)	4	1936W	2944W
A318/319/320/321	HCA32130G42Z2	13in (33.02cm)	4	1936W	5492W
DC9/MD80/MD90	HCM80100G42Z2	10in (25.4cm)	4	1936W	2944W
RJ200	HCRJ2220GX2Z2H	22in (55.88cm)	5 / 4	2446W	2545W
B787 - Inner	HC0693	12in (30.48cm)	4	2500W	4936W
B787 - Outer	HC787120G42Z2	12in (30.48cm)	4	2500W	5306W

Note: plug not included

Capabilities:

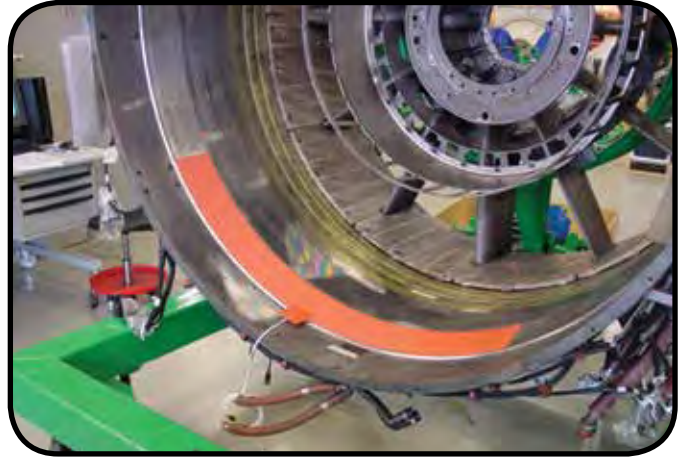
- Standard Configuration for Boeing, Airbus, and McDonnell-Douglas
- Custom Radome heat blankets available for any aircraft
- Repair side is made of one piece of silicone, to eliminate mark-off from seams, creating an exact fit
- Storage fixture available
- Single or Dual Zone
- Uniform heat



2 ZONE CONFIGURATION

Heat Blankets

HEATCON Composite Systems has the knowledge and expertise to provide solutions for all your Abradable/Fan Track seal replacement challenges. With our state-of-the-art hot bonders and custom designed fan track heat blankets, your seal replacement will be done right the first time, every time. HEATCON Composite Systems has a proven track record for successful repairs on the following engine series: RB211, V2500, CFM56.



HEAT BLANKETS

Worksheet

Simply supply us with the details listed below, and we'll begin designing the blankets to suit your specific needs.

Inside Circumference	
Outside Circumference	
Width	
Lead Length	
Input Voltage	
Watt Density	

You Know the Problem!

We Know the Solution!

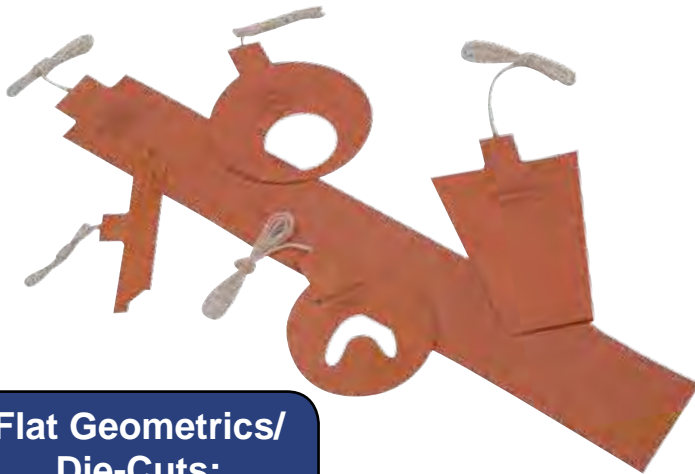
**LET US DESIGN A
CUSTOM PACKAGE FOR
YOU!**

Capabilities:

- Standard Configurations for
 - RB211
 - V2500
 - CFM56
 - Single or Multiple Zone Heat Blankets
 - Bagging Materials
- Custom Package Available Upon Request**

Heat Blankets

HEAT BLANKETS



**Flat Geometrics/
Die-Cuts:
Various Shapes &
Cut-Out Blankets**



3-D: Radome Heat Blanket



**Contoured:
Leading Edge & Angled
(V-Shaped) Blankets**

The need for custom shaped, flexible heat blankets in composite repair has increased dramatically in recent years with all of the emerging applications being performed. HEATCON Composite Systems® has both the experience and capability to meet all of your custom heat blanket requirements from design to delivery.

Our Design Capabilities Include:

- Flat Geometrics/Die-Cuts
- 3D - An excellent example for a 3-D heat blanket application is a radome repair. The nose cone, or radome, of an airplane is a highly sensitive and odd shape which requires a heat blanket designed for very specific form.

Radome Capabilities:

Custom configurations available

Contours:

Some application examples for contoured heat blankets include: leading edge, trailing edge, propeller, rotor, flap, fan-track and fan-cowl repairs.

Worksheet

Simply supply us with the details listed below, and we'll begin designing the blankets to suit your specific needs.

Width	
Length	
Lead Length	
Input Voltage	
Watt Density - 1 to 5 W/in ²	
Dimensional Drawings	

Note: All tabs are centered unless otherwise specified

Our Process

HEATCON Composite Systems® can manufacture custom Heat Blankets to fit your specific needs. Using your part, we produce a finished Heat Blanket with our unique fabrication processes.

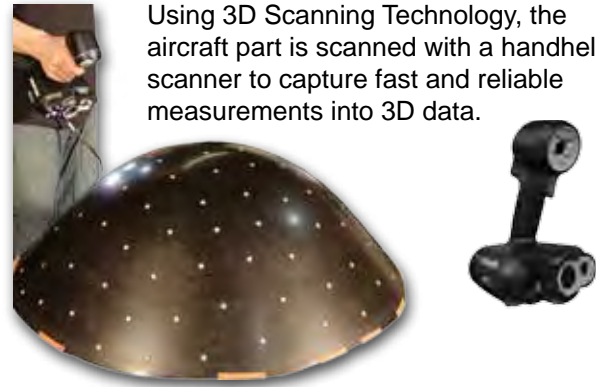
1. Aircraft Part

Supply us with your part or with a tooling “splash”



2. Scan Part

Using 3D Scanning Technology, the aircraft part is scanned with a handheld scanner to capture fast and reliable measurements into 3D data.



3. Custom Tooling

Custom high temperature tool is produced to fabricate the heat blanket. This is used during the manufacturing and curing process of the heat blanket.



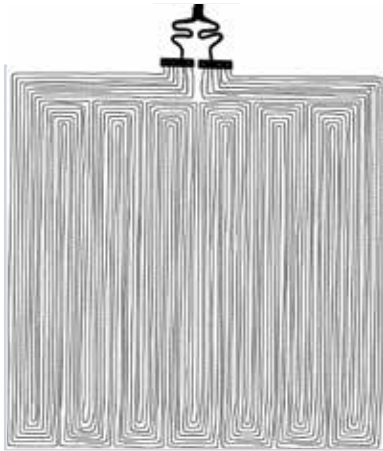
4. Finished Heat Blanket

The finished heat blanket is an exact fit to your supplied part or tooling “splash”.

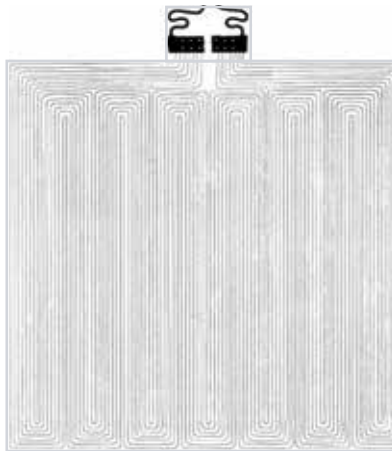


Heat Blanket Construction

Heat Blanket Circuit Spacing & Quality Comparisons



Competitor "A" Heat Blanket



HEATCON Composite Systems®
Heat Blanket

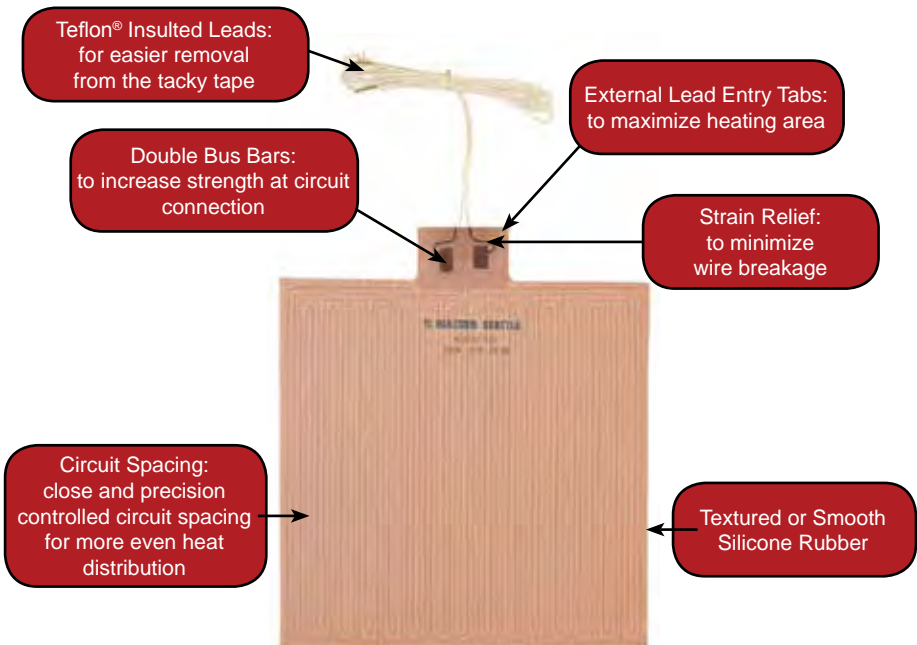
A Quality Difference:

Non-uniform heating by a heat blanket is generally caused by one of two factors, poor quality construction or improper handling. HEATCON Composite Systems® has the solution to both issues.

The most effective means to evenly distribute heat is by placing the heater wires closer together. Poorly designed heat blankets have circuit spacing of often 0.5in (12.7mm) or more, whereas our blankets have a circuit spacing of 0.15in (3.81mm) on average.













We have also addressed the improper handling factor by incorporating a strain relief in the power-lead entry tab, using special eyelet crimping techniques and utilizing double buss bars which minimize open circuits at the buss bar connection. Computer-generated circuitry optimizes circuit design to create even heat distribution. Our standard leads are Teflon® insulated for easy removal, from the tacky tape, after a repair.

HEATCON Composite Systems® Standard Quality Features



HEAT BLANKETS

Plugs and Receptacles

Heat Blanket Accessories								
Description	Image		Part Number	Application	Volts	Amps	NEMA	Max. Wattage
Straight Blade Plugs			HCS1201	For standard use	125V	15A	5-15	1800W
Straight Blade Plugs			HCS1202	For standard use with higher voltage	250V	15A	6-15	3600W
Straight Blade Receptacles - Female			HCS1213	Used to extend cables	125V	15A	5-15	1800W
Straight Blade Receptacles - Female			HCS1219	Used to extend cables	250V	15A	6-15R	3600W
Twist Lock Plugs			HCS1204	Used primarily in school applications to prevent burnout of blankets	125V	15A	L5-15P	1800W
Twist Lock Plugs			HCS1205	Used with large Heat Blankets	125V	30A	L5-30P	3600W

Note: Other Plugs and Receptacles also available.

Plugs and Receptacles

HEAT BLANKETS

Heat Blanket Accessories								
Description	Image		Part Number	Application	Volts	Amps	NEMA	Max. Wattage
Twist Lock Plugs			HCS1207		250V	15A	L6-15P	3600W
Twist Lock Plugs			HCS1209	Used when high amps are required	250V	30A	L6-30P	7200W
Twist Lock Receptacles - Female			HCS1208	Used to extend cables	250V	30A	L6-30R	
3-Pin Connector - B-Model Repair Part			HCS1223 CA3108E-19PB	Connects directly to Composite Repair Units or used as a HCS9000B /9200B-Model output cable repair part.	120/ 240V	30A		
3-Pin Connector Supervisory Plug			HCS1211	Connects directly to Composite Repair Units (<i>supervisory blankets only</i>)	120/ 240V	30A		
2-Pin Connector Supervisory			HCS1009-060	Connects directly to Composite Repair Units (<i>supervisory blankets only</i>)	120/ 240V	13A		
Cable Clamp			HCS1009-061	Connects directly to Composite Repair Units (<i>supervisory blankets only</i>)	120/ 240V	13A		

Note: Other Plugs and Receptacles also available.

Material Services

HEATCON Composite Systems provides the full solution to conduct composite repairs. In addition to equipment, we offer and stock a wide range of material types that best fits your repair applications. In compliance with industry standards, all materials are inspected and arrive to your dock with the appropriate quality assurance paperwork. We specialize in small cuts and support full roll orders.

As an authorized distributor for our partners HEXCEL, 3M, and a small quantity supplier for Toray, we offer the complete package for composite repair needs, making HEATCON your one source to complete the task at hand.

ISO 9001:2015, AS9100D, AS9120B CERTIFIED

List of Material Offered

- **Adhesives**
 - Epoxy
 - Film
 - Foam
- **Dry Fabric**
 - Fiberglass
 - Carbon Fiber
 - Kevlar
- **Fillers**
- **Flash Tape**
- **Honeycomb**
- **Prepreg**
 - Carbon Fiber
 - Fiberglass
 - Kevlar
- **Primers**
- **Resin Kits**
- **Sealant Tape**
- **Surface Treatment**
- **Vacuum Bagging Consumables**
- **Aluminum Foil**
- **Pre-formed Core**



Frozen Material - Packaging

Our frozen material shipments are packaged in an insulated box with dry ice and suspended in an inner box **to ensure that your material meets aerospace packaging specifications and will remain at the required recommended temperatures.** Trip recorders are also added to record material out-time while in transit. Our detailed service will save you time and money, with little or no wasted material.

Small Quantities

Prepreg repair materials typically have a nine to twenty-four month shelf-life. For many facilities, a full roll of materials would not be used in this time-frame and the excess would have to be thrown away. Buying from the manufacturer can take months of waiting for delivery with large minimum order requirements. For these reasons, we provide material in large (full roll) or small (by the yard) quantities. All of our materials are inspected prior to shipping and packed in dry ice with the appropriate quality assurance paperwork, (Certificate of Conformance, Material Safety Data Sheets and IATA forms, which support dangerous goods).

We offer the following quantities for most repair materials:

- 5 yard cut
- 10 yard cut
- Full Roll (sizes depend on the type of material)

Aircraft on Ground (A.O.G.)

As an added service to our customers, we offer A.O.G. priority service for composite repair materials. Contact us if you have a grounded aircraft, or a work stoppage due to material requirements. We can have a shipment of the material you require, in the quantity you need, on the way to your facility the same day we receive your purchase order. A.O.G. orders must be received by 11:00am (PST) in order to allow sufficient processing time for same-day-shipment. International A.O.G. priority shipments are subject to space availability on the next flight out. The use of a customs broker is recommended to avoid unnecessary delays. An additional A.O.G. fee may also apply.

Material Recertification

HEATCON Composite Systems offers material recertification testing for Boeing Material Specification (BMS) materials.

This testing will often allow material to be recertified to extend the original shelf life. Test reports are issued directly by Boeing, providing you with the peace of mind and the assurance that your material has been properly handled.

Authorized Distributor

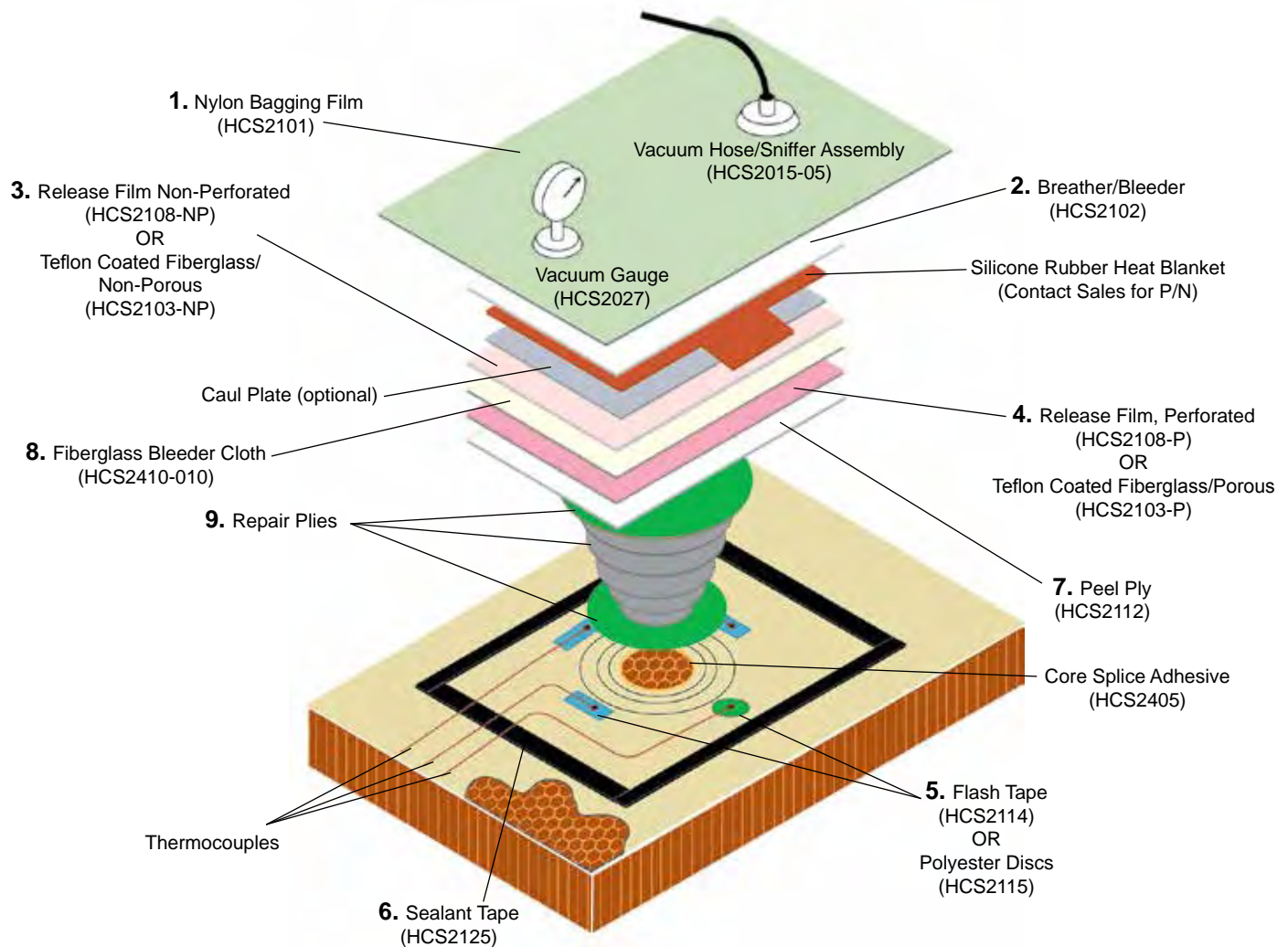
Heatcon Composite Systems is an authorized distributor for HEXCEL and 3M. We are also a small quantity supplier for Toray. All material is packaged and sent per the manufacturer's specification.



Toray Composite Materials America, Inc.

MATERIALS

Pre-assembled Kits



MATERIALS

This kit provides everything that is required for temporary and permanent repair of composite structures assembled in one convenient kit. Estimated coverage is nine repairs of 10in (25.4cm) in diameter. Other materials available upon request.

Note: Resin not included. Please call for pricing and delivery.

Pre-assembled Kits

Bagging Kit - HCS2510-09				
Item Number	Part Number	Description	Size	Qty
1	HCS2101-04-60V	Bagging Film, Nylon	30in (Open 60in) x 333 yds Wide (76.2cm (1.52m) x 304.5m)	3yds (27m)
2	HCS2102-10	Breather/Bleeder (10oz)	60in x 36in (152.4cm x 91.44cm)	1yd (0.9m)
3	HCS2108-NP	Release Film, Non-Perforated	48in x .001in (121.9cm x .025mm)	1yd (0.9m)
4	HCS2108-P	Release Film, Perforated	48in x .001in x .045in (121.9cm x .025mm x 0.114cm)	1yd (0.9m)
5	HCS2114	Flash Tape	1in x 72yds x .0025in (2.54cm x 6583.68cm x .228cm)	1 Roll
6	HCS2125	Sealant Tape, Tacky Tape	0.125in x .5in x 25ft (11.43cm x 1.3cm x 762cm)	2 Rolls
7	HCS2112	Peel Ply, Nylon	46in x .005in (116.84cm x .12mm)	1yd (0.9m)
8	HCS2410-010	Fiberglass Bleeder Cloth	38in x .0045in (96.5cm x .11mm)	1yd (0.9m)

Bagging Kit Dimensions: 29in x 10in x 9.5in (73.7 cm x 25.4 cm x 24.1 cm)
Shipping Weight: 7lbs (3.2kg)

MATERIALS

Repair Plies and Bagging Kit					
Item Letter	Part Number ¹	Material	Description	Size	Qty
a	HCS2510-10	BMS9-3	Dry Fiberglass Cloth (Style 7781, MIL-C-9084)	38in x .0089in (96.52cm x .22mm)	1yd (0.9m)
b	HCS2510-11	BMS9-8	Dry Graphite Cloth (Style 3K-70-PW TY1, CL2)	42in x .007in (106.68cm x .17mm)	1yd (0.9m)
c	HCS2510-12	BMS9-8	Dry Graphite Cloth (Style 3K-135-8H TY1, CL2)	42in x .0135in (1.06cm x .34mm)	1yd (0.9m)
d	HCS2510-13	Kevlar™ 49	Dry Kevlar™ Cloth (STYLE 120)	38in x .0040in (96.52cm x .1mm)	1yd (0.9m)
e	HCS2510-14	Kevlar™ 49	Dry Kevlar™ Cloth (STYLE 285)	38in x .010in (96.52cm x .25mm)	1yd (0.9m)

¹Repair Plies listed above include Bagging Kit (Items 1, 2, 3, 4, 5, 6, 7, 8)

Resin Kits

Used on wet lay-up and repair. These are two part epoxy paste adhesive/resin systems for potting, bonding, fairing and repair.

Typical Coverage for 50g (40/60 resin to fiber ratio)
24in x 24in (60.96cm x 60.96cm)
for style 7781 Fiberglass Cloth
6 - 8 repair plies 8in (20.32cm) diameter

- Practical
- No Waste
- Mix Only What is Required
- No Weighing



SAVE TIME AND MONEY!

Part Number	Specification Number (Mfr Part #)	Storage Temp	Mix Ratio	Size	Cure Time	Cure Temp
HCS2407-091	BMS8-301 (EY 3804)	Below 40°F (4°C)	100:66	50g	3 Hours	150°F (66°C)
HCS2407-101	BMS8-301 (EA 9390)	40°F (4°C)	100:56	50g	3-4 Hours	200°F (93°C)
HCS2407-131	(EA 934NA)	40°F (4°C)	100:33	50g	1 Hour	200°F (93°C)
					5-7 Days	77°F (25°C)
HCS2407-141	(EA 9394)	77°F (25°C)	100:17	50g	1 Hour	150°F (66°C)
					3-5 Days	77°F (25°C)
HCS2407-151	(EA 956)	40°F (4°C)	100:58	50g	1 Hour	200°F (93°C)
					5-7 Days	77°F (25°C)
HCS2407-161	(EA 9309.3NA)	35°F (1°C)	100:22	50g	1 Hour	180°F (82°C)
					3-5 Days	77°F (25°C)

Please contact us for current price and lead time. Minimum order may apply.
EPOCAST® is a registered trademark of Vantico A&T US Inc.

MATERIALS

Resins

Part Number	Specification (Mfr Part #)	Type	Class	Unit Size	Cure Temp
HCS2407-040	BMS8-201 (EPOCAST 50-A1/946)	4	N/A	Quart Kit (0.9463L)	150°F - 100°F (66°C - 93°C) After RT Gel
HCS2407-060	BMS8-201 (EPOCAST 50-A1/9816)	3	N/A	Quart Kit (0.9463L)	150°F - 200°F (66°C - 93°C) After RT Gel
HCS2407-090	BMS8-301 (EY 3804 A/B)	N/A	2	Quart Kit (0.9463L)	150°F (66°C)
HCS2407-100	BMS8-301 (EA9390)	N/A	1	Quart Kit (0.9463L)	200°F - 300°F (93°C - 149°C)

Carbon Fiber Prepreg

Carbon Fiber

Part Number	Manufacturer (Mfr Part #) ²	Specification	Type	Class	Grade/ Style/Form	Nominal Cured Thickness	Roll Size ¹	Cure Temp
HCS2402-015	HEXCEL (F155-76)	BMS8-168	II & III	2	Style 3K-70-PW	.0086in (0.2184mm)	42in x 75yds (106.68cm x 68.58m)	250°F (121°C)
HCS2402-025	HEXCEL (F263-8)	BMS8-212	IV	2	Style 3K-70-PW	.0083in (0.2108mm)	42in x 75yds (106.68cm x 68.58m)	350°F (177°C)
HCS2402-035	HEXCEL (F263-7)	BMS8-212	III	2	Style 3K-135-8H	.0141in (0.3581mm)	42in x 75yds (106.68cm x 68.58m)	350°F (177°C)
HCS2402-040	CYTEC (CYCOM 934/PWC T300 3K UT)	BMS8-256	IV	2	Style 3K-70-PW	.0085in (0.2159mm)	42in x 80yds (106.68cm x 73.15m)	350°F (177°C)
HCS2402-050	CYTEC (CYCOM 934/PWC T300 UT)	BMS8-297	IV	2	Style 3K-70-PW	.0083in (0.2108mm)	60in x 65yds (152.4cm x 59.43m)	350°F (177°C)
HCS2402-060	CYTEC (CYCOM 934/PX T300 ST)	BMS8-297-2	IV	2	Style 3K-70-PX	.0083in (0.2108mm)	60in x 65yds (152.4cm x 59.43m)	350°F (177°C)
HCS2402-070	CYTEC (CYCOM 934/8HS T300 ST CCF)	BMS8-297	III	2	Style 3K-135-8H	.0150in (0.3810mm)	60in x 50yds (152.4cm x 45.72m)	350 F (177°C)
HCS2402-M20	HEXCEL (M20/G904)	BMS8-340 & AMS-3970	I	1	Style 3K-70-PW	.0037in (0.094mm)	42in x 50yds (106.68cm x 45.72m)	250°F (121°C)
HCS2402-086	Toray (F6273-30K-965)	BMS8-276	40	2	Style 12K-70-PW/ Form 4	.0084in (0.213mm)	38in x 61yds (96.52cm x 55.77m)	350 F (177°C)
HCS2402-090	Toray (FM6673G-37KT-229)	BMS8-276	40	6	Style 6K-70-PW/ Form 1	.0086in (0.2184mm)	9in x 664yds (22.86cm x 607.16m)	350 F (177°C)
HCS2402-091	Toray (FM6673G-37KT-305)	BMS8-276	40	6	Style 6K-70-PW/ Form 1	.0086in (0.2184mm)	12in x 320yds (30.48cm x 292.61m)	350 F (177°C)
HCS2402-092	Toray (FM6673G-37K-965)	BMS8-276	40	2	Style 6K-70-PW/ Form 1	.0086in (0.2184mm)	38in x 83yds (96.52cm x 75.89m)	350 F (177°C)
HCS2402-093	Toray (FM6673G-37KT-965)	BMS8-276	40	2	Style 6K-70-PW/ Form 1	.0086in (0.2184mm)	38in x 83yds (96.52cm x 75.89m)	350 F (177°C)
HCS2402-094	Toray (FL6676G-37E-965)	BMS8-276	40	5	Style 6K-70-PW-PB4, IWWF/ Form 1	.0089in (0.226mm)	38in x 132yds (96.52cm x 120.70m)	350 F (177°C)
HCS2402-095	Toray (FL9673G-37KT-229)	BMS8-276	40	6	Style 6K-70-PX/ Form 1	.0086in (0.2184mm)	9in x 266yds (22.86cm x 243.23m)	350 F (177°C)
HCS2402-096	Toray (FL9673G-37KT-305)	BMS8-276	40	6	Style 6K-70-PX/ Form 1	.0086in (0.2184mm)	12in x 270yds (30.48cm x 246.88m)	350 F (177°C)
HCS2402-097	Toray (FL9673G-37KT-953)	BMS8-276	40	2A	Style 6K-70-PX/ Form 1	.0086in (0.2184mm)	38in x 159yds (96.52cm x 145.39m)	350 F (177°C)
HCS2402-080	Toray (P2352W-19-152)	BMS8-276	35	11	GR 190/ Form 3	.0075in (0.190mm)	6in x 462yds (15.24cm x 422.45m)	350 F (177°C)
HCS2402-081	Toray (P2352W-19-229)	BMS8-276	35	11	GR 190/ Form 3	.0075in (0.190mm)	9in x 277yds (22.86cm x 253.29m)	350 F (177°C)
HCS2402-082	Toray (P2352W-19-305)	BMS8-276	35	11	GR 190/ Form 3	.0075in (0.190mm)	12in x 280yds (30.48cm x 256.03m)	350 F (177°C)
HCS2402-083	Toray (P2352W-19-610)	BMS8-276	35	10	GR 190/ Form 3	.0075in (0.190mm)	24in x 284yds (60.96cm x 259.69m)	350 F (177°C)
HCS2402-084	Toray (P2352W-19-1540)	BMS8-276	35	10	GR 190/ Form 3	.0075in (0.190mm)	60in x 120yds (152.4cm x 109.73m)	350 F (177°C)

MATERIALS

NOTE: All quoted material subject to availability. Please call for pricing and delivery. Other specifications available upon request.

¹ Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order. ² Dry Ice and Trip Recorders required per certification.

Fiberglass and Kevlar™ Prepreg

Fiberglass

Part Number	Manufacturer (Mfr Part #) ²	Specification	Type	Class	Grade/ Style/Form	Nominal Cured Thickness	Roll Size ¹	Cure Temp
HCS2401-015	HEXCEL (F155-5)	BMS8-79	N/A	III	Style 120	.0047in (0.12mm)	38in x 100yds (96.52cm x 91.44m)	250°F (121°C)
HCS2401-025	HEXCEL (F155-5)	BMS8-79	N/A	III	Style 1581	.0095in (0.2413mm)	38in x 65yds (96.52cm x 59.44m)	250°F (121°C)
HCS2401-035	HEXCEL (F155-5)	BMS8-79	N/A	III	Style 7781	.0095in (0.2413mm)	38in x 65yds (96.52cm x 59.44m)	250°F (121°C)
HCS2401-045	HEXCEL (F161-108)	BMS8-139	N/A	1	Style 120	.0045in (0.1143mm)	38in x 100yds (96.52cm x 91.44m)	350°F (177°C)
HCS2401-055	HEXCEL (F161-108)	BMS8-139	N/A	1	Style 1581	.0095in (0.2413mm)	38in x 60yds (96.52cm x 54.86m)	350°F (177°C)
HCS2401-060	CYTEC (MXB7668/7781)	BMS8-139	N/A	1 & 2	Style 7781	.0095in (0.2413mm)	38in x 60yds (96.52cm x 54.86m)	350°F (177°C)
HCS2401-075	HEXCEL (F161-138)	BMS8-154	III	1	Style 6581	.0084in (0.213mm)	38in x 60yds (96.52cm x 54.86m)	350°F (177°C)
HCS2401-M20	HEXCEL (M20/120)	BMS8-340 & AMS-3970	III	2	Style 120	.0083in (0.211mm)	50in x 65yds (127cm x 59.44m)	250°F (121°C)
HCS2401-076	Toray (FGF108-29M-990)	BMS8-331	42	1	Style 108/ Form 1	.0018in (0.045mm)	39in x 214yds (99.06cm x 195.68m)	350°F (177°C)

Kevlar™

Part Number*	Manufacturer (Mfr Part #) ²	Specification	Grade/ Style/Form	Nominal Cured Thickness	Roll Size ¹	Cure Temp
HCS2403-015	HEXCEL (F155-71)	BMS8-219	Style 285	.010in (0.254mm)	38in x 65yds (96.52cm x 59.44m)	250°F (121°C)

NOTE: All quoted material subject to availability. Please call for pricing and delivery. Other specifications available upon request.

¹ Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order. ² Dry Ice and Trip Recorders required per certification.

Adhesive Film

Part Number	Manufacturer (Mfr Part #) ²	Specification	Type	Class	Grade/ Style/Form	Material Weight	Roll Size ¹	Cure Temp
HCS2404-010	3M (AF163-2K)	BMS5-101	2	N/A	Grade 10	.060lb/ft ² (0.293kg/m ²)	36in x 50yds (91.44cm x 45.72m)	250°F (121°C)
		BMS5-129	4	IID	Grade 10			
HCS2404-030	3M (AF-126-2)	BMS5-129	2	IIA	Grade 5	.030lb/ft ² (0.146kg/m ²)	36in x 36yds (91.44cm x 32.92m)	250°F (121°C)
HCS2404-040	Cytec (FM-123-5)	BMS5-129	2	2C	Grade 10	.060lb/ft ² (0.293kg/m ²)	36in x 55yds (91.44cm x 50.29m)	250°F (121°C)
HCS2404-050	Cytec (1515-4M)	BMS5-154	2 & 3	1 & 2	Grade 5	.050lb/ft ² (0.244kg/m ²)	36in x 55yds (91.44cm x 50.29m)	350°F (177°C)
HCS2404-060	Cytec (FM355)	BMS8-145	1	N/A	N/A	.075lb/ft ² (0.366kg/m ²)	48in x 50yds (121.92cm x 50.29m)	350°F (177°C)
HCS2404-100	3M (AF131-2)	BMS8-145	1	N/A	N/A	.075lb/ft ² (0.366kg/m ²)	40in x 36yds (101.6cm x 32.9m)	350°F (177°C)
HCS2404-190	3M (AF163-2OST)	BMS5-101	2	N/A	Grade 5	.030lb/ft ² (5.5mm)	36in x 50yds (91.44cm x 50.29m)	250°F (121°C)
HCS2404-070	3M (AF163-2K)	BMS5-101	2	N/A	Grade 15	.085lb/ft ² (0.415kg/m ²)	36in x 50yds (91.44cm x 45.72m)	250°F (121°C)
HCS2404-186	3M (AF163-2OST)	BMS5-101	2	N/A	Grade 10	.060lb/ft ² (0.293kg/m ²)	36in x 50yds (91.44cm x 45.72m)	250°F (121°C)
		BMS5-129	4	2D	Grade 10	.060lb/ft ² (0.293kg/m ²)		250°F (121°C)
HCS2404-207	3M (AF 30)	BMS5-42	2	N/A	Grade A	.050lb/ft ² (0.244kg/m ²)	20in x 72yds (50.8cm x 65.83m)	250/350°F (121/177°C)
HCS2404-208	3M (AF191K)	N/A	N/A	N/A	N/A	.080lb/ft ² (0.391kg/m ²)	36in x 50yds (91.44cm x 45.72m)	350°F (177°C)
HCS2404-218	3M (AF 3109-2U)	N/A	N/A	N/A	N/A	.035lb/ft ² (0.171kg/m ²)	48in x 25yds (121.92cm x 22.86m)	250/350°F (121/177°C)
HCS2404-219	3M (AF 3109-2K)	N/A	N/A	N/A	N/A	.085lb/ft ² (0.415kg/m ²)	48in x 25yds (121.92cm x 22.86m)	250/350°F (121/177°C)
HCS2404-087	3M (AF 163-2K)	N/A	N/A	N/A	N/A	.045lb/ft ² (0.219kg/m ²)	36in x 50yds (91.44cm x 45.72m)	250°F (121°C)

NOTE: All quoted material subject to availability. Please call for pricing and delivery. Other specifications available upon request.

¹ Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.
² Dry Ice and Trip Recorders required per certification.

MATERIALS

Epoxy Adhesive and Foam Adhesive

Epoxy Adhesive								
Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Grade/Style/Form/Rev	Packages Includes	Unit Size	Storage Temp
HCS2407-031	3M (EC 3587 B-1)	N/A	N/A	N/A	N/A	Part A & B	1 Quart (946mL) 2 PART KIT	60-80°F (16-27°C)
HCS2407-032	3M (EC 3587 B-1/4)	N/A	N/A	N/A	N/A	Part A & B	1 Quart (946mL) 2 PART KIT	60-80°F (16-27°C)
HCS2407-033	3M (EC 2216)	BMS5-92	1	4	N/A	Part A & B	1 Quart (946mL) 2 PART KIT	60-80°F (16-27°C)
HCS2407-035	3M (EC 3524 AN)	BMS5-28	9	N/A	N/A	Part A & B	1/2 Gallon (1.89L) 2 PART KIT	80°F (27°C)
HCS2407-038	3M (EC 3501)	N/A	N/A	N/A	N/A	Part A & B	1 Pint (470mL) 2 PART KIT	60-80°F (16-27°C)
HCS2407-045	3M (EC 3501)	N/A	N/A	N/A	N/A	Part A & B	2 fl oz Tube (59mL) 2 PART KIT	60-80°F (16-27°C)
HCS2407-039	3M (EC 3333)	BMS5-92 J	5	1	N/A	Part A & B	1 Quart (946mL) 2 PART KIT	80°F (27°C)
HCS2407-048	3M (EC 1300L)	BMS5-7	1	N/A	Rev G	1 Container	1 Quart (946mL)	60-80°F (16-27°C)
HCS2407-049	3M (EC 1660)	BMS5-42 V	1	2	N/A	1 Container	1 Gallon (3.785L)	40°F (4.4°C)

Foam Adhesive								
Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Grade/Style/Form/Rev	Nominal Cured Thickness/Weight	Unit Size	Cure Temp
HCS2405-010	CYTEC (FM490A)	BMS5-90	3	1	Grade 50	.05in (1.143mm) 0.395lb/ft ² (6.33kg/m ²)	Roll Size 1in x 25ft (2.54cm x 7.62m)	250/350°F (121/177°C)
HCS2405-040	HENKEL (EF562)	BMS5-90	III	1	Grade 50/ Rev W	.05in (1.143mm)	Sheet Size 1ft x 2ft (30.48cm x 60.96cm)	250/350°F (121/177°C)
		IPS 10-02-001-05	N/A	N/A	Grade B	.05in (1.143mm)	Sheet Size 1ft x 2ft (30.48cm x 60.96cm)	250/350°F (121/177°C)

NOTE: All quoted material subject to availability.
Please call for pricing and delivery.
Other specifications available upon request.

Surface Pre-Treatment

Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Grade/Rev Style/Form	Unit Size	Storage Temp
HCS2407-320	3M (AC 130-2)	BMS10-128	1	A	Grade A	50ml 2 PART KIT	40-100°F (4-38°C)
		BMS 5-162	N/A	N/A	Form 2S		
HCS2407-321	3M (AC 130-2)	BMS10-128	1	A	Grade A	100ml 2 PART KIT	40-100°F (4-38°C)
		BMS 5-162	N/A	N/A	Form 2S		
HCS2407-322	3M (AC 131 CB)	BMS10-128	1	A	Grade A	50ml 2 PART KIT	Room Temp
		AMS-3175	1	C	Grade I / Rev A		
HCS2407-323	3M (AC 131 CB)	BMS10-128	1	A	Grade A	100ml 2 PART KIT	Room Temp
		AMS-3175	1	C	Grade I / Rev A		
HCS2407-324	3M (AC 770 B-1)	BMS 5-142	2	B-1	Rev G	3.5oz 2 PART KIT	80°F (27°C)

Primers

Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Grade/Rev Style/Form	Unit Size	Storage Temp
HCS2406-011	CYTEC (BR127)	BMS5-89	1	N/A	Grade A	1 Gallon (3.785L)	0°F (-18°C)
HCS2406-019	3M (EC 3917)	N/A	N/A	N/A	N/A	1 Gallon (3.785L)	40°F (4.4°C)
HCS2406-020	3M (EC 3964)	N/A	N/A	N/A	N/A	1 Gallon (3.785L)	0°F (-18°C)
HCS2406-025	3M (EW 5000)	BMS 5-89	3	N/A	N/A	1 Quart (0.95L)	35-40°F (-15-4.4°C)
HCS2406-035	CYTEC (BR6747)	BMS 5-89	II	N/A	N/A	1 Pint (470mL)	40-50°F (4.4-10°C)
		BMS 5-137	I	3	N/A	1 Pint (470mL)	40-50°F (4.4-10°C)

Fillers and Potting Compound

Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Description	Unit Size
HCS2407-010	HUNTSMAN (CG 1305)	BMS5-28	7	1	Potting Compound Pourable	Gallon Kit (3.785L)
HCS2407-020	HUNTSMAN (EC 89537)	BMS5-28	7	2	Potting Compound Pourable	Gallon Kit (3.785L)
HCS2407-030	HUNTSMAN (EPOCAST 1511 A/B)	BMS5-28	3	N/A	Non Flow Edge Filler	Quart Kit (0.9463L)
HCS2201	WACKER	N/A	N/A	N/A	Resin Epoxy Filler/Fumed Silica	1 Gallon (3.785L)
HCS2202	3M (K1)	N/A	N/A	N/A	Lightweight Epoxy Filler/Micro Balloons	1 Gallon (3.785L)
HCS2202-01	Malayan Adhesives (BJO-0930)	N/A	N/A	N/A	Phenolic Micro Balloons	1 Gallon (3.785L)

Note: Minimum order may apply.

MATERIALS

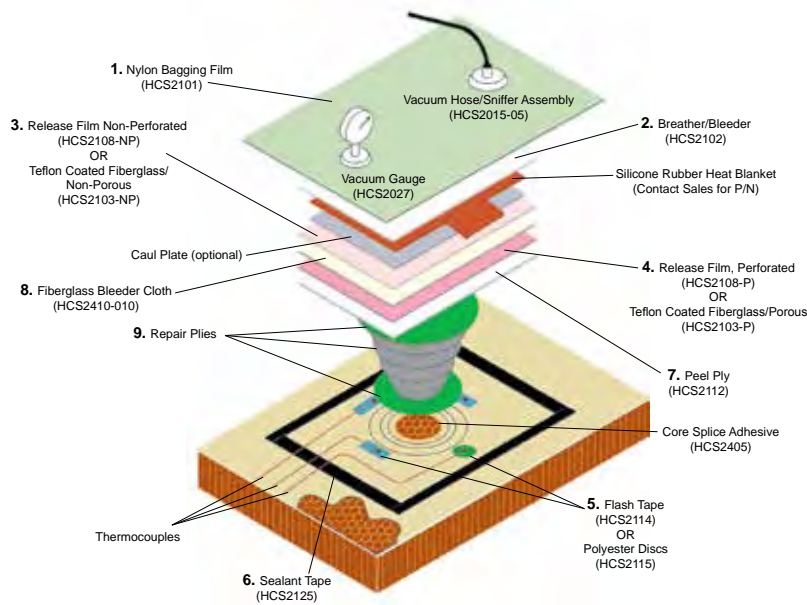
Fiberglass, Carbon, and Kevlar™ Dry Fabric

Fiberglass Dry Fabric							
Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Grade/Style/Form	Thickness	Roll Width ¹
HCS2410-010	HEXCEL (120-38)	BMS9-3	D	7	Style 120	3.5mils (.09mm)	38in (96.52cm)
HCS2410-020	HEXCEL (1581-38)	BMS9-3	H-2	7	Style 1581	8.5mils (0.22mm)	38in (96.52cm)
HCS2410-030	HEXCEL (7781-38)	BMS9-3	H-3	7	Style 7781	8.6mils (0.22mm)	38in (96.52cm)

Carbon Dry Fabric							
Part Number	Manufacturer (Mfr Part #)	Specification	Type	Class	Grade/Style/Form	Thickness	Roll Width ¹
HCS2409-010	Textile	BMS9-8	I	2	Grade 3 / Style 3K-135-8H	.0135in (0.3429mm)	42in (106.68cm)
HCS2409-020	HEXCEL (282-42)	BMS9-8	I	2	Grade 3 / Style 3K-70-PW	.007in (0.1778mm)	42in (106.68cm)
HCS2409-022	HEXCEL (282-50)	BMS9-8	I	2	Grade 3 / Style 3K-70-PW	.007in (0.1778mm)	50in (127cm)
HCS2409-031	HEXCEL (AH370-5H)	N/A	N/A	N/A	N/A	.015in (0.381mm)	39in (99.06cm)

Kevlar™ Dry Fabric					
Part Number	Manufacturer (Mfr Part #)	Specification	Style/Weave	Thickness Dry Nominal	Roll Width ¹
HCS2411-010	JPS	Kevlar™49	Style 350/Plain	3.3mils (.08mm)	38in (96.52cm)
HCS2411-035	JPS	Kevlar™49	Style 353/4H Satin	9.4mils (0.24mm)	50in (127cm)
HCS2411-040	JPS	Kevlar™49	Style 352/Plain	10mils (0.254mm)	38in (96.52cm)

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.
 Note: All quoted material subject to availability.
 Please call for pricing and delivery. Other specifications available upon request.



Vacuum Bagging Consumables are used in wet lay-up applications. Heatcon Composite Systems provides you the materials required in your bagging schedule to get the job done.

- Vacuum Bagging Consumables:**
- Nylon Bagging Film
 - Breather/Bleeder Cloth
 - Release Film Perforated or Non-Perforated
 - Teflon Release Fabric Porous or Non-Porous
 - Peel Ply
 - Flash Tape
 - Polyester Discs
 - Sealant Tape

Nylon Bagging Film

The HCS2101 Series Nylon Bagging Film is a high-grade nylon film which is heat-stabilized for long-term cures. The films are soft, pliable and ideal for high temperature composites, metal bonding and any function requiring heat and/or pressure. Nylon Bagging Film is the final layer of material that is applied during the repair process to form the vacuum bag.

Nylon Bagging Film Properties

Tensile Strength - 10,000psi -16,000psi	Fold Endurance - > 250,000 cycles
Elongation - 375-500%	Brittleness Temp - < 75°F
Graves Tear Strength - 500-600gms	Dimensional Stability (300°F, 10min) - < 2.0%
Elmerdorf Tear Strength - 20-50gms	Flammability Self Extinguishing

Part Number	Specification (Mfr Part #)	Type	Grade/Rev Style/Form	Nominal Thickness	Roll Size ¹	Maximum Use Temp.
HCS2101-04-5MIL	N/A	N/A	N/A	5mils (0.127mm)	54in x 167yds (137.2cm x 152.7m) 50 Yard Minimum Buy	400°F (204°C)
HCS2101-04-30T 30in TUBE	N/A	N/A	N/A	2mils (.0508mm)	30in Tube x 166yds (76.2cm x 151.8m)	400°F (204°C)
HCS2101-04-60V V-FOLD	N/A	N/A	N/A	2mils (.0508mm)	30in (Open 60in) x 333yds (76.2cm (1.52m) x 304.5m)	400°F (204°C)
HCS2101-38	BMS 5-121 (23030)	1	Rev C	3mils (.0762mm)	36in x 3000yds (91.44cm x 2743.2m) 10 Yard Minimum Buy	400°F (204°C)

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.

MATERIALS

Breather / Bleeder Cloth

The HCS2102 Series Breather/Bleeder Cloth is a needlepunch polyester breather system commonly used as a vacuum transfer medium in the vacuum bagging process. It can be used at pressures up to 85psi (5.8 bars). The HCS2102-04 cloth can be used at pressures up to 200psi (13.8 bars). Multidirectional conformability make it a very efficient breather. This cloth does not contain any binders which could seal off air flow. The breather is required for air evacuation while the bleeder system is required to absorb excess resin. Recommended maximum use temperature: 400°F (204°C).

Part Number	Weight	Roll Size ¹
HCS2102-04	4oz (113.4g)	60in x 100yds (152.4cm x 91.4m)
HCS2102-10	10oz (283.4g)	60in x 50yds (152.4cm x 45.7m)

Release Film

Release Film Properties

Specific Gravity - 2.12-2.17sq ft/lb	Elongation @ Break - 300%	Max Use Temp - 400°F (204.44°C)	Melt Point - 485-540°F
Yield (1 mil film) - 90sq ft/lb	Tensile Modulus - 70000psi	Flammability - Self Extinguishing	
Water Absorption - <0.01%	Initial Tear Strength - 1mil 0.5lb-0.6lb	Tensile Strength @ Break - 3500psi	

The **HCS2108-P Release Film** is a perforated, high-quality film made for contoured surfaces. This film is strong and has high elongation. Perforated Release Film is used as a porous release ply that allows volatile outgassing during processing.

Release Film - Perforated

Part Number	Thickness	Roll Size ¹	Resin Loss	Hole Size	Mark Off	Color
HCS2108-P (P3)	1mil (.001in)	48in x 200yds (121.9cm x 182.88m)	35%	0.015in (0.38mm) Diameter on .25in (0.63cm) Centers	None	Red
HCS2108-P4	1mil (.001in)	48in x 200yds (121.9cm x 182.88m)	.04%	0.045in (1.14mm) Diameter on 2.0in (5.08cm) Centers	None	Red
HCS2108-P5	1mil (.001in)	48in x 200yds (121.9cm x 182.88m)	.023%	0.045in (1.14mm) Diameter on 3.5in (8.89cm) Centers	None	Red

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.

The **HCS2108-NP Release Film** is a non-perforated, fluoropolymer release film for cures to 500°F (260°C). This film is an economical alternative to high-cost FEP release film. It is ideally used for flat or single contour lay-ups. Non-Perforated Release Film is used as a parting film.

Release Film - Non-Perforated

Part Number	Thickness	Roll Size ¹	Color
HCS2108-NP	1mil (.001in)	48in x 200yds (121.92cm x 182.88m)	Red

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.

Teflon® Release Fabric

The **HCS2103-P Release Fabric** is a porous release Teflon® coated fiberglass with the same porosity that will release from all commercial resin systems. Teflon® Coated Fiberglass/Porous Release Fabric is used as a release ply that allows outgassing of volatiles during processing.

The **HCS2103-NP Release Fabric** is a non-porous release Teflon® coated fiberglass designed for release and resin restriction. This fabric will release from all commercial resin systems without transfer. Non-Porous Teflon® Coated Fiberglass is commonly used as a parting film.

Release Fabric Teflon® - Porous

Part Number	Thickness	Roll Size ¹	Maximum Use Temp.
HCS2103-P	2mils (.002in), (0.05mm)	38in x 100yds (96.52cm x 91.4m)	550°F (288°C)

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.

Release Fabric Teflon® - Non Porous

Part Number	Thickness	Roll Size ¹	Maximum Use Temp.
HCS2103-NP	3mils (.003in), (0.08mm)	38in x 100yds (96.52cm x 91.4m)	550°F (288°C)

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.

Release Peel Ply

The HCS2112 Series Nylon Release Peel Ply is a heatset and scoured smooth weave nylon fabric used as a release fabric directly against bond lines or laminates where a finish for subsequent bonding or painting is needed. This Release Peel Ply is excellent for controlling adhesive squeeze out and works well on all fiber/epoxy laminates.

Part Number	Thickness	Weight	Roll Size ¹	Yarn Type
HCS2112	6mil (.006in)	2oz/yd ² (66.5g/sq.m)	46in x 300yds (121.9cm x 274.3m)	Nylon

¹Roll yardages vary. Five yard minimum order. Confirmation of approximate yardage supplied at time of order.

MATERIALS

Flash Tape

The HCS2114 Flash Tape is a polyester-backing film with a rubber adhesive. This tape is very tough and ideal for resin or adhesive flash removal.

Part Number	Case	Thickness	Roll Size	Maximum Use Temp.
HCS2114	36 Rolls	2.5mils (.06mm)	1in x 72yds (2.54cm x 65.8m)	Up to 400°F (204°C)
HCS2114-02	18 Rolls	2.5mils (.06mm)	2in x 72yds (5.08cm x 65.8m)	Up to 400°F (204°C)

Polyester Discs

The HCS2115 is a high temperature polyester disc that is ideal for thermocouple isolation on composite repairs.

Part Number	Size	Quantity per roll	Maximum Use Temp.
HCS2115-01	1in (2.54cm)	500	Up to 450°F (232°C)
HCS2115-02	1.25in (3.17cm)	500	Up to 450°F (232°C)

Sealant Tape

The HCS2125 Sealant Tape contains aggressive tack to hold vacuum bag to tools. Releases from metal or composite tools, hot cold. Ideal for standard 250°F (121°C) and 400°F (204°C) cures.

Part Number	Case	Roll Size	Maximum Use Temp.	Color
HCS2125	32 Rolls	0.125in x 0.5in x 30ft (3.18mm x 12.7mm x 9.14m)	450°F (232°C)	Black
HCS2125-02	32 Rolls	0.125in x 0.5in x 25ft (3.18mm x 12.7mm x 7.62m)	450°F (232°C)	Light Gray

Aluminum Foil

Part Number	Specification (Mfr Part #)	Type	Grade/ Style/Form	Size ¹	Cure Temp
HCS2408-010	BMS8-289	Ty 0/250/2/1235/002 Ty 0/350/2/1235/002	Grade B/ Form 1	36in x 1078sq ft (91.44cm x 100.15 sqm)	250°F / 350°F (121°C / 177°C)

¹Twelve square foot minimum order. Order in three square foot increments.

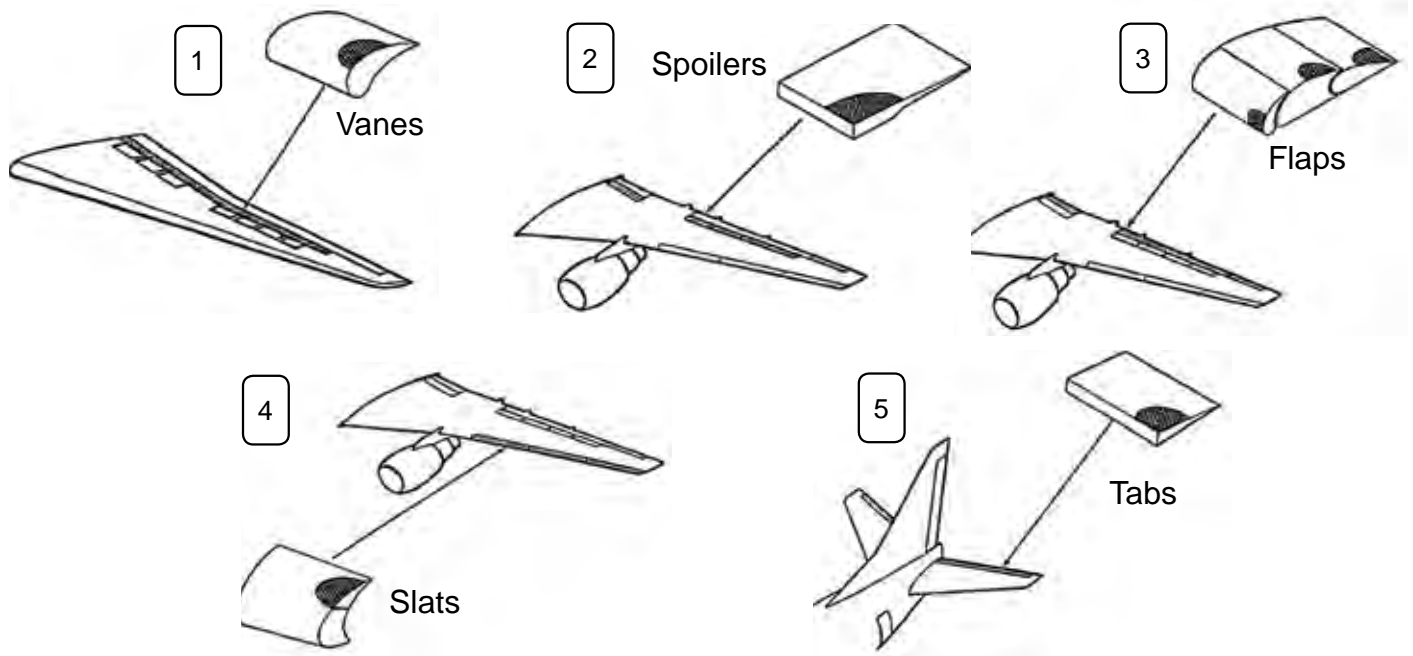
Pre-Formed Core Materials

Pre-formed core materials are machined to three-dimensional contour from aluminum or non-metallic honeycomb. It can be supplied with or without recesses or splice bonding.

Image	Style	Aircraft Models			
1	Vanes	DC9, DC10		MD11, MD80	
2	Spoilers	707, 727, 737	747, 757, 767	DC9, DC10	MD11, MD80, L1011
3	Flaps	707, 727, 737	747, 757	DC9, DC10, MD80	
4	Slats	727, 737		747, 767	
5	Tabs	707, 727, 737	747, 757	DC9, DC10, MD80	

Please call for part numbers, pricing and delivery.

Note: Among the many configurations available, machining is available for the following: Cargo Barrier Doors, Fan Casings, Rotor Blades, Trust Reversers, Cowl Doors and Blocker Doors.

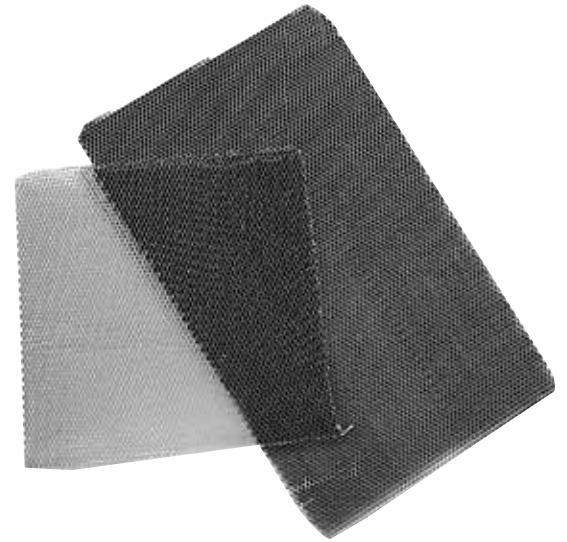
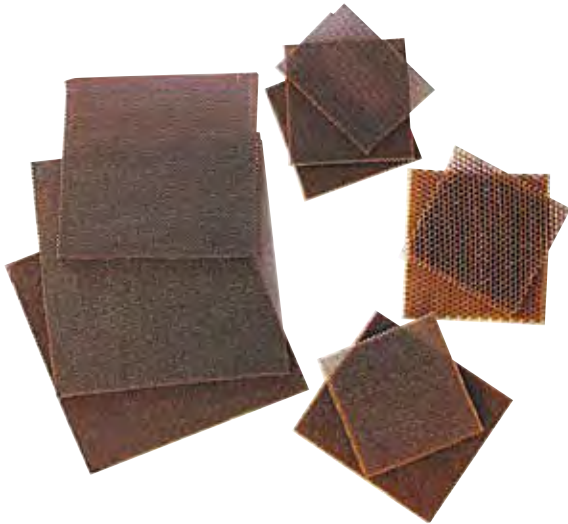


Aluminum and Non-Metallic

Tired of Long Lead Times and Buying in Full Sheets?

HEATCON Composite Systems® offers Metallic and Non-Metallic Honeycomb core by the square foot.

Please call for price and stock availability.



Non-Metallic Honeycomb Core

Aluminum Honeycomb Core

- HRH10* - Aramid Fiber/ Phenolic Resin
- HRH10* - Flex-Core
- HRP* - Reinforced Plastic Honeycomb
- Certified to the Boeing Material Specifications
- * Other types may also be available

Tack Rags



Carton Availability	
Part Number	Carton Quantity
HCS-C60-50	50
HCS-C60-100	100
HCS-C60-400	400

The HCS-C60 Tack Rag is used to remove dust from surfaces before coating or painting application. High quality cheesecloth is oil and wax free to resist surface contamination. The Tack Rag meets or exceeds many aerospace specifications. Sized at 30in x 36in (76.2cm x 91.4cm) the HCS-C60 is folded and packaged individually in sealed plastic bags.

Scrapers, Grip, and Sharpener

SkyMill™ Revolution by Elixair™ Sharpener

The SkyMill™ Revolution by Elixair™ Sharpener is a hand-held and durable sharpening machine used to sharpen the SkyScraper tools. The device is designed for low maintenance and fast emptying which can be quickly recharged. It enables the operator to remain by the job without the need for more tooling.



SkyMill Revolution/Sharpener

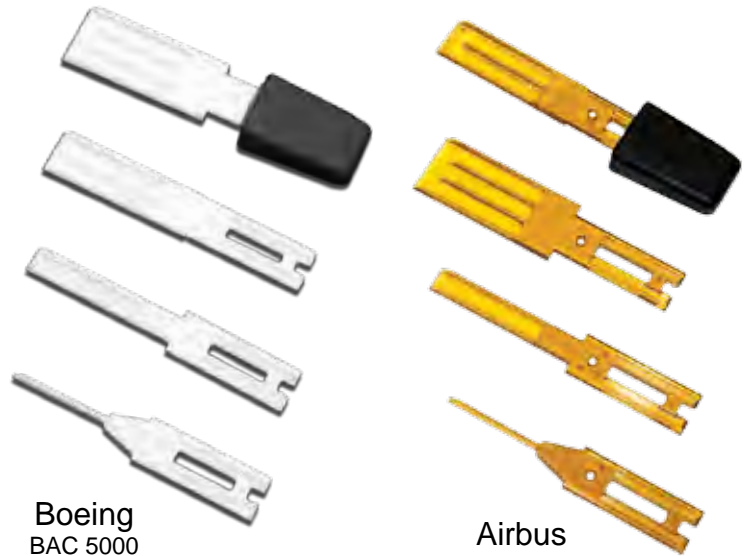
Part Number	Product ID	Qty
HCS2036-01-200	Airbus and Boeing 501/1	1

SkyScraper™ by Elixair

Save time and money with high performance scrapers which can be re-sharpened. The SkyScraper gently removes sealant, adhesive, and tape residue from most surfaces. Combined with the SkyGrip*, is an ergonomic option that provides increased worker comfort while improving safety. Multiple widths provide the right tool for the right job. Scrapers are approved by Boeing** and Airbus (see specifications). Four sizes are available.

*SkyGrip by Elixair attachment is sold separately

**SkyScrapers conform to Boeing BAC 5000



Boeing
BAC 5000

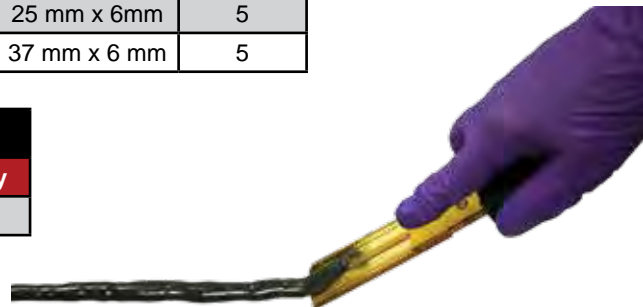
Airbus

SkyScraper by Elixair

Part Number	Product ID	Material	Color	Size	Minimum Buy Qty
HCS2036-01-191	Airbus 310/03	Ultem Plastic	Amber	3 mm x 6 mm	5
HCS2036-01-192	Airbus 310/14	Ultem Plastic	Amber	14 mm x 6 mm	5
HCS2036-01-193	Airbus 310/25	Ultem Plastic	Amber	25 mm x 6mm	5
HCS2036-01-194	Airbus 310/37	Ultem Plastic	Amber	37 mm x 6 mm	5
HCS2036-01-195	Boeing 311/03	POM Plastic	White	3 mm x 6 mm	5
HCS2036-01-196	Boeing 311/14	POM Plastic	White	14 mm x 6 mm	5
HCS2036-01-197	Boeing 311/25	POM Plastic	White	25 mm x 6mm	5
HCS2036-01-198	Boeing 311/37	POM Plastic	White	37 mm x 6 mm	5

SkyGrip by Elixair

Part Number	Product ID	Color	Qty
HCS2036-01-199	Airbus and Boeing 310/1	Black	1



Composite Repair Tool Kit

Our selection of Tool Kits were designed by mechanics for mechanics. We have included a wide variety of only the most necessary tools used for completing a composite, a metal bond or a floor panel repair efficiently.

A wide variety of tools are included to provide you everything you need to complete the job, and our pre-assembled, convenient cases have a place for each tool so you always know where to find them. Best of all, each kit is lightweight and portable for the mechanic on the go.



Features:

Weight - Only 23lbs (10.4kg)

Size - Compact 15in x 20in x 9in (38.1cm x 50.8cm x 22.9cm)

Easy to Use

Each item has its place within the case - reducing the possibility of loss

Individual items can be ordered separately - should replacement be needed

The case is made out of a high impact, shock absorbent material

Portability - Ready for any field repair

Optional - Vacuum for easy clean-up

Itemized List of Contents

Itemized List of Contents		
Description	Part Number	Qty
Drill Motor	HCS2036-01-002	1
Hole Saws - Piloted, Diamond Cut	HCS2036-01-089	1
Hole Saws - Piloted, Diamond Cut	HCS2036-01-090	1
Hole Saws - Piloted, Diamond Cut	HCS2036-01-091	1
Counter Sink Feed - Cage Assembly	HCS2036-01-034	1
Counter Sinks - Piloted, Carbide Tip	HCS2036-01-035	1
Counter Sinks - Piloted, Carbide Tip	HCS2036-01-036	1
Counter Sinks - Piloted, Carbide Tip	HCS2036-01-037	1
Counter Sinks - Piloted, Carbide Tip	HCS2036-01-038	1
Grinder Motor	HCS2036-01-022	1
Grinder - Barrel Attachment for Sanding Disks	HCS2036-01-025	1
Sanding Pad Holders	HCS2036-01-028	1
Sanding Pad Holders	HCS2036-01-029	1
Diamond Wheel Arbor	HCS2036-01-092	1
Router Motor	HCS2036-01-012	1
Router Motor Base - Two-Handed	HCS2036-01-013	1
Router Bit - 40 Mesh Diamond	HCS2036-01-014	1
Collets	HCS2036-01-101	1
Collets	HCS2036-01-102	1
Router Bit - Split Helix	HSC2036-01-043	1
Random Orbital Sander	HCS2036-01-100	1
Sandpaper	HCS2036-01-084	10

Itemized List of Contents		
Description	Part Number	Qty
Sandpaper	HCS2036-01-085	10
Sanding Disk	HCS2036-01-030	10
Sanding Disk Bayonets	HCS2036-01-031	10
Sanding Disk Bayonets	HCS2036-01-040	10
Sanding Disk Bayonets	HCS2036-01-041	10
Sanding Barrels	HCS2036-01-026	5
Sanding Barrels	HCS2036-01-075	5
Sanding Barrels	HCS2036-01-076	5
Sanding Barrels	HCS2036-01-077	5
Sanding Barrels	HCS2036-01-078	5
Sanding Barrels	HCS2036-01-079	5
Sanding Barrels	HCS2036-01-080	5
Sanding Barrels	HCS2036-01-081	5
Sanding Barrels	HCS2036-01-082	5
Sanding Barrels	HCS2036-01-083	5
Fiberglass Cut-Off Wheel	HCS2036-01-087	3
Cutter - Honeycomb Core	HCS2036-01-039	1
Retractable Utility Knife	HCS2036-01-051	1
Shears - Soft Touch	HCS2036-01-053	1
Vacuum Cleaner - Air Driven	HCS2036-01-069	1
Resin Applicator	HCS2036-01-086	3
Manifold, Air, 3 Way	HCS2036-01-088	1

For detailed part number descriptions, please proceed to pages 100-115

Composite Repair Tool Kit



The HCS2036-05A Composite Repair Tool Kit is designed as a supplement to our HCS2036-05 Composite Repair Tool Kit, providing additional tools for the repair technician. This kit includes a popular selection of drills, drill stops, guides, reamers and countersinks. All are supplied in a durable, lightweight, impact resistant carrying case.

Itemized List of Contents

Description	Part Number	Qty
Reamer, Tapered Drill	HCS2036-01-006A	1
Reamer, Tapered Drill	HCS2036-01-006B	1
Reamer, Tapered Drill	HCS2036-01-006C	1
Reamer, Tapered Drill	HCS2036-01-006D	1
Reamer, Tapered Drill	HCS2036-01-006E	1
Router Bit Diamond Cut	HCS2036-01-015A	1
Router Bit Diamond Cut	HCS2036-01-015B	1
Router Bit Diamond Cut	HCS2036-01-015C	1
Router Bit Diamond Cut	HCS2036-01-043A	1
Router Bit Diamond Cut	HCS2036-01-043B	1
Router Bit Diamond Cut	HCS2036-01-043C	1
Router Bit Diamond Cut	HCS2036-01-044A	1
Roller, Steel	HCS2036-01-054	1
Drill Bits Key Point	HCS2036-01-059B	1
Drill Bits Key Point	HCS2036-01-059C	1
Drill Bits Key Point	HCS2036-01-059D	1
Drill Bits Key Point	HCS2036-01-059E	1
Drill Bits Key Point	HCS2036-01-059F	1
Scribe	HCS2036-01-114	1
Knife, Cutting	HCS2036-01-120A	1
Knife, Cutting	HCS2036-01-120B	1
Blade, Cutting	HCS2036-01-120-18	10
Blade, Cutting	HCS2036-01-120-19	10
Blade, Cutting	HCS2036-01-120-24	10
Ruler, Steel	HCS2036-06-012	1

Features:

Lightweight
Compact size
Easy to use
Items can be ordered individually
Portable and ready for any field repair

For detailed part number descriptions, please proceed to pages 100-115

Metal Bond Tool Kit



Our Metal Bond Repair Tool Kit includes a selection of tools necessary for performing most metal bond repairs. All items are supplied in a compact, impact-resistant carrying case.

Features:
Lightweight
Compact size
Easy to use
Items can be ordered individually
Portable and ready for any field repair

Itemized List of Contents		
Description	Part Number	Qty
Router Bits - Taper Pin	HCS2036-01-017	4
Router Bits - Taper Pin	HCS2036-01-018	4
Router Bits - Taper Pin	HCS2036-01-018A	4
Cleco® Pliers	HCS2036-01-050	1
Clecos® Fasteners	HCS2036-01-045A	10
Clecos® Fasteners	HCS2036-01-045	10
Clecos® Fasteners	HCS2036-01-046	10
Clecos® Fasteners	HCS2036-01-047	10
Clecos® Fasteners	HCS2036-01-048	10
Clecos® Side Grip Clamp	HCS2036-06-009	10
Sanding Pad Holders	HCS2036-01-028	1
Sanding Pad Holders	HCS2036-01-029	1
Sanding Disk	HCS2036-01-030	25
Sanding Disk Bayonets	HCS2036-01-031	25
Sanding Disk Bayonets	HCS2036-01-040	25
Sanding Disk Bayonets	HCS2036-01-041	25
Belt Sander	HCS2036-06-001	1
Sanding Belts	HCS2036-06-001-80	10
Sanding Belts	HCS2036-06-001-120	10
Countersink Feed - Cage Assembly	HCS2036-01-034	1
.5in (12.7mm) Countersinks - Piloted, Carbide Tip	HCS2036-01-035	1
.5in (12.7mm) Countersinks - Piloted, Carbide Tip	HCS2036-01-036	1
.5in (12.7mm) Countersinks - Piloted, Carbide Tip	HCS2036-01-037	1
.5in (12.7mm) Countersinks - Piloted, Carbide Tip	HCS2036-01-038	1
Drill Stops	HCS2036-01-060	1
Drill Stops	HCS2036-01-061	1
Drill Stops	HCS2036-01-062	1
Drill Stops	HCS2036-01-063	1
Drill Stops	HCS2036-01-063A	1
Drill Bits Carbide Tipped	HCS2036-01-056A	10
Drill Bits Carbide Tipped	HCS2036-01-057A	10
Drill Bits Carbide Tipped	HCS2036-01-058A	10
Drill Bits Carbide Tipped	HCS2036-01-059G	10
Drill Bits Carbide Tipped	HCS25036-01059H	10

For detailed part number descriptions, please proceed to pages 100-115

TOOLS & STORAGE

Metal Bond Tool Kit

Itemized List of Contents

Description	Part Number	Qty
Drill Reamers - Solid Carbide	HCS2036-01-010A	1
Drill Reamers - Solid Carbide	HCS2036-01-010	1
Drill Reamers - Solid Carbide	HCS2036-01-009	1
Drill Reamers - Solid Carbide	HCS2036-01-008	1
Drill Reamers - Solid Carbide	HCS2036-01-007	1
Drill Guide Housing	HCS2036-01-001	1
Drill Guide Brushings	HCS2036-01-001B	1
Drill Guide Brushings	HCS2036-01-001D	1
Drill Guide Brushings	HCS2036-01-001F	1
Drill Guide Brushings	HCS2036-01-001H	1
Drill Guide Brushings	HCS2036-01-001J	1
Steel Rule	HCS2036-06-012	1
Scribe, 10in (25.4cm) Metal	HCS2036-01-114	2
Center Punch, Auto	HCS2036-06-006	1
Replacement Punch	HCS2036-06-006A	6
Tap Hammer	HCS1104-01	1
Motor Combination Cushion Grip Pliers - 6.5in (16.51cm)	HCS2036-06-007	1
Aviation Snips - Straight Cut	HCS2036-06-011A	1
Aviation Snips - Left Cut	HCS2036-06-011B	1
Aviation Snips - Right Cut	HCS2036-06-011C	1
Case, Tool Kit	HCS1011-021	1
Placard, Tool Kit	HCS1010-113	1
Air Input FTG, Male, 0.25in Male NPT	HCS1014-005	1

For detailed part number descriptions, please proceed to pages 100-115

Floor Panel Repair Tool Kit



Itemized List of Contents

Description	Part Number	Qty
Cutter, Rebate	HCS2036-07-002A	2
Closing Tool	HCS2036-07-003A	1
Drill Bits - Kevlar™	HCS2036-07-001	4
Counter Bores	HCS2036-01-066A	2
Counter Bores	HCS2036-01-066B	2
Counter Bores	HCS2036-01-066C	2

Our Floor Panel Repair Tool Kit includes an assortment of tools needed for common floor panel repairs. The Floor Panel Repair Tool Kit is packaged in a compact, impact resistant case.

Features:

- Lightweight
- Compact size
- Easy to use
- Items can be ordered individually
- Portable and ready for any field repair

For detailed part number descriptions, please proceed to pages 100-115

UAV Composite Repair Tool Kit



The HCS2036-09 “UAV” Composite Repair Tool Kit is designed to provide you with all the necessary tools you need to efficiently perform a composite repair.

A wide array of tools and accessories are included to provide you with everything you need to effectively complete the job.

These pre-assembled cases have a convenient place for each tool so you always know where to find them. Best of all, each kit is rugged, lightweight, and portable for those on-location field repairs.

Itemized List of Contents

Description	Part Number	Qty
FITTING, AIR INPUT, MALE, 1/4" NPT MALE, TYPE-M	HCS1014-005	4
HAMMER, TAP INSPECTION, COMPOSITE STRUCTURES, ALUMINUM CONSTRUCTION WITH LOGO	HCS1104-01	1
VACUUM PUMP AND SNIFFER ASSEMBLY	HCS2026-01	1
DRILL GUIDE/HOUSING, FOR BUSHING PART # HCS2036-01-001B TO 001J	HCS2036-01-001	1
DRILL GUIDE/BUSHING 3/32"	HCS2036-01-001B	1
DRILL GUIDE/BUSHING 1/8"	HCS2036-01-001D	1
DRILL GUIDE/BUSHING 5/32"	HCS2036-01-001F	1
DRILL GUIDE/BUSHING 3/16"	HCS2036-01-001H	1
DRILL GUIDE/BUSHING 1/4"	HCS2036-01-001J	1
DRILL MOTOR, AIR, 5200 RPM, 0-3/8" ID CHUCK	HCS2036-01-002	1
ROUTER MOTOR, 208 (1/4") COLLET STD, 0.9HP MOTOR, AIR DRIVEN, 25,000 RPM, STRAIGHT HANDLE, ORANGE HOUSING	HCS2036-01-012	1
ROUTER BASE, TWO-HANDED, FOR SERIES, 10-20 GRINDERS	HCS2036-01-013	1
ROUTER BIT, 1/4"X 3" OAL, 40 MESH, DIAMOND CUT, 1" CUTTING SURFACE	HCS2036-01-014	1
ROUTER BIT, 1/4"X 2" OAL, END MILL STYLE, DIAMOND CUT, 1/4" SHANK DIA., 2" O.A.L., 3/4" FLUTE LENGTH	HCS2036-01-015	1
ROUTER BIT, 1/4"X 2" OAL, DRILL PT, DIAMOND CUT, 3/4" FLUTE LENGTH, 1/4" SHANK DIA., 2" O.A.L.	HCS2036-01-015A	1
ROUTER BIT, 3/16"X 2" OAL, BURR STYLE, DIAMOND CUT, 3/16" SHANK DIA., 2" O.A.L., 3/4" FLUTE LENGTH	HCS2036-01-015C	1

Itemized List of Contents

Description	Part Number	Qty
GRINDER, AIR DRIVEN 90 DEG., REAR EXHAUST, 20,000 RPM	HCS2036-01-022	1
DRUMS, RUBBER SANDING W/ SLEEVE ASSORTMENT, 1/4"DIA SHANK WITH THE FOLLOWING SIZED BARRELS: 1/2" X 1/2", (1/8" DIA SHANK), 3/4" X 1", 1" X 1", 1-1/2" X 1-1/2", 2" X 1-1/2", INCLUDES:1 SET, 50 GRIT AND 1 SET 120 GRIT SLEEVES	HCS2036-01-025	1
SANDING BARREL, 1" X 1" X 80 GRIT	HCS2036-01-026	1
SANDING PAD, 2", SPEED LOC TS MOUNT WITH THREADED MANDREL (STD ABRASIVES SOCATT MOUNT)	HCS2036-01-028	1
SANDING PAD, 1", SPEED LOC TS MOUNT WITH THREADED MANDREL (STD ABRASIVES SOCATT MOUNT)	HCS2036-01-029	1
SANDING DISK, 2" DIA, 80 GRIT, SPD LOC TS, STD. ABR. SOCATT MOUNT, ALUM OXIDE	HCS2036-01-030	10
SANDING DISK, 1" DIA, 80 GRIT SPD LOC TS, STD. ABR. SOCATT MOUNT, ALUM OXIDE	HCS2036-01-031	10
SANDING DISK, 2" DIA, 180 GRIT, SPD LOC TS, STD. ABR. SOCATT MOUNT, ALUM OXIDE	HCS2036-01-032	10
SANDING DISK, 1" DIA, 180 GRIT, SPD LOC TS, STD. ABR. SOCATT MOUNT, ALUM OXIDE	HCS2036-01-033	10
COUNTERSINK FEED (CAGE ASSEMBLY)	HCS2036-01-034	1
COUNTERSINK, 1/2" X 100 DEGREE, 1/8" PILOT, CARBIDE TIPPED	HCS2036-01-035	1
COUNTERSINK, 1/2" X 100 DEGREE, 5/32" PILOT, CARBIDE TIPPED	HCS2036-01-036	1

UAV Composite Repair Tool Kit

Itemized List of Contents

Description	Part Number	Qty
COUNTERSINK, 1/2" X 100 DEGREE, 3/16" PILOT, CARBIDE TIPPED	HCS2036-01-037	1
COUNTERSINK, 1/2" X 100 DEGREE, 1/4" PILOT, CARBIDE TIPPED	HCS2036-01-038	1
CUTTER, HONEYCOMB CORE, FLAT KNIFE	HCS2036-01-039	1
SANDING DISK, 1" DIA, 120GRIT SPD LOC TS, STD ABR. SOCATT MOUNT, ALUM OXIDE	HCS2036-01-040	10
SANDING DISK, 2" DIA, 120 GRIT SPD LOC TS, STD ABR. SOCATT MOUNT, ALUM OXIDE	HCS2036-01-041	10
ROUTER BIT, 1/4" SPLIT HELIX, FOR CUTTING KEVLAR LAMINATES, CARBIDE 1/4" DIA 2.5" LONG, SPEED 1600-1900 SFM, **MUST SUPPLY WITH WARNING NOTICES	HCS2036-01-043	1
ROUTER BIT, 1/4" X 3" OAL, BURR	HCS2036-01-043A	1
ROUTER BIT, 1/4"X 3" OAL, DRILL PT, CARBIDE, 3" LONG X 1" FLUTE LENGTH FOR KEVLAR, DIAMOND CUT	HCS2036-01-043B	1
ROUTER BIT, 1/4"X 3" OAL, END MILL CARBIDE, 3" LONG X 1" FLUTE LENGTH, FOR KEVLAR, DIAMOND CUT	HCS2036-01-043C	1
ROUTER BIT, 1/4"X 3" OAL, BI SHEAR, COMPRESSION, FOR KEVLAR 1" FLUTE LENGTH	HCS2036-01-044A	1
KNIFE, RETRACTABLE UTILITY	HCS2036-01-051	1
SHEARS, FISKAR SOFT TOUCH NOT FOR USE ON KEVLAR MATERIAL, 10-1/2" OAL X 3-5/8" CUTTING LENGTH	HCS2036-01-053	1
SHEARS, FOR KEVLAR, RH, 12" OAL, CARBIDE COATED	HCS2036-01-186	1
SWEEP KIT, 7PC, 1/4", POLYETHYLENE	HCS2036-01-055	1
DRILL BIT, 3/32" SOLID CARBIDE, 118 DEG POINT, JOBBER LENGTH**NOT RECOMMENDED FOR KEVLAR**	HCS2036-01-056A	10
DRILL BIT, 1/8", CARBIDE TIPPED, 135 DEGREE POINT, JOBBER LENGTH**NOT RECOMMENDED FOR KEVLAR**	HCS2036-01-057A	10
DRILL BIT, 5/32", CARBIDE TIPPED, 135 DEGREE POINT, JOBBER LENGTH**NOT RECOMMENDED FOR KEVLAR**	HCS2036-01-058A	10
DRILL BIT, 3/32", KEV POINT, FOR KEVLAR	HCS2036-01-059B	5
DRILL BIT, 1/8", KEV POINT, FOR KEVLAR	HCS2036-01-059C	5
DRILL BIT, 5/32", KEV POINT, FOR KEVLAR	HCS2036-01-059D	5
DRILL BIT, 3/16", KEV POINT, FOR KEVLAR	HCS2036-01-059E	5

Itemized List of Contents

Description	Part Number	Qty
DRILL BIT, 1/4", KEV POINT, FOR KEVLAR, OAL UNDER 3"	HCS2036-01-059F	5
DRILL BIT, 3/16", CARBIDE TIPPED, 135 DEGREE SPLIT POINT, 2.25", NOT RECOMMENDED FOR KEVLAR	HCS2036-01-059J	10
DRILL BIT, 1/4", CARBIDE TIPPED, 135 DEGREE SPLIT POINT, 2.5", NOT RECOMMENDED FOR KEVLAR	HCS2036-01-059K	10
MICROSCOPE, MAGNIFIER, 30X	HCS2036-01-067	1
SANDER, RANDOM/ORBITAL, 5" PAD, 12,000 RPM 1/2HP	HCS2036-01-100	1
SANDING BARREL, 1/2"X1/2", 120 GRIT	HCS2036-01-075	1
SANDING BARREL, 3/4"X1", 120 GRIT	HCS2036-01-076	1
SANDING BARREL, 1" X 1", 120 GRIT	HCS2036-01-077	1
SANDING BARREL, 1-1/2"X1-1/2", 120 GRIT	HCS2036-01-078	1
SANDING BARREL, 2"X 1-1/2", 120GRIT	HCS2036-01-079	1
SANDING BARREL, 1/2" X 1/2", 80 GRIT	HCS2036-01-080	1
SANDING BARREL, 3/4" X 1", 80 GRIT	HCS2036-01-081	1
SANDING BARREL, 1-1/2" X 1-1/2"X 80 GRIT	HCS2036-01-082	1
SANDING BARREL, 2"X 1-1/2", 80 GRIT	HCS2036-01-083	1
SANDING DISK, 5" DIA, 80 GRIT ALUMINUM OXIDE, PSA STICK-IT	HCS2036-01-084	10
SANDING DISK, 5" DIA, 120 GRIT ALUMINUM OXIDE, PSA STICK-IT	HCS2036-01-085	10
CUT-OFF WHEEL, 3", FIBERGLASS REINFORCED 3" X 1/16" X 1/4" ARBOR, MAX SPEED 25,465 RPM	HCS2036-01-087	10
ARBOR, DIAMOND WHEEL 1/4" SHANK	HCS2036-01-092	1
COLLET, 5/32", FOR .110 SMALL END, .128 SHANK, #2 ROUTER BIT, (USE WITH HCS2036-01-012 ROUTER MOTOR)	HCS2036-01-101	1
BLADE, CUTTING KNIFE, CHISEL, #18, FITS KNIFE HCS2036-01-120, 5 BLADES PER PACKAGE	HCS2036-01-120-18	5
BLADE, CUTTING KNIFE, CARVING, #19, FITS KNIFE HCS2036-01-120 5 BLADES PER PACKAGE	HCS2036-01-120-19	5
BLADE, CUTTING KNIFE, ANGLED, #24 FITS KNIFE HCS2036-01-120A 5 BLADES PER PACKAGE	HCS2036-01-120-24	5
KNIFE, CUTTING, #2, REPLACABLE BLADE	HCS2036-01-120A	1
KNIFE, CUTTING, HEX METAL HANDLE, REPLACEABLE BLADE	HCS2036-01-120B	1

TOOLS & STORAGE

UAV Composite Repair Tool Kit

Itemized List of Contents		
Description	Part Number	Qty
ROLLER, FIBERGLASS, 1/2" X 3", ALUM	HCS2036-01-121	1
SANDING DISK, 5" DIA, 150 GRIT, PSA, ALUMINUM OXIDE ON 'C' WEIGHT PAPER	HCS2036-01-161	10
SANDING DISK, 5" DIA, 180 GRIT, PSA, ALUMINUM OXIDE ON 'C' WEIGHT PAPER	HCS2036-01-162	10
SANDING DISK, 5" DIA, 220 GRIT, PSA, ALUMINUM OXIDE ON 'C' WEIGHT PAPER	HCS2036-01-163	10
SANDING DISK, 5" DIA, 320 GRIT, PSA, ALUMINUM OXIDE ON 'C' WEIGHT PAPER	HCS2036-01-164	10
SANDING DISK, 5" DIA, 500 GRIT, PSA, ALUMINUM OXIDE ON 'C' WEIGHT PAPER	HCS2036-01-165	10
SANDING DISK, 5" DIA, 800 GRIT, PSA, ALUMINUM OXIDE ON FILM BACK	HCS2036-01-166	10
SANDING DISK, 5" DIA, 1200 GRIT, PSA, ALUMINUM OXIDE ON FILM BACK	HCS2036-01-168	10
SANDING DISK, 2" DIA, 150 GRIT, SPEED LOK TS, ALUMINUM OXIDE	HCS2036-01-172	10
SANDING DISK, 2" DIA, 240 GRIT, SPEED LOK TS, ALUMINUM OXIDE	HCS2036-01-174	10
SANDING DISK, 2" DIA, 320 GRIT, SPEED LOK TS, ALUMINUM OXIDE	HCS2036-01-175	10
SANDING DISK, 1" DIA, 150 GRIT, SPEED LOK TS, ALUMINUM OXIDE	HCS2036-01-178	10
SANDING DISK, 1" DIA, 240 GRIT, SPEED LOK TS, ALUMINUM OXIDE	HCS2036-01-180	10
SANDING DISK, 1" DIA, 320 GRIT, SPEED LOK TS, ALUMINUM OXIDE	HCS2036-01-181	10
BOX, PLASTIC FLEX-A-TOP HINGED LID, ID 2.64" X 3.60" X 1.5"	HCS2036-125	22
BOX, PLASTIC FLEX-A-TOP HINGED LID, ID 4.41" X 7.89" X 1.16"	HCS2036-126	4
PETRI DISH, 150mm X 25mm, STYRENE PLASTIC W/ LID	HCS2036-127	4
PLACARD, HCS2036-09 TOOL KIT (1 OF 2), 2 X 6", BLACK W/WHITE LETTERS, PLASTIC	HCS1010-182	1
PLACARD, HCS2036-09 CONSUMABLES KIT (2 OF 2), 2 X 6", BLACK W/WHITE LETTERS, PLASTIC	HCS1010-183	1
CASE, HCS2036-09 TOOL KIT, TOOLS, REMOVABLE LID, DIVIDER FLAP, CUSTOM FOAM	HCS1011-033	1
CASE, TOOL KIT HCS2036-09, COMSUMABLES, 3.0" TOP, 3.0" BOTTOM, DIVIDER FLAP IN TOP PORTION, TAKE-APART HINGES, CUSTOM FOAM FILLER	HCS1011-034	1



Mobile Tool Cart

The HCS2050 series mobile tool cart is designed to provide you with a central storage for all the necessary tools you need to efficiently perform a composite repair.

A wide array of tools and accessories are available to provide you with everything you need to effectively complete the job.

This pre-assembled cart includes drawer dividers so you can have a place for each tool and storage for your hot bonder, so you always know where to find them.



Actual Configuration May Vary

Features:

35.5" H x 70" L x 28.5" D
Cable Hook and handle
4ea locking casters
Ribbed top mat on work surface
Four storage drawers with configurable dividers
Bonder storage compartment
HCS2050-04 is for "Cart Only"



HCS2050-03 - Itemized List of Contents

Description	Part Number	Qty
TAP HAMMER	HCS1104-01-P	1
DRILLGUIDE HOUSING	HCS2036-01-001	1
DRILL MOTOR	HCS2036-01-002	1
ROUTER MOTOR	HCS2036-01-012	1
TOOL, SOCKET, 12 POINT, ROUTER MOTOR DISASSEMBLY	HCS2036-01-012-TOOL	1
ROUTER MOTOR BASE	HCS2036-01-013	1
GRINDER MOTOR	HCS2036-01-022	1
RETRACTABLE UTILITY KNIFE	HCS2036-01-051	1
MATERIAL ROLLER	HCS2036-01-054	1
AIR DRIVEN VACUUM CLEANER	HCS2036-01-069	1
RANDOM ORBITAL SANDER	HCS2036-01-100	1
MANIFOLD, AIR, 3-WAY	HCS2036-01-088	1
RULER, 12", STEEL, 1/2" WIDE	HCS2036-06-012	1

TOOLS & STORAGE

Storage Solutions

Durable, secure cabinets are designed to provide years of safe, convenient storage and problem-free operation. Our cabinets:

- Provide the highest density storage, reducing the footprint needed for storage by as much as 50%
- Provide maximum weight-bearing capacity, organization and access
- Feature all the benefits of our unique, infinitely customizable drawer
- Offer the flexibility to adapt to your future requirements
- Can be stacked for even greater storage density in the same footprint
- Allow keyed-alike cabinet groupings to be created. Our removable core locks can be switched in the field for both keyed-alike and master key systems.



Features:
Lockable cabinets
Ergonomic handles
Hinged label holders
Drawer dividers with ability to add labeling
PrevenTip® interlock system
Exclusive suspension system
Optional wood counters



One-Piece Drawer Face And Handle

The drawer front has an integral handle and is welded to the bottom of the drawer for added stability. No hardware is used to attach the drawer front or handle, resulting in superior durability and ergonomic safety.

Suspension System

Our exclusive suspension system incorporates a guide track, which wraps under the drawer body for additional stability and strength. This unique system features quiet Polyoxymethylene (POM) bearings, combining strength, hardness, dimensional stability, fatigue resistance, low wear and low friction, to give Lista drawers remarkably smooth, quiet operation.

Drawer Performance

When we say our drawers provide unequalled performance, we have the results to back that claim up. To test our drawers, we chose the RAL-RG 614 standard from the German Institute of Quality Assurance and Marking, a globally respected standard. This test required our drawers to pass a series of difficult test criteria. In these demanding tests, our cabinets excelled. Our suspensions exceeded the required number of cycles, fully loaded, without diminished performance.

Storage Solutions continued

Part Number	Width x Depth x Height	Number of Drawers	Number of Compartments
Counter Height Cabinets			
HCS2038-04-001	28.25in x 28.5in x 41.75in (71.75cm x 72.39cm x 106.04cm)	5	61
HCS2038-04-002	28.25in x 28.5in x 41.75in (71.75cm x 72.39cm x 106.04cm)	7	114
HCS2038-04-003	28.25in x 28.5in x 41.75in (71.75cm x 72.39cm x 106.04cm)	9	154
HCS2038-04-004	28.25in x 28.5in x 41.75in (71.75cm x 72.39cm x 106.04cm)	10	210
HCS2038-04-005	40.25in x 22.5in x 41.75in (102.23cm x 57.15cm x 106.04cm)	5	57
HCS2038-04-006	40.25in x 22.5in x 41.75in (102.23cm x 57.15cm x 106.04cm)	7	96
HCS2038-04-007	40.25in x 22.5in x 41.75in (102.23cm x 57.15cm x 106.04cm)	9	117
Eye-Level Height Cabinets			
HCS2038-05-001	28.25in x 28.5in x 59.5in (71.75cm x 72.39cm x 151.13cm)	8	88
HCS2038-05-002	28.25in x 28.5in x 59.5in (71.75cm x 72.39cm x 151.13cm)	9	124
HCS2038-05-003	28.25in x 28.5in x 59.5in (71.75cm x 72.39cm x 151.13cm)	11	172
HCS2038-05-004	28.25in x 28.5in x 59.5in (71.75cm x 72.39cm x 151.13cm)	12	210
HCS2038-05-005	28.25in x 28.5in x 59.5in (71.75cm x 72.39cm x 151.13cm)	15	300
HCS2038-05-006	40.25in x 22.5in x 59.5in (102.23cm x 72.39cm x 151.13cm)	7	66
HCS2038-05-007	40.25in x 22.5in x 59.5in (102.23cm x 72.39cm x 151.13cm)	9	105
HCS2038-05-008	40.25in x 22.5in x 59.5in (102.23cm x 72.39cm x 151.13cm)	10	159
Mobile Cabinets			
HCS2038-06-001	22.18in x 28.5in x 35.5in (56.36cm x 72.39cm x 105.41cm)	5	53
HCS2038-06-002	22.18in x 28.5in x 41.5in (56.36cm x 72.39cm x 105.41cm)	6	61
HCS2038-06-003	39in x 28.5in x 37.25in (99.06cm x 72.39cm x 94.61cm)	5	57
HCS2038-06-004	28.25in x 22.5in x 41.5in (71.75cm x 57.15cm x 105.41cm)	7	72
HCS2038-06-005	40.25in x 22.5in x 41.5in (102.23cm x 57.15cm x 105.41cm)	7	94

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TOOLS & STORAGE

Vacuum and Grinder Equipment

HEATCON Composite Systems® offers Clayton vacuum and grinder equipment.

Available in both electric and pneumatic models, Clayton HEPA vacuums are an ideal solution for dustless sanding, dust extraction, and general cleanup. They are designed for the removal of Hexavalent Chromium (Cr VI), paints containing lead or chromates, aluminum dust, carbon fiber, ceramic dust, fiberglass and mold. These units are extremely portable, lightweight and feature extra heavy duty components that ensure long life and extreme durability for extreme environments.

Clayton also provides a complete family of shrouded tools to complement grinder supplied in kits which provide outstanding dust collection during sanding, grinding, cutting, drilling, and other operations. These tools are the choice for aerospace customers involved in manufacturing and maintenance. Contact us to discuss your requirements today.



Vacuum and Accessories

Warthog HEPA Vacuums

Available in both electric and pneumatic models, Clayton HEPA vacuums are an ideal solution for dustless sanding, dust extraction, and general cleanup. They are designed for the removal of Hexavalent Chromium (Cr VI), paints containing lead or chromates, aluminum dust, carbon fiber, ceramic dust, fiberglass and mold. These units are extremely portable, lightweight and feature extra heavy duty components that ensure long life and extreme durability for extreme environments.



Part Number	Image	Description	Qty
HCS2035-VAC-01	1	WARTHOG VACUUM, 5 GAL, PNEUMATIC, HEPA	1
HCS2035-VAC-02	2	WARTHOG VACUUM, 15 GAL, PNEUMATIC, HEPA	1
HCS2035-VAC-03-120	3	WARTHOG VACUUM, 5 GAL, 120V, ELECTRIC, HEPA	1
HCS2035-VAC-03-220	3	WARTHOG VACUUM, 5 GAL, 220V, ELECTRIC, HEPA	1
HCS2035-VAC-04-120	4	WARTHOG VACUUM, 15 GAL, 120V, ELECTRIC, HEPA	1
HCS2035-VAC-04-220	4	WARTHOG VACUUM, 15 GAL, 220V, ELECTRIC, HEPA	1
HCS2035-ACC-01		ADAPTER HOSE, 1" HOSE TO 1.5" SLEEVE, 5 ft.	1
HCS2035-ACC-02		CLEANUP HOSE, VACUUM, 1.5" X 10 ft, NO COMPRESSED AIR LINE	1
HCS2035-ACC-03		SAFE FILTER CHANGE HOSE, 3FT, WARTHOG VACUUMS	1
HCS2035-ACC-04		COMPRESSED AIR LINE, 1/2" X 20 FT, WITH FITTINGS, 200 PSI MAX	1
HCS2035-FLT-01		HEPA FILTER FOR WH-105 / WH-115, WARTHOG VACUUMS	1
HCS2035-FLT-02		PREFILTER, WARTHOG VACUUMS, PROLONGS HEPA FILTER LIFE	3
HCS2035-FLT-03		FILTER BAG, 15 GAL, DISPOSABLE, WARTHOG VACUUM	5
HCS2035-FLT-04		FILTER BAG, DISPOSABLE, DM & 5 GAL WARTHOG	5

Grinder Kits and Accessories

Surface Prep Grinder & Shroud Kits

Dotco Right Angle Grinders are suitable for a wide range of finishing applications. The small, lightweight, and comfortable design has moving parts to keep vibration to a minimum while maintaining the durability, dependability, and versatility of the grinder. Combined with other accessories, operators can focus on doing the best job possible in the least amount of time. Available in 2" or 3" versions, each kit includes, 1 Clear Revolution Shroud, 2 feet of 1" vacuum hose, swivel fittings to connect to your vacuum system, and an assortment of abrasives. All packed in a deep bin professional organizer.

Kits are available for purchase with or without grinders. See part numbers listed.

Surface Prep Shroud Kits

If you have a grinder, then try the Clayton Surface Prep Shroud Kits. They include everything in the Grinder Kit except the grinder.



Surface Prep Grinder & Shroud Kit
Case Dimension: 19" x 15" x 4 1/2"



Grinder with Shroud

Kits with Grinder

Part Number	Description	Qty
HCS2035-05-TR	SURFACE PREP DOTCO RIGHT ANGLE GRINDER & SHROUD KIT, 2", TR Style	1
HCS2035-05-TS	SURFACE PREP DOTCO RIGHT ANGLE GRINDER & SHROUD KIT, 2", TS Style	1
HCS2035-06-TR	SURFACE PREP DOTCO RIGHT ANGLE GRINDER & SHROUD KIT, 3", TR Style	1
HCS2035-06-TS	SURFACE PREP DOTCO RIGHT ANGLE GRINDER & SHROUD KIT, 3", TS Style	1



2" Right Angle Shroud



3" Right Angle Shroud

Kits without Grinder

Part Number	Description	Qty
HCS2035-07-TR	SURFACE PREP SHROUD KIT, 2", TR Style	1
HCS2035-07-TS	SURFACE PREP SHROUD KIT, 2", TS Style	1
HCS2035-08-TR	SURFACE PREP SHROUD KIT, 3", TR Style	1
HCS2035-08-TS	SURFACE PREP SHROUD KIT, 3", TS Style	1

Abrasives Included in Kits

Grit	Abrasive Type	Qty
24	QUICK CHANGE - RESIN BOND	10
36	QUICK CHANGE - RESIN BOND	10
60	QUICK CHANGE - RESIN BOND	10
80	QUICK CHANGE - RESIN BOND	10
120	QUICK CHANGE - RESIN BOND	10
180	QUICK CHANGE - RESIN BOND	10
240	QUICK CHANGE - RESIN BOND	10
320	QUICK CHANGE - RESIN BOND	10
COARSE	QUICK CHANGE - NON WOVEN	10
MEDIUM	QUICK CHANGE - NON WOVEN	10
FINE	QUICK CHANGE - NON WOVEN	10



Resin Bond



Non Woven

Additional Dust Control Accessories

Customize your Surface Prep Kits with additional dust control attachments.

Clear Revolution Shrouds

The Clear Revolution Shrouds come in three sizes. They are made of crystal clear Lexan and does not obscure the working edges of the abrasive discs, so users can easily see the work surface. The Edge Finishing Shroud has a skirt that surrounds the abrasive to physically contain the debris and effectively capture particles.

Radial Shrouds

The Radial Shroud fits ANY tool with a 1/4" collet and accepts up to four bristle discs with 3/8" center hole. This shroud does not obscure visibility and swivels freely around shaft, so the hose can be repositioned with ease.

Belt Sander Shroud

The Belt Sander Shroud has precision finished anodized aluminum housing with a 6" arm that accepts 1/2" x 12" belts. The shroud swivels on the tool with sander belt and does not obscure the working edges of the abrasive belt. It is best complemented with a 12K RPM 6" x 1/2" Dotco belt sander (sold separately).



1" Right Angle Shroud



Edge Finishing Shroud



Radial Shroud



Dotco Belt Sander with Shroud

Part Number	Description	Qty
HCS2035-09-TR	CLEAR REVOLUTION SHROUD, 1 INCH, RIGHT ANGLE, TR STYLE	1
HCS2035-09-TS	CLEAR REVOLUTION SHROUD, 1 INCH, RIGHT ANGLE, TS STYLE	1
HCS2035-10-TR	CLEAR REVOLUTION SHROUD, 2 INCH, RIGHT ANGLE, TR STYLE	1
HCS2035-10-TS	CLEAR REVOLUTION SHROUD, 2 INCH, RIGHT ANGLE, TS STYLE	1
HCS2035-11-TR	CLEAR REVOLUTION SHROUD, 3 INCH, RIGHT ANGLE, TR STYLE	1
HCS2035-11-TS	CLEAR REVOLUTION SHROUD, 3 INCH, RIGHT ANGLE, TS STYLE	1
HCS2035-12	RADIAL SHROUD, 3", NARROW, FOR 1 OR 2 ROW BRISTLE DISCS OR CUTOFF WHEEL	1
HCS2035-13-TR	CLEAR REVOLUTION EDGE DEBURRING & FINISHING SHROUD, TR STYLE	1
HCS2035-14	6" ARM BELT SANDER SHROUD ASSY, 2FT x 1" SWIVEL VACUUM HOSE ADAPTER	1
HCS2035-15	DOTCO BELT SANDER, 12K RPM, 6" x 1/2" WITH 1 BELT SANDER SHROUD	1

Drill Motor and Bits












The HCS2036-01-002 Drill Motor is ergonomically designed, compact, quiet and powerful. This tool comes with a short body length, ideal for working in tight areas, while the light weight and perfect balance makes it the mechanics' favorite drill.



Specifications:
<i>Weight</i> - 1.5lbs (0.7kg)
<i>Height</i> - 6.3in (15.9cm)
<i>RPM</i> - 5,200
<i>Diameter Capacity</i> - .0375in (9.525mm)
<i>Throttle</i> - Two Stage
<i>Exhaust</i> - 360° Rotable




Drill Bits - Carbon Fiber and Kevlar™						
Description	Image	Part Number	Overall Diameter	Angle	Flute Length	Overall Length
Drill Bit - Carbide Tipped		HCS2036-01-056A (solid carbide)	.09in (2.5mm)	118°	1.125in (2.86cm)	2.25in (5.72cm)
Drill Bit - Carbide Tipped		HCS2036-01-057A	0.125in (3.2mm)	135°	1.75in (4.45cm)	2.75in (6.99cm)
Drill Bit - Carbide Tipped		HCS2036-01-058A	0.16in (4.0mm)	135°	2in (5.08cm)	3.125in (7.94cm)
Drill Bit - Carbide Tipped		HCS2036-01-059G	0.19in (4.8mm)	135°	2.375in (6.03cm)	3.5in (8.89cm)
Drill Bit - Carbide Tipped		HCS2036-01-059H	0.25in (6.4mm)	135°	2.75in (6.99cm)	4in (10.16cm)
Drill Bit - Kev Point Twist		HCS2036-01-059B	.09in (2.5mm)		1in (2.54cm)	2in (5.08cm)
Drill Bit - Kev Point Twist		HCS2036-01-059C	0.125in (3.2mm)		1.25in (3.18cm)	2.25in (5.72cm)
Drill Bit - Kev Point Twist		HCS2036-01-059D	0.16in (4.0mm)		1.375in (3.49cm)	2.5in (6.3.5cm)
Drill Bit - Kev Point Twist		HCS2036-01-059E	0.19in (4.8mm)		1.625in (4.13cm)	2.75in (6.98cm)
Drill Bit - Kev Point Twist		HCS2036-01-059F	0.25in (6.4mm)		2in (5.08cm)	3.25in (8.26cm)

Drill Motor Accessories and Counter Bores











Drill Motor Accessories and Attachments			
Description	Image	Part Number	Overall Diameter
Drill Stop		HCS2036-01-060	#40
Drill Stop		HCS2036-01-061	#30
Drill Stop		HCS2036-01-062	#21
Drill Stop		HCS2036-01-063	#11
Drill Stop		HCS2036-01-063A	#14
Drill Guide Bushing*		HCS2036-01-001B	.09in (2.5mm)
Drill Guide Bushing*		HCS2036-01-001D	0.125in (3.2mm)
Drill Guide Bushing*		HCS2036-01-001F	0.16in (4.0mm)
Drill Guide Bushing*		HCS2036-01-001H	0.19in (4.8mm)
Drill Guide Bushing*		HCS2036-01-001J	0.25in (6.4mm)
Drill Guide Housing*		HCS2036-01-001	Used for drilling straight holes at 90°








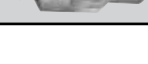
* Also available as a kit: HCS2036-01-001K

TOOLS & STORAGE

Counter Bores			
Description	Image	Part Number	Overall Diameter
Counter Bore		HCS2036-01-064	0.5in (12.7mm)
Counter Bore		HCS2036-01-065	0.75in (19.2mm)
Counter Bore		HCS2036-01-066	1in (2.54cm)

Drill Motor Accessories and Reamers

Reamers					
Description	Image	Part Number	Overall Diameter	Flute Length	Overall Length
Reamers - Solid Carbide		HCS2036-01-010A	.09in (2.5mm)	1in (2.54cm)	6in (15.24cm)
Reamers - Solid Carbide		HCS2036-01-010	0.125in (3.2mm)	1.125in (2.86cm)	6in (15.24cm)
Reamers - Solid Carbide		HCS2036-01-009	0.16in (4.0mm)	1.25in (3.18cm)	6in (15.24cm)
Reamers - Solid Carbide		HCS2036-01-008	0.19in (4.8mm)	1.5in (3.81cm)	6in (15.24cm)
Reamers - Solid Carbide		HCS2036-01-007	0.25in (6.4mm)	1.75in (4.44cm)	6in (15.24cm)
Reamers - Taper Drill		HCS2036-01-006A	.09in (2.5mm)	1.5in (3.81cm)	4in (10.16cm)
Reamers - Taper Drill		HCS2036-01-006B	0.125in (3.2mm)	1.5in (3.81cm)	4in (10.16cm)
Reamers - Taper Drill		HCS2036-01-006C	0.16in (4.0mm)	1.5in (3.81cm)	4in (10.16cm)
Reamers - Taper Drill		HCS2036-01-006D	0.19in (4.8mm)	1.5in (3.81cm)	4in (10.16cm)
Reamers - Taper Drill		HCS2036-01-006E	0.25in (6.4mm)	1.5in (3.81cm)	4in (10.16cm)

Drill Motor Accessories and Attachments					
Description	Image	Part Number	Overall Diameter	Angle	Shank Length
Piloted, Diamond Cut Hole Saws		HCS2036-01-089	1in (2.54cm)		0.375in (9.525mm)
Piloted, Diamond Cut Hole Saws		HCS2036-01-090	1.5in (3.81cm)		0.375in (9.525mm)
Piloted, Diamond Cut Hole Saws		HCS2036-01-091	2in (5.08cm)		0.375in (9.525mm)
Counter Sink Feed - Cage Assembly		HCS2036-01-034	28 Female Threads: 0.25in (6.4mm)	Shaft Travel: 0.28in (7.1mm)	0.25in x 4in (6.4mm x 10.16cm)
Counter Sinks - with Piloted Carbide Tip		HCS2036-01-035	0.125in (3.2mm)	100°	
Counter Sinks - with Piloted Carbide Tip		HCS2036-01-036	0.16in (4.0mm)	100°	
Counter Sinks - with Piloted Carbide Tip		HCS2036-01-037	0.19in (4.8mm)	100°	
Counter Sinks - with Piloted Carbide Tip		HCS2036-01-038	0.25in (6.4mm)	100°	

Router Motor and Bits

**HCS2036-01-012
Router Motor**



The HCS2036-01-012 Router Motor is small, comfortable and lightweight, yet it can withstand rugged treatment. This tool can be used with the HCS2036-01-013 Two-Handed Router Motor Base.



**HCS2036-01-013
Router Motor Base**


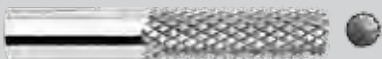




Specifications:

<i>Weight</i> - 1.1lbs (0.5kg)
<i>Height</i> - 6.3in (15.9cm)
<i>Head Height</i> - 2.9in (7.4cm)
<i>RPM</i> - 23,000
<i>Exhaust</i> - Front
<i>Collet Size</i> - 0.25in (6.35mm)
<i>Sanding Capacity</i> - 2in (5.08cm)




Router Bits - Fiberglass and Carbon Fiber


Description	Image	Part Number	Overall Length	Shank Diameter	Flute Length	Cutter Diameter
Router Bits - 40 Mesh Diamond Cut		HCS2036-01-014	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.25in (6.4mm)
Router Bits - 40 Mesh Diamond Cut		HCS2036-01-014A	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.375in (9.5mm)
Router Bits - 40 Mesh Diamond Cut		HCS2036-01-016	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.5in (12.7mm)
Router Bits - Diamond Cut - End Mill		HCS2036-01-015	2in (5.08cm)	0.25in (6.4mm)	0.75in (19.1mm)	0.25in (6.4mm)
Router Bits - Diamond Cut - Drill Point		HCS2036-01-015A	2in (5.08cm)	0.25in (6.4mm)	0.75in (19.1mm)	0.25in (6.4mm)
Router Bits - Diamond Cut - Burr Style		HCS2036-01-015B	2in (5.08cm)	0.25in (6.4mm)	0.75in (19.1mm)	0.25in (6.4mm)
Router Bits - Diamond Cut - Burr Style		HCS2036-01-015C	2in (5.08cm)	0.19in (4.8mm)	0.625in (15.9mm)	0.19in (4.8mm)


Router Motor Kevlar™ Bits

Router Bits - Kevlar™						
Description	Image	Part Number	Overall Length	Shank Diameter	Flute Length	Cutter Diameter
Router Bits - *Split Helix		HCS2036-01-043	2.5in (6.35cm)	0.25in (6.4mm)	1in (2.54cm)	0.25in (6.4mm)
Router Bits - Diamond Cut Burr Style		HCS2036-01-043A	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.25in (6.4mm)
Router Bits - Diamond Cut - Drill Point		HCS2036-01-043B	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.25in (6.4mm)
Router Bits - Diamond Cut - End Mill		HCS2036-01-043C	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.25in (6.4mm)
Router Bits - Honeycomb Panel		HCS2036-01-044A	3in (7.62cm)	0.25in (6.4mm)	1in (2.54cm)	0.25in (6.4mm)
Router Bits - *Bi Shear Compression		HCS2036-01-044	2.5in (6.35cm)	0.25in (6.4mm)	0.75in (19.1mm)	0.25in (6.4mm)

Router Motor Bits, Collets, and Templates

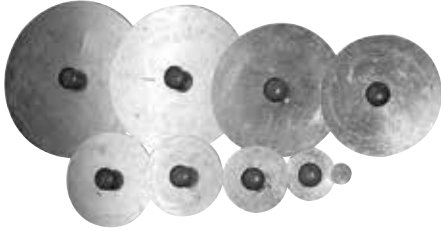
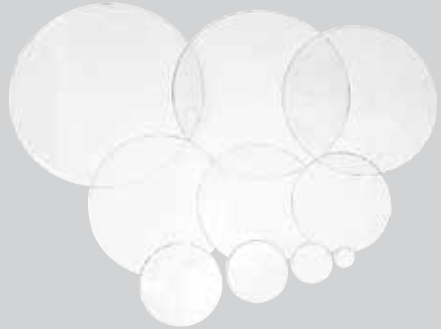
Router Bits - Aluminum						
Description	Image	Part Number	Overall Length	Shank Diameter	Flute Length	Cutter Diameter
Router Bits - Taper Pin		HCS2036-01-017	2.25in (5.72cm)	0.128in (3.3mm)	0.875in (22.2mm)	0.110in (2.8mm)
Router Bits - Taper Pin		HCS2036-01-018A	2.5in (6.35cm)	0.19in (4.8mm)	1.19in (2.55cm)	0.165in (4.2mm)
Router Bits - Taper Pin		HCS2036-01-018	2.75in (6.99cm)	0.25in (6.4mm)	1.25in (3.18m)	0.25in (6.4mm)

Router Collets					
Description	Image	Part Number	Overall Length	Minimum Capacity	Maximum Capacity
Collets		HCS2036-01-101	1.19in (30.22mm)	0.125in (3.2mm)	0.16in (4.0mm)
		HCS2036-01-102	1.19in (30.22mm)	0.156in (4.0mm)	0.1875in (4.8mm)
		HCS2036-01-103	1.19in (30.22mm)	0.343in (8.7mm)	0.375in (9.5mm)

Router Templates - Aluminum				
Description	Image	Part Number	Inner Diameter	Outer Diameter
Router Templates		HCS2036-01-122A	4.9in (12.5cm)	8.86in (22.5cm)
		HCS2036-01-122B	5.9in (15cm)	9.84in (25cm)
		HCS2036-01-122C	6.89in (17.5cm)	10.83in (27.5cm)
		HCS2036-01-122D	7.87in (20cm)	11.81in (30cm)
		HCS2036-01-122E	8.85in (22.5cm)	12.79in (32.5cm)
		HCS2036-01-122F	9.84in (25cm)	13.78in (35cm)

TOOLS & STORAGE

Router Motor Lay-up Cutting Templates

Lay-up Cutting Templates - Aluminum and Plastic			
Description	Image	Part Number	Overall Diameter
<p>Lay-up Cutting Templates - Metal Kit</p> <p>(HCS2036-123 consists of all part numbers listed on the right)</p>		HCS2036-01-123A	0.98in (25mm)
		HCS2036-01-123B	1.96in (5cm)
		HCS2036-01-123C	2.95in (7.5cm)
		HCS2036-01-123D	3.93in (10cm)
		HCS2036-01-123E	4.92in (12.5cm)
		HCS2036-01-123F	5.9in (15cm)
		HCS2036-01-123G	6.89in (17.5cm)
		HCS2036-01-123H	7.87in (20cm)
		HCS2036-01-123I	8.85in (22.5cm)
		HCS2036-01-123J	9.84in (25cm)
		<p>Lay-up Cutting Templates - Plastic Kit</p> <p>(HCS2036-124 consists of all part numbers listed on the right)</p>	
HCS2036-01-124B	1.96in (5cm)		
HCS2036-01-124C	2.95in (7.5cm)		
HCS2036-01-124D	3.93in (10cm)		
HCS2036-01-124E	4.92in (12.5cm)		
HCS2036-01-124F	5.9in (15cm)		
HCS2036-01-124G	6.89in (17.5cm)		
HCS2036-01-124H	7.87in (20cm)		
HCS2036-01-124I	8.85in (22.5cm)		
HCS2036-01-124J	9.84in (25cm)		

Grinder Motor and Sanding Barrels



HCS2036-01-022



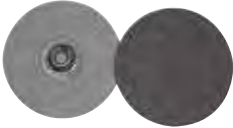



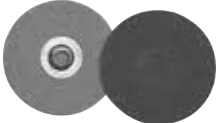
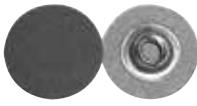
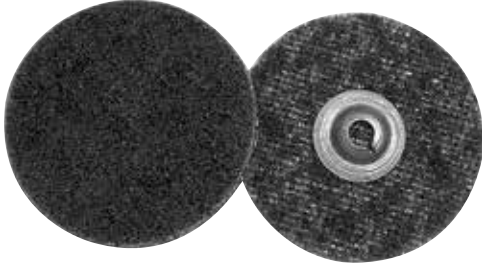
The HCS2036-01-022 Grinder Motor is designed to reduce vibration and operate as quietly as possible while still providing substantial power. This is accomplished by using precision parts, high-quality bearings and elastomer housings.

Specifications:	
Weight	- 1.25lbs (0.6kg)
Height	- 6.9in (17.5cm)
RPM	- 20,000
Exhaust	- Front
Collet Size	- 0.25in (6.35mm)
Abrasives Capacity	- 0.75in (19.1mm) Carbide Bur, 1.5in (38.1mm) Mounted Wheel



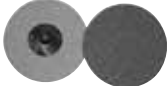
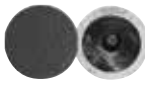
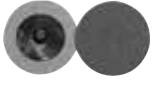

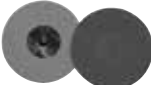
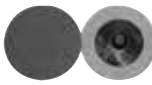
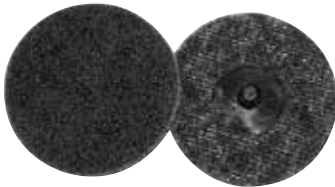
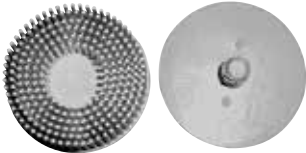
Sanding Barrels						
Description	Image		Part Number	Overall Diameter		Grit
Grinder - Barrel Attachment for Sanding Disks			HCS2036-01-025	0.5in x 0.5in (12.7mm x 12.7mm) 0.75in x 1in (19.1mm x 2.54cm) 1in x 1in (25.4mm x 2.54cm)	1.5in x 1.5in (3.81cm x 3.81cm) 2in x 1.5in (5.08cm x 3.81cm)	
Sanding Barrels			HCS2036-01-027	1in x 1in (2.54cm x 2.54cm)		180
			HCS2036-01-077	1in x 1in (2.54cm x 2.54cm)		120
			HCS2036-01-075	0.5in x 0.5in (12.7mm x 12.7mm)		120
			HCS2036-01-080	0.5in x 0.5in (12.7mm x 12.7mm)		80
			HCS2036-01-076	0.75in x 1in (19.1mm x 2.54cm)		120
			HCS2036-01-081	0.75in x 1in (19.1mm x 2.54cm)		80
			HCS2036-01-078	1.5in x 1.5in (3.81cm x 3.81cm)		120
			HCS2036-01-082	1.5in x 1.5in (3.81cm x 3.81cm)		80
			HCS2036-01-079	2in x 1.5in (5.08cm x 3.81cm)		120
			HCS2036-01-083	2in x 1.5in (5.08cm x 3.81cm)		80

TOOLS & STORAGE

Grinder Motor Sanding Disks / Bayonets

Sanding Disks and Bayonets - Quick Connect Lock - TS Mount					
Description	Image		Part Number	Overall Diameter	Grit
Sanding Pad Holders Sanding Disks			HCS2036-01-028	2in (5.08cm)	
	-028	-029	HCS2036-01-029	1in (2.54cm)	
Sanding Disk Bayonets			HCS2036-01-030	2in (5.08cm)	80
	-030	-031	HCS2036-01-031	1in (2.54cm)	80
			HCS2036-01-040	1in (2.54cm)	120
	-040	-041	HCS2036-01-041	2in (5.08cm)	120
			HCS2036-01-032	2in (5.08cm)	180
	-032	-033	HCS2036-01-033	1in (2.54cm)	180
Surface Reconditioning Disks (Nylon Pads)			HCS2036-01-117A	1in (2.54cm)	Fine
			HCS2036-01-117B	2in (5.08cm)	Fine
			HCS2036-01-118A	1in (2.54cm)	Med
			HCS2036-01-118B	2in (5.08cm)	Med
			HCS2036-01-119A	1in (2.54cm)	Coarse
			HCS2036-01-119B	2in (5.08cm)	Coarse





Grinder Motor Sanding Disks / Bayonets

Sanding Disks and Bayonets - Roloc™ - TR Mount					
Description	Image		Part Number	Overall Diameter	Grit
Sanding Pad Holders Sanding Disks			HCS2036-02-028	2in (5.08cm)	
			HCS2036-02-029	1in (2.54cm)	
Sanding Disk Bayonets			HCS2036-02-030	2in (5.08cm)	80
			HCS2036-02-031	1in (2.54cm)	80
			HCS2036-02-040	1in (2.54cm)	120
			HCS2036-02-041	2in (5.08cm)	120
			HCS2036-02-032	2in (5.08cm)	180
			HCS2036-02-033	1in (2.54cm)	180
Surface Reconditioning Disks (Nylon Pads)			HCS2036-02-117A	1in (2.54cm)	Fine
			HCS2036-02-117B	2in (5.08cm)	Fine
			HCS2036-02-118A	1in (2.54cm)	Med
			HCS2036-02-118B	2in (5.08cm)	Med
			HCS2036-02-119A	1in (2.54cm)	Coarse
			HCS2036-02-119B	2in (5.08cm)	Coarse
Bristle Reconditioning Disks (Rubber Pads)			HCS2036-08-250	2in (5.08cm)	50
			HCS2036-08-280	2in (5.08cm)	80
			HCS2036-08-220	2in (5.08cm)	120

¹Roloc™ is a registered trademark of the 3M Corporation.

Grinder Motor Cut-Off Wheel / Stones

Grinder Motor Accessories and Attachments

Description	Image	Part Number	Overall Diameter	Grit
Arbor		HCS2036-01-092	0.25in (6.4mm)	
Fiberglass Cut-Off Wheel		HCS2036-01-087	3in (7.62cm)	
Grinder Stone Barrel Zirconia Alumina Points		HCS2036-01-023	1in x 1.125in (2.54cm x 3.81cm)	30
Grinder Stone Mushroom Zirconia Alumina Points		HCS2036-01-024	0.75in x 1.125in (19.1mm x 2.86cm)	30

Orbital Sander



HCS2036-01-100



The HCS2036-01-100 Random Orbital Sander is designed to help the end-user run a clean operation. This tool, along with the HCS2036-01-022 Grinder Motor, come standard with oilless blades, making it a clean operating tool.

Also available with vacuum (HCS2036-01-100-VAC), eliminating inhalation and mess of particles from sanding.

Specifications:

<i>Weight</i> - 2.4lbs (1.1kg)
<i>Height</i> - 4.2in (10.7cm)
<i>Length</i> - 5.3in (13.5cm)
<i>RPM</i> - 10,000
<i>Sanding Pad</i> - 5in (12.7cm)
<i>Exhaust</i> - Rear (or vacuum)

Random Orbital Sander Accessories and Attachments

Description	Image	Part Number	Overall Diameter	Grit
Sandpaper	 For use with sander shown above	HCS2036-01-084	5in (12.7cm)	80
		HCS2036-01-085	5in (12.7cm)	120
	 For use with HCS2036-01-070-VAC	HCS2036-01-111	5in (12.7cm)	80
		HCS2036-01-112	5in (12.7cm)	120

Belt Sander / Cleco® Pliers



The HCS2036-06-001 Belt Sander is a right angle sander used for contouring honeycomb when performing a metal bond repair.

Specifications:
Weight - 1.4lbs (1.1kg)
Length - 11.3in (13.5cm)
RPM - 20,000
Sanding Pad - 0.5in x 12in (12.7mm x 30.48cm)
Exhaust - Front

Belt Sander Accessories and Attachments

Description	Image	Part Number	Overall Diameter	Grit
Sanding Belts		HCS2036-06-001-80	0.5in x 12in (12.7mm x 30.48cm)	80
		HCS2036-06-001-120	0.5in x 12in (12.7mm x 30.48cm)	120



HCS2036-01-050










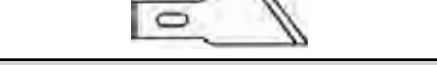

The HCS2036-01-050 Cleco® Pliers are constructed out of top quality forged steel and nickel-plated to resist wear and tear. This manual plier makes for ease of operation when installing Cleco® fasteners.

Cleco® Pliers Accessories and Attachments








Description	Image	Part Number	Overall Diameter	Grip	Size Number
Clecos *Also available as a kit. HCS2036-06-008 (kit includes 10 each)		HCS2036-01-045A	.09in (2.5mm)	0.5in (12.7mm)	#40
		HCS2036-01-045	0.125in (3.2mm)	0.5in (12.7mm)	#30
		HCS2036-01-046	0.16in (4.0mm)	0.5in (12.7mm)	#21
		HCS2036-01-047	0.19in (4.8mm)	0.5in (12.7mm)	#10
		HCS2036-01-048	0.25in (6.4mm)	0.25in (6.4mm)	#10
Cleco® Side Clamp Grip		HCS2036-06-009	0.75in x 0.5in (19.1mm x 12.7mm)		

TOOLS & STORAGE

Additional Repair Tools and Accessories











Additional Repair Tools and Accessories			
Description	Image	Part Number	Details
Soft Touch Shears		HCS2036-01-053	Cushion Grip Left/Right Handed Use Spring Action Adjustable Rivet NOT for cutting Kevlar™
Kevlar™ Shears		HCS2036-01-053K	8in - High Leverage Serrated Edge for Kevlar™
Kevlar™ Shears		HCS2036-01-186	11in - Left / Right Shears Ideal for Cutting Kevlar™
Kevlar™ Shears		HCS2036-01-187	8in - High Leverage Serrated Edge for Kevlar™
Aviation Snips- Left Cut*		HCS2036-06-011B	0.8 lbs (0.36kg)
Straight Cut*		HCS2036-06-011A	0.8 lbs (0.36kg)
Right Cut* *Also available as a kit: HCS2036-06-011		HCS2036-06-011C	0.8 lbs (0.36kg)
Honeycomb Core Knife		HCS2036-01-039	Blade: 4in x 1.75in (10.2cm x 3.2cm) Leather Handle
Retractable Utility Knife		HCS2036-01-051	Three Blade Positions Aluminum Diecast Handle - Gray
Step-Ply Cutting Knife		HCS2036-01-120A	Handle: Aluminum Diameter: 0.44in (1.1cm) Length: 4.61in (11.9cm)
Step-Ply Cutting Knife		HCS2036-01-120B	Handle: Plastic Diameter: 0.75in (1.9cm) Length: 4.375in (11.1cm)
Step-Ply Cutting Knife Blades *Also available as a kit: HCS2036-01-120		HCS2036-01-120-18	Chiseling Blade Length: 1.81in (4.6cm)
		HCS2036-01-120-19	Straight Cutting Blade Length: 1.63in (4.1cm)
		HCS2036-01-120-24	Detail Cutting Blade Length: 1.56in (4.0cm)

Additional Repair Tools and Accessories

Additional Repair Tools and Accessories			
Description	Image	Part Number	Details
Cushion Grip Peel Pliers		HCS2036-06-007	Length: 6.5in (16.5 cm) Jaw: 1in (2.5 cm) Nose Type: Regular
Thermocouple Wire Stripper		HCS2036-01-049	One light squeeze strips wire clean up to 0.875in (2.2 cm)
Magnifier		HCS2036-01-067	Used to determine fiber alignment during ply removal
Pocket Rule		HCS2036-01-132	Stainless Steel 6in x 0.5in (15.24cm x 12.7mm) Metric and English
Air Driven Vacuum Cleaner		HCS2036-01-069	Venturi Design with 1in ID 12in (30.5 cm) Rigid Tube 0.25in Inlet 0.53lbs (0.24kg)
Blue Applicator		HCS2036-01-086	Used for applying liquid laminating resin during a wet lay-up procedure to smooth and compact pre-preg materials. Also used to smooth paste adhesives or fillers.
Sweep Kit (7 pieces)		HCS2036-01-055	Plastic Polyethylene Squeegee used for applying liquid laminating resin to saturate dry fabric during a wet lay-up procedure to smooth and compact prepreg materials during hand lay-up process. Also used to smooth paste adhesives or fillers.

TOOLS & STORAGE

Additional Repair Tools and Accessories

Additional Repair Tools and Accessories			
Description	Image	Part Number	Details
Material Roller		HCS2036-01-054	2in (5.1cm) Wide Steel Roller
Fiberglass Roller		HCS2036-01-121	0.5in x 3in Aluminum Roller (1.27cm x 7.6cm)
Fiberglass Replacement Rollers		HCS2036-01-121A	0.5in x 3in Aluminum Roller (1.27cm x 7.6cm)
Fiberglass Replacement Rollers		HCS2036-01-121B	0.5in x 3in Plastic Roller (1.27cm x 7.6cm)
Tap Hammer		HCS1104-01	Aluminum Construction Handle: 8in (20.3 cm) Head: 0.5in x 1.5in (1.3cm x 3.8cm)
Scribe		HCS2036-01-114	Used to mark metals for processing Length: 10in (25.4cm)
Auto Center Punch		HCS2036-06-006	Fully adjustable heavy and light marking Length: 5.5in (13.97cm) Handle Diameter: 0.5in (12.7mm) *Point Diameter: .03in (.794mm)
Replacement Punch		*HCS2036-06-006A	* Point Diameter: .03in (.794mm)
Insert Closing Tool		HCS2036-07-003A	Used on floor panel inserts Diameter: 1in (2.54cm) Pilot Diameter: 0.1875in (4.8mm)
3-way Air Manifold		HCS2036-01-088	3 NPT Female Threads - 0.25in (6.35mm) 1 NPT Female Thread - 0.375in (9.5mm)

Composite Repair Safety Items

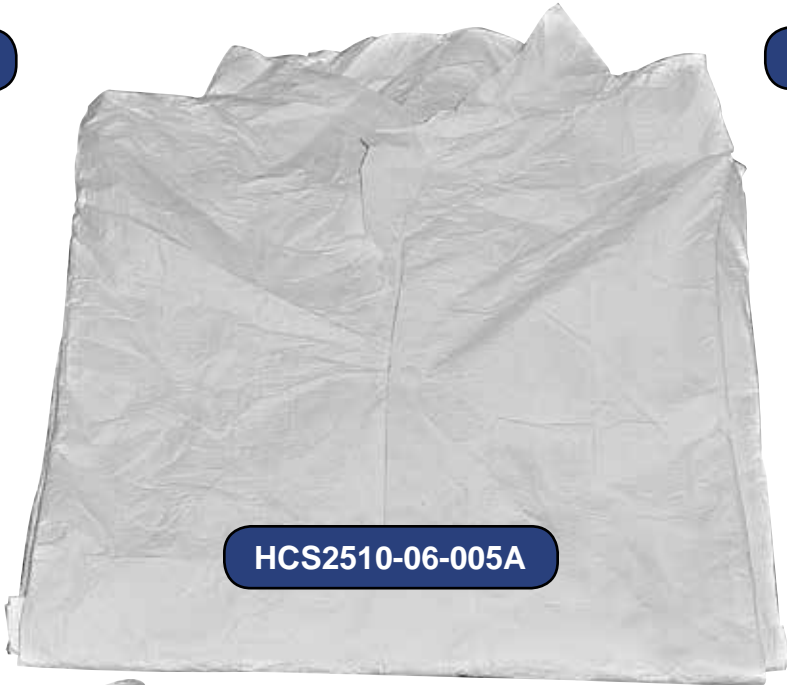
Our Composite Repair Safety Items provide your maintenance personnel with all the materials necessary for a safe repair.

Composite Repair Safety Items		
Description	Part Number	Unit of Issue
Mask, Dust	HCS2510-06-001A	Box of 20
Glasses, Safety	HCS2510-06-002A	EA
Ear Plugs	HCS2510-06-003A	Box of 50
Gloves, Nylon Inspection, Lint Free, White (specify size when ordering)	HCS2510-06-004A	Box of 12 pairs (S, M, L, XL)
Gloves, Latex, Powder Free (specify size when ordering)	HCS2510-06-004B	Box of 100 (S, M, L, XL)
Coveralls, Tyvek (specify size when ordering)	HCS2510-06-005A	EA - S, M, L, XL

HCS2510-06-004B



HCS2510-06-004A



HCS2510-06-005A



HCS2510-06-001A



HCS2510-06-002A



HCS2510-06-003A

TOOLS & STORAGE

Customized Training Services

Training is an integral part of our “Composite Repair Solutions” philosophy which includes training, equipment and material. Courses are designed to meet a range of student needs, including those who are new to the composite repair industry and seasoned professionals in need of refresher training on the latest composite repair techniques. The instructors have experience in practical applications involving composite repair, and our students come from organizations which represent some of the leading names in a variety of industries.

Students will be using the actual tools, equipment, and materials required in the composite repair profession. Training courses are hands-on as well as theoretical, providing students with the skills and knowledge necessary to advance their careers and enhance the capabilities of their represented organizations. With HEATCON you will receive the best training in the composites industry.

Fundamentals of Composites

This course is best suited for students wishing to be exposed to the exciting technology of composite materials and its career opportunities. Topics include basic composites history and technology, with a strong emphasis on laboratory projects. After receiving a certificate of completion, students may choose to take more advanced composite courses. This course may serve as an overview or as a prerequisite for further study.

Students will acquire a basic understanding of composite industry terminologies and technologies through laboratory experiences.

What you will learn:

- Composite terminologies
- Types of composites and advanced composites in industry
- Familiarization with composite practices
- Advantages of composites
- Hygiene and safety
- Issues associated with composite repairs



Hands-on training exercises:

Wet layup practices

Mixing of two-part resins

Pre-impregnated reinforcement system practice (“prepregs”)

Use of equipment for preparing and curing composites



Composite Repair I (CRI)

This course is designed for aircraft repair technicians who desire to learn more about the fundamentals of advanced composite materials manufacturing and repair techniques and have, for example, a background in sheet metal with some exposure to composites technology.

The hands-on exercises are extensive, practical, and allow students to work with advanced composite materials including fiberglass, carbon fiber, and aramid fibers in their individual projects. Students will have the opportunity to work with various core materials including Nomex® honeycomb and high and low density foams. Fabricating a composite panel using these materials to learn manufacturing techniques and elevated temperature curing processes using the “hot bond” method is also part of the course curriculum offered in Composite Repair I. Discussions and practical exercises will include proper use of the HEATCON Composite Systems Hot Bonders and accessories used throughout the world. These composite panels will be damaged and afterwards repaired, using basic repair techniques and various lay-up repair materials and processes. The final repaired parts will be inspected to determine the quality of the repair.

What you will learn:

- Advantages and disadvantages of composite structures.
- Fabrication methods
- Resin matrix systems properties
- Fabrication
- Curing methods
- Inspection criteria
- Health and safety issues
- Principles of tooling
- Repair methods
- Damage assessment and classification
- Introduction to determining unknown lay-ups
- Drying moisture-contaminated honeycomb cores
- Bagging techniques for on and off-aircraft repairs
- Introduction to programming and use of composite repair kits
- Introduction to dealing with contaminated structures
- Heat management issues
- Bagging techniques for on and off-aircraft repairs
- Introduction to programming and use of composite repair kits
- Introduction to dealing with contaminated structures
- Heat management issues: Heat blanket and thermocouple problems

Hands-on training exercises:

Component lay-up using prepreg materials, including: sandwich panels in carbon fiber unidirectional tape, fiberglass and aramid fiber cloth panels, ply orientation, warp direction, stacking vs. nesting, material cutting and handling, honeycomb and foam core installation

Component lay-up using fiberglass dry cloth and liquid epoxy resin materials, including: fiber orientation, lay-up, resin mixing procedures, health/safety concerns, controlling fiber-resin ratios, vacuum bagging

Vacuum bagging: materials and processes, bleeder/breather schedules, bridging, debulking, leak checking, potential problems, use of caul plates, use of thermocouples, use of an ultrasonic leak detector

Curing processes: ramp rates, vacuum schedule, oven cures, and potential problems

Repairs: damage removal, scarf preparation, skin repair fabrication, use of wet resins and cloth for repairs, core plug repairs

Introduction to the use of manufacturers' repair instructions

Introduction to vacuum bagging (without crushing fragile structures)

Introduction to the inspection of repaired area

Composite Repair II (CRII)

This course is designed to follow Composite Repair I course and it is therefore assumed the student has mastered the learning objectives necessary to be successful in Composite Repair II. Concentration for this course is focused on more challenging repair situations that an aircraft mechanic may encounter.

Emphasis is on practical repair procedures with less time being spent in the classroom. Students will be given a variety of projects to expand their knowledge of composite components and structures. These projects will allow the students to determine the manufacturing methods, extent of damage, ply orientation and lay-up of an unknown structure, as well as preparing the component for the repair process which includes, for example, removing liquid contamination. Vacuum bagging of complex shapes is another challenge presented to students.

Students will continue to be exposed to the HEATCON hot bond equipment, which is an essential part of the training in composite repair. Determining the best repair method and carrying out the complete repair will help prepare the student by providing them with a better understanding of repair solutions in practice. Programming HEATCON Composite Systems (HCS) "hot-bonders" to carry out these repairs is an integral part of this course. Students will become familiar with the operation and advantages of each HCS bonders.

Hands-on training exercises:

Damage identification and assessment

Core removal

Unknown lay-up determination; repair procedure determination

Use of manufacturers' repair instructions

Repair scarfing: including curved surfaces

Vacuum bagging (without crushing fragile structures)

Thermocouple welding and repair

Cure programming and monitoring using portable composite repair sets

Introduction to metal bonding

Inspection of repaired area

What you will learn:

- Determining unknown lay-ups
- Drying moisture-contaminated honeycomb cores
- Bagging techniques for on and off-aircraft repairs
- Programming and use of composite repair sets
- Dealing with contaminated structures
- Handling heat blanket and thermocouple problems
- Repair design considerations



Composite Repair I and II

WEEK ONE DETAILS:

The hands-on exercises are extensive, practical, and allow students to work with advanced composite materials including fiberglass, carbon fiber, and aramid fibers in their individual projects. Students will have the opportunity to work with various core materials including Nomex® honeycomb and high and low density foams. Fabricating a composite panel using these materials to learn manufacturing techniques and elevated temperature curing processes using the “hot bond” method is also part of the course curriculum offered in Composite Repair I. Discussions and practical exercises will include proper use of the HEATCON Composite Systems Hot Bonders and accessories used throughout the world. These composite panels will be damaged and afterwards repaired, using basic repair techniques and various lay-up repair materials and processes. The final repaired parts will be inspected to determine the quality of the repair.

WEEK TWO DETAILS:

Emphasis is on practical repair procedures with less time being spent in the classroom. Students will be given a variety of projects to expand their knowledge of composite components and structures. These projects will allow the students to determine the manufacturing methods, extent of damage, ply orientation and lay-up of an unknown structure, as well as preparing the component for the repair process which includes, for example, removing liquid contamination. Vacuum bagging of complex shapes is another challenge presented to students.

Students will continue to be exposed to the HEATCON hot bond equipment, which is an essential part of the training in composite repair. Determining the best repair method and carrying out the complete repair will help prepare the student by providing them with a better understanding of repair solutions in practice. Programming HEATCON Composite Systems (HCS) “hot-bonders” to carry out these repairs is an integral part of this course. Students will become familiar with the operation and advantages of each HCS bonders.

Hands-on training exercises:

- Component lay-up using prepreg materials
- Component lay-up using fiberglass dry cloth and liquid epoxy resin materials
- Damage identification and assessment
- Curing processes
- Core removal
- Unknown lay-up determination; repair procedure determination
- Use of manufacturers’ repair instructions
- Repair scarfing: including curved surfaces
- Vacuum bagging (without crushing fragile structures)
- Thermocouple welding and repair
- Cure programming and monitoring using portable composite repair sets
- Introduction to metal bonding
- Inspection of repaired area

What you will learn:

- All learning points listed under Composite Repair I and Composite Repair II



Metal Bonding

A basic familiarity with sheet metal work and repair techniques is helpful, but not required.

This course provides a solid foundation in the principles of adhesively bonded repairs in aluminum structures, including both lap joints and face sheet bonding in sandwich structures with aluminum honeycomb cores. The emphasis in this course is on metallic structures only, and many aluminum-specific surface preparation and bonding methods are covered in detail.

The proper surface preparation of aluminum and aluminum honeycomb for structural adhesive bonding is a complex subject involving many different processes. For example, some techniques which improved durability have also increased health and safety risks, as well as created hazardous waste disposal problems. Other techniques mitigate these concerns, but introduce additional complexities and process control issues.

These processes are discussed extensively and the students will perform some of these operations while building test panels. Different surface preparation techniques, adhesives, and curing methods are introduced. Panels will be cured and destructively tested to assess the effects of anomalies introduced during the metal bonding preparation.

Hands-on training exercises:

Use equipment associated with performing Metal Bonding operations, including, for example, common hand tools, anodizing equipment, and hot bonders

Demonstrate and/or describe inspection methods, such as visual and tap testing

Evaluate different types of damage

Demonstrate damage removal and surface preparation

Perform general metal bonding repairs, including application of repair parts and adhesives, and curing processes

What you will learn:

- Fundamentals of structural adhesives
- Various methods for surface preparation of aluminum and other metals
- Bond line integrity, thickness and contamination considerations
- Aluminum honeycomb core material types and cleaning
- Repair of damaged aluminum sandwich structures
- Adhesive cure cycles
- Vacuum bagging
- Destructive and non-destructive testing
- Health and safety issues



Tooling Workshop

Aircraft composite repair or previous composite material handling and repair experience is required to participate in this workshop.

This workshop will provide an opportunity for participants to be exposed to fundamental repair tooling concepts, in a laboratory environment. Students will be introduced to shop procedures and practices. The workshop is interactive between the instructor and participants, and will be modified based on the student background, experience and expectations.

Issues to consider in the repair environment include porosity measures, thermal expansion during following cure operations, surface preparation, and surface coating. Different materials will be discussed in addition to describing techniques for establishing tool contours to maintain configuration control of the final repaired product. Participants have an opportunity to build tooling in a hands-on, practical application, experiencing the total development cycle.

Hands-on training exercises:

Vacuum bagging process

Usage of single and dual zone Hot Bonders, heat blankets and thermocouple in curing composite tooling materials

Mixing and applying of tooling epoxy resins

Fabrication of composite wet lay up and prepreg tooling structures

What you will learn:

- Terminology, history and current developments in composites technology
- Shop procedures and practices, health and safety issues
- Composite tooling materials handling
- procedures
- Proper storage and handling of composite fabrics, materials and resin systems
- Composite curing techniques: Oven & Hot Bonders



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