



aerospace  
 climate control  
 electromechanical  
 filtration  
 fluid & gas handling  
 hydraulics  
 pneumatics  
 process control  
 sealing & shielding



# Fluid Control Express

Modular Solenoid Valves Shipped Next Day



ENGINEERING YOUR SUCCESS.

# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 1 800 C-Parker (1 800 272 7537).



## AEROSPACE

### Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

### Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



## CLIMATE CONTROL

### Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

### Key Products

- CO<sup>2</sup> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



## ELECTROMECHANICAL

### Key Markets

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

### Key Products

- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



## FILTRATION

### Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

### Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



## FLUID & GAS HANDLING

### Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

### Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## HYDRAULICS

### Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

### Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



## PNEUMATICS

### Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

### Key Products

- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors



## PROCESS CONTROL

### Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

### Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



## SEALING & SHIELDING

### Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

### Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management



ENGINEERING YOUR SUCCESS.

# PARKER FLUID CONTROL DIVISION

## Who We Are

We are the Fluid Control Division and are part of the Climate and Industrial Control Group of Parker Hannifin Corporation. Our primary product offerings are solenoid valves and systems used for the control of liquid and gas medias.

With both the Skinner® and Gold Ring™ product lines, we are able to tackle a wide variety of tough applications demanding high performance and long life, while also providing the flexibility to service your MRO and OEM replacements.

## Where We Are

The Fluid Control Division of North America (FCD) is headquartered in New Britain, CT. Along with Customer Service, Product Engineering, Research and Development, Marketing, Application Support, and Product Management, we manufacture the Skinner® Valve product line at this location.

In our Madison, MS, Facility, we manufacture our core Gold Ring™ valve offering and support a full line of specialty valves, value added assemblies, and manifolds.

The Fluid Control Division of Parker Hannifin Corporation has a global manufacturing and sales presence through our European Headquarters and manufacturing in Geneva, Switzerland, and Gessate, Italy, and also through manufacturing locations in Korea, China, and Brazil.

## Our History

For over 60 years, Parker Hannifin, as a global leader in motion and control technologies, has been a lead innovator and supplier in the solenoid valve industry for a variety of installations and applications. Our valves are supplied by Parker under the Jackes Evans, Skinner® and Gold Ring™ trade names and are capable of on/off control for a wide variety of liquids and gases.

## Markets

Our products and solutions are typically designed for Process Control, Transportation, Commercial Equipment, Cooling & Climate Control, Food & Beverage and Industrial & Automation markets.

## Features and Benefits

With our modular concept of valves, coils and electrical components, we can help you achieve greater flexibility for your inventory and work in process with limited stock.



Fluid Control Division Headquarters, New Britain, CT.



Fluid Control Division Facility, Madison, MS.

# HOW TO USE THE CATALOG

## Navigation: 5 Easy Steps

2-Way

2-Way Direct Acting - Normally Closed - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number <b>1</b>	Coil Chart <b>2</b>
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/8	1/8	.31	0	365	365	365	10	165	PCTFE	7121KBN1NF00	7
1/4	1/8	.31	0	365	365	365	10	165	PCTFE	7121KBN2NF00	7
1/4	1/8	.31	0	145	145	145	10	185	FKM	7121KBN2NV00	7
1/4	5/32	.52	0	120	120	120	10	185	FKM	7121KBN2QV00	7
1/4	13/64	.76	0	80	80	80	10	185	FKM	7121KBN2SV00	7
<b>DC VOLTAGE</b>											
1/8	1/8	.31	0	125	125	125	10	165	PCTFE	7121KBN1NF00	7
1/4	1/8	.31	0	125	125	125	10	165	PCTFE	7121KBN2NF00	7
1/4	1/8	.31	0	125	125	125	10	185	FKM	7121KBN2NV00	7
1/4	5/32	.52	0	60	60	60	10	185	FKM	7121KBN2QV00	7
1/4	13/64	.76	0	30	30	30	10	185	FKM	7121KBN2SV00	7
1/2	7/16	2.5	0	17.5	17.5	17.5	10	185	FKM	7121KBN44V00	7

### COILS 3

Please refer to the coil chart number within the catalog to find the correct coil in the chart below.

Gold Ring™	Voltage	1/2" NPT Conduit*	DIN 43650A/504403	
CHART 1 6 watts, Class F	24/60 120/60-110/50 240/60-220/50	AFAC01 AFAC05 AFAC15	- - -	AFPH05 AFPH15
CHART 4 11 watts, Class F	24/60 120/60-110/50 240/60-220/50	CFAC01 CFAC05 CFAC15	- - -	CFPH05 CFPH15
CHART 5 16 watts, Class F	24/60 120/60-110/50 240/60-220/50	DFAC01 DFAC05 DFAC15	- - -	DFPH05 DFPH15
CHART 6 11.5 watts, Class F	12VDC 24VDC	3FAC75 3FAC80	- -	3FPH75 3FPH80
Skinner®	Voltage	1/2" NPT Conduit*	DIN 43650A/504403	Hazardous**
CHART 7 10 watts, Class F	24/60 120/60-110/50 240/60-220/50 12VDC 24VDC	C11B2 C11P3 C11Q3 C11C1 C11C2	D100B2 D100P3 D100Q3 D100C1 D100C2	H111P3 H111Q3 H111C1 H111C2
CHART 7 10 watts, Class H	120/60-110/50 240/60-220/50 12VDC 24VDC	C22P3 C22Q3 C22C1 C22C2	- - - -	H22P3 H22Q3 H22C1 H22C2
CHART 8 22 watts, Class H	120/60-110/50 12VDC 24VDC	C32P3 C32C1 C32C2	- - -	H32P3 H32C1 H32C2
Skinner®	Voltage	1/2" NPT Conduit*	DIN 43650A/504403	18" Leads
CHART 9 AC 10 watts*** DC 8 watts Class F	24/60 120/60-110/50 240/60-220/50 12VDC 24VDC	CAE CAF CAG CAB	- - - -	BAE BAF BAG BAB
CHART 9 AC 10 watts*** DC 8 watts Class H	24/60 120/60-110/50 240/60-220/50 12VDC 24VDC	- - - -	DAE DAF DAG DAB	- - - -

\* 1/2" Lead Wires, Norma 1, 2, 3, 4, 6X  
\*\* Hazardous location use dependent. Class I, Div I & II, Groups A, B, C, D; Class II, Div I, Groups E, F, G; Class III, Div I  
\*\*\* 8.5 Watt For 2-Way Normally Closed AC

1. Choose your pressure vessel
2. Choose your coil reference number
3. Find your coil reference number on the Coil Chart
4. **Place order for pressure vessel and coil as separate items.**
5. Request distributor to place order via PHConnect.

### Flip out the tab attached to the back cover to reveal Coil Chart.

The stated wattage represents a nominal value. The actual wattage may vary depending on coil/pressure vessel selection.

The pressure vessel and solenoid coil are boxed and shipped separately.

Quantities of 10 pieces or less will ship next day.

Quantities of 11-50 pieces will ship in 5 working days.

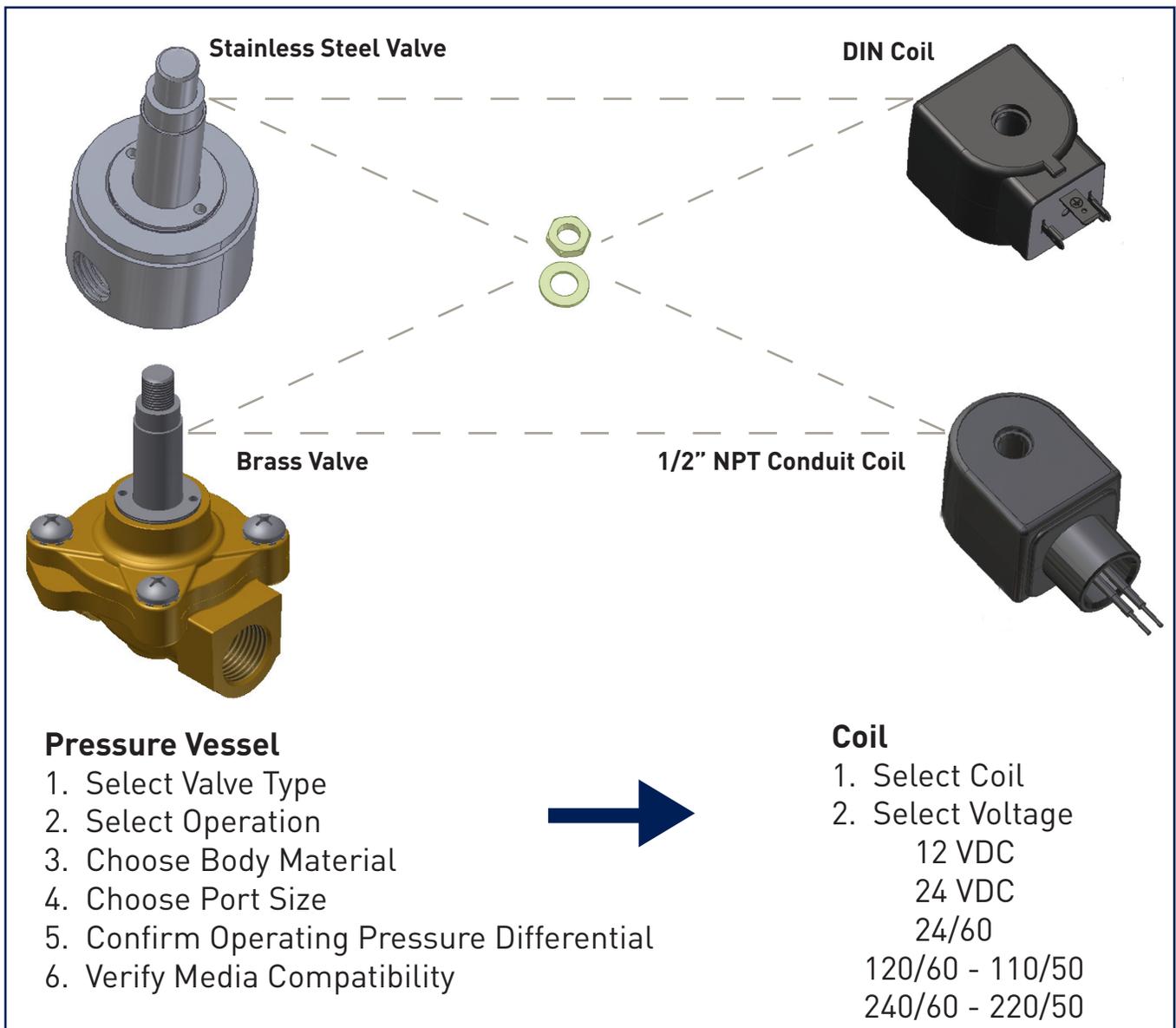
★ Quantities greater than 51 pieces may be scheduled.

Images shown in this catalog are representative only.



# HOW TO DESIGN YOUR SOLUTION

**Modularity:** Order a pressure vessel and mix and match the coils to make endless product capabilities.

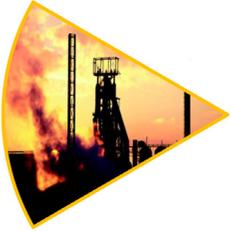


## Result:

Solenoid valves and coils that ship next day meet your application needs and have a two year warranty.

Coils assembled to pressure vessels in the field will carry  recognized approval.

**Together, we can**  
 control virtually  
 any media, in  
 any application,  
 under any  
 condition.



- Process Control**
- Valve Actuation
  - Oil & Gas
  - Chemical Processing
  - Pharmaceutical

- Transportation**
- Trucks
  - Trains
  - Bus & Coach
  - Marine
  - Agriculture



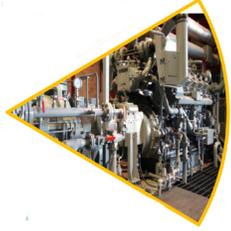
- Commercial Equipment**
- Medical Equipment
  - Water Purification
  - Sterilizers
  - Welding

- Cooling & Climate Control**
- Water Dispensing
  - Cooling Systems
  - Irrigation



- Food & Beverage**
- Coffee Machines
  - Sparkling Water
  - Beverage Dispensing
  - Water Dispensing

- Industrial & Automation**
- Compressors
  - Blow Molding
  - Textile



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For complete valve specifications including materials of construction, consult the General Purpose Solenoid Valves Catalog FCDFL0911, available for download at [www.parker.com/fcd](http://www.parker.com/fcd), under Literature.

## 2-Way Direct Acting - Normally Closed - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/8	1/8	.31	0	365	365	365	10	165	PCTFE	7121KBN1NF00	7
1/4	1/8	.31	0	365	365	365	10	165	PCTFE	7121KBN2NF00	7
1/4	1/8	.31	0	145	145	145	10	185	FKM	7121KBN2NV00	7
1/4	5/32	.52	0	120	120	120	10	185	FKM	7121KBN2QV00	7
1/4	13/64	.76	0	80	80	80	10	185	FKM	7121KBN2SV00	7
1/2	7/16	2.5	0	17.5	17.5	17.5	10	185	FKM	7121KBN44V00	7
<b>DC VOLTAGE</b>											
1/8	1/8	.31	0	125	125	125	10	165	PCTFE	7121KBN1NF00	7
1/4	1/8	.31	0	125	125	125	10	165	PCTFE	7121KBN2NF00	7
1/4	1/8	.31	0	125	125	125	10	185	FKM	7121KBN2NV00	7
1/4	5/32	.52	0	60	60	60	10	185	FKM	7121KBN2QV00	7
1/4	13/64	.76	0	30	30	30	10	185	FKM	7121KBN2SV00	7
1/2	7/16	2.5	0	5	5	5	10	185	FKM	7121KBN44V00	7



## 2-Way Direct Acting - Normally Closed - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/8	1/8	.28	0	200	200	200	10	185	NBR	71215SN1MN00	7
1/8	3/64	.06	0	950	950	950	8.5	240	FKM	20CC02EV4	9
1/8	1/16	.10	0	625	625	625	8.5	240	FKM	20CC02GV4	9
1/8	3/32	.22	0	320	320	320	8.5	240	FKM	20CC02LV4	9
1/8	7/64	.28	0	245	245	245	8.5	240	FKM	20CC02MV4	9
1/8	1/8	.32	0	175	175	175	8.5	240	FKM	20CC02PV4	9
1/8	5/32	.38	0	100	100	100	8.5	240	FKM	20CC02QV4	9
1/4	1/32	.02	0	3000	3000	3000	10	185	Nylon	71216SN2BL00	7
1/4	3/64	.037	0	1500	1500	1500	10	185	PTFE	71216SN2FU00	7
1/4	3/64	.06	0	450	450	450	10	185	NBR	71215SN2EN00	7
1/4	1/16	.10	0	350	350	350	10	185	NBR	71215SN2GN00	7
1/4	3/32	.18	0	275	275	275	10	185	NBR	71215SN2KN00	7
1/4	1/8	.28	0	200	200	200	10	185	NBR	71215SN2MN00	7
1/4	5/32	.40	0	110	110	110	10	185	NBR	71215SN2QN00	7
1/4	3/16	.50	0	80	80	80	10	185	NBR	71215SN2SN00	7
1/4	1/4	.75	0	40	40	40	10	185	NBR	71215SN2VN00	7
1/4	5/16	1.1	0	20	20	20	10	185	NBR	71215SN21N00	7
3/8	3/8	2.0	0	6	6	6	10	185	NBR	71215SN33N00	7
<b>DC VOLTAGE</b>											
1/8	1/8	.28	0	150	150	150	10	185	NBR	71215SN1MN00	7
1/8	3/64	.06	0	390	390	390	8	240	FKM	20CC02EV4	9
1/8	1/16	.10	0	255	255	255	8	240	FKM	20CC02GV4	9
1/8	3/32	.22	0	130	130	130	8	240	FKM	20CC02LV4	9
1/8	7/64	.28	0	100	100	100	8	240	FKM	20CC02MV4	9
1/8	1/8	.32	0	60	60	60	8	240	FKM	20CC02PV4	9
1/8	5/32	.38	0	30	30	30	8	240	FKM	20CC02QV4	9
1/4	3/64	.06	0	450	450	450	10	185	NBR	71215SN2EN00	7
1/4	1/32	.02	0	2500	2500	2500	10	185	Nylon	71216SN2BL00	7
1/4	1/32	.02	0	3000	3000	3000	22	185	Nylon	71216SN2BL00	8
1/4	3/64	.037	0	1000	1000	1000	10	185	PTFE	71216SN2FU00	7
1/4	3/64	.037	0	1500	1500	1500	22	185	PTFE	71216SN2FU00	8
1/4	1/16	.10	0	350	350	350	10	185	NBR	71215SN2GN00	7
1/4	3/32	.18	0	275	275	275	10	185	NBR	71215SN2KN00	7
1/4	1/8	.28	0	150	150	150	10	185	NBR	71215SN2MN00	7

## 2-Way Direct Acting - Normally Open - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					

### AC VOLTAGE

1/4	3/32	.17	0	300	250	230	11	180	NBR	04F20O1106ACF	4
1/4	3/32	.21	0	175	175	175	10	165	PCTFE	7122KBN2LF00	7
1/4	9/32	.96	0	30	25	20	11	180	NBR	04F20O2118ACF	4

### DC VOLTAGE

1/4	3/32	.21	0	175	175	175	10	165	PCTFE	7122KBN2LF00	7
-----	------	-----	---	-----	-----	-----	----	-----	-------	--------------	---

## 2-Way Direct Acting - Normally Open - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					

### AC VOLTAGE

1/8	3/64	.06	0	230	230	230	10	240	FKM	20CF02EV4	9
1/8	3/32	.20	0	80	80	80	10	240	FKM	20CF02LV4	9
1/4	3/32	.15	0	250	250	250	10	185	NBR	71295SN2KNJ1	7

### DC VOLTAGE

1/8	3/64	.06	0	230	230	230	8	240	FKM	20CF02EV4	9
1/8	3/32	.20	0	80	80	80	8	240	FKM	20CF02LV4	9
1/4	3/32	.15	0	250	250	250	10	185	NBR	71295SN2KNJ1	7



## 2-Way Normally Closed Steam and Hot Water - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Hot Water (PSI)	Steam (PSI)	Lt. Oil 300 SSU (PSI)					
<b>AC VOLTAGE</b>											
1/2	5/8	4.0	0	150	50	-	11	300	EPDM	08FS3C2340ACF	4
1/2	1/2	3.6	1	-	125	-	11	353	PTFE	08FS5C2432ACH	Below
3/4	3/4	5.0	0	150	50	-	11	300	EPDM	12FS3C2348ACF	4
3/4	5/8	5.0	0	100	-	-	10	210	EPDM	72218BN5VE00	7
3/4	3/4	7.4	1	-	125	-	11	353	PTFE	12FS5C2448ACH	Below
1	1	8.8	1	-	125	-	11	353	PTFE	16FS5C2464ACH	Below
1	1	11.7	0	150	-	-	10	210	EPDM	7221GBN64E00	7
1 1/2	1 1/2	22.5	5	150	50	-	6	300	EPDM	24FS4C2380AAF	1



Gold Ring™	Voltage	1/2" NPT Conduit*
11 Watts Class H	24/60	CH4C01
	120/60	CH4C05
	240/60	CH4C15

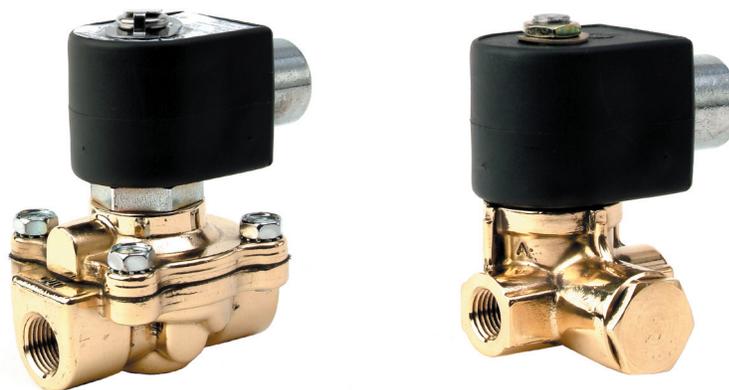
\* 18" Lead Wires, Nema 1, 2, 3, 4, 4X

## 2-Way Internally Pilot Operated & Direct Lift - Normally Closed - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/4	7/16	2.0	3	150	150	150	10	180	NBR	7321KBN2RN00	7
1/4	1/4	.76	5	1500	1500	1500	10	210	PTFE	73216BN2MT00	7
1/4	1/4	.76	5	300	300	300	10	185	NBR	73212BN2MN00	7
1/4	11/32	1.2	5	300	300	300	6	180	NBR	04F25C2122CAF	1
3/8	7/16	2.5	3	150	150	150	10	185	NBR	7321KBN3SN00	7
3/8	5/8	3.0	5	200	135	135	6	180	NBR	06F22C2140AAF	1
3/8	5/8	4.0	0	150	150	150	11	180	NBR	06F23C2140ACF	4
1/2	1/2	2.8	5	300	300	300	10	185	NBR	73212BN4TN00	7
1/2	5/8	4.0	5	200	135	135	6	180	NBR	08F22C2140AAF	1
1/2	19/32	4.4	0	230	230	230	10	185	NBR	7221GBN4VN00	7
1/2	5/8	4.0	5	150	150	150	10	185	NBR	73218BN4UN00	7
1/2	5/8	4.0	0	150	150	150	11	180	NBR	08F23C2140ACF	4
3/4	3/4	5.0	5	125	125	125	6	180	NBR	12F22C2148AAF	1
3/4	3/4	5.0	5	150	150	150	10	185	NBR	73218BN5VN00	7
3/4	3/4	5.0	0	150	150	150	11	180	NBR	12F23C2148ACF	4
3/4	19/32	5.5	0	230	230	230	10	185	NBR	7221GBN51N00	7
1	1	13	5	150	150	100	6	180	NBR	16F24C2164AAF	1
1	1	11.7	0	230	230	230	10	185	NBR	7221GBN64N00	7
1	1	11.7	0	230	230	230	10	185	FKM	7221GBN64V00	7
1	1	12.5	5	230	230	230	10	185	NBR	7321GBN64N00	7
1 1/4	1 1/8	15	5	150	125	100	6	180	NBR	20F24C2172AAF	1
1 1/2	1 1/4	22.5	5	150	125	100	6	180	NBR	24F24C2180AAF	1
2	1 9/16	38.6	5	230	230	230	10	185	NBR	7321GBN99N00	7

## 2-Way Internally Pilot Operated & Direct Lift - Normally Closed - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>DC VOLTAGE</b>											
1/4	7/16	2.0	3	60	60	60	10	185	NBR	7321KBN2RN00	7
1/4	1/4	.76	5	800	800	800	10	210	PTFE	73216BN2MT00	7
1/4	1/4	.76	5	300	300	300	10	185	NBR	73212BN2MN00	7
1/4	11/32	1.2	5	275	275	275	11.5	150	NBR	04F25C2122C3F	6
3/8	7/16	2.5	3	60	60	60	10	185	NBR	7321KBN3SN00	7
3/8	5/6	3.0	5	125	100	100	11.5	150	NBR	06F22C2140A3F	6
1/2	19/32	4.4	0	100	100	100	22	185	NBR	7221GBN4VN00	8
1/2	5/8	4.0	5	150	150	150	10	185	NBR	73218BN4UN00	7
1/2	1/2	2.8	5	300	300	300	10	185	NBR	73212BN4TN00	7
1/2	5/8	4.0	5	125	100	100	11.5	150	NBR	08F22C2140A3F	6
3/4	3/4	5.0	5	100	90	75	11.5	150	NBR	12F22C2148A3F	6
3/4	3/4	5.0	5	150	150	150	10	185	NBR	73218BN5VN00	7
3/4	19/32	5.5	0	100	100	100	22	185	NBR	7221GBN51N00	8
1	1	13.0	5	125	125	125	11.5	150	NBR	16F24C2164A3F	6
1	1	11.7	0	85	85	85	22	185	NBR	7221GBN64N00	8
1	1	11.7	0	85	85	85	22	185	FKM	7221GBN64V00	8
1	1	12.5	5	230	230	230	10	185	NBR	7321GBN64N00	7
1 1/4	1 1/8	15.0	5	125	125	125	11.5	150	NBR	20F24C2172A3F	6
1 1/2	1 1/4	22.5	5	125	125	125	11.5	150	NBR	24F24C2180A3F	6
2	19/16	38.6	5	200	200	200	10	185	NBR	7321GBN99N00	7



## 2-Way Direct Lift - Normally Closed - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/2	5/8	4.0	0	150	150	150	11	180	NBR	08F23C6140ACF	4
1/2	5/8	4.0	0	100	100	100	10	185	FKM	72218RN4UV00	7
3/4	3/4	5.0	0	150	150	150	11	180	NBR	12F23C6148ACF	4
<b>DC VOLTAGE</b>											
1/2	5/8	4.0	0	40	40	40	22	185	FKM	72218RN4UV00	8



## 2-Way Direct Lift - Normally Open - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/2	5/8	4.0	0	150	150	150	11	180	NBR	08F23O2140ACF	4
3/4	3/4	5.5	0	150	150	150	11	180	NBR	12F23O2148ACF	4
<b>DC VOLTAGE</b>											
1/2	5/8	4.0	0	125	125	80	11.5	150	NBR	08F23O2140A3F	6

## 2-Way Direct Lift - Normally Open - Stainless Steel

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/2	5/8	4.0	0	125	125	125	22	185	FKM	72228RN4UV00	8
<b>DC VOLTAGE</b>											
1/2	5/8	4.0	0	125	125	125	22	185	FKM	72228RN4UV00	8

### 3-Way Direct Acting - Normally Closed - Brass

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
	In	Exh.	In	Exh.	Min.	Air, Inert Gas	Water	Light Oil					

#### AC VOLTAGE

1/4	5/64	3/32	.17	.24	0	150	150	150	10	185	FKM	7131KBN2JV00	7
1/4	5/64	1/8	.17	.31	0	150	150	150	10	185	FKM	7131TBN2JV00	7
1/4	3/32	9/64	.24	.38	0	110	110	110	10	185	FKM	7131TBN2LV00	7

#### DC VOLTAGE

1/4	5/64	3/32	.17	.24	0	150	150	150	10	185	FKM	7131KBN2JV00	7
1/4	5/64	1/8	.17	.31	0	150	150	150	10	185	FKM	7131TBN2JV00	7
1/4	3/32	9/64	.24	.38	0	110	110	110	10	185	FKM	7131TBN2LV00	7

### 3-Way Direct Acting - Normally Closed - Stainless Steel

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
	In	Exh.	In	Exh.	Min.	Air, Inert Gas	Water	Light Oil					

#### AC VOLTAGE

1/8	1/16	1/16	.11	.095	0	200	200	200	10	185	NBR	71315SN1GNJ1	7
1/8	3/64	3/64	.05	.05	0	200	200	200	10	240	FKM	30CC02EV4	9
1/8	1/16	1/16	.09	.10	0	130	130	130	10	240	FKM	30CC02GV4	9
1/8	7/64	3/32	.25	.20	0	50	50	50	10	240	FKM	30CC02MV4	9
1/4	3/64	1/16	.062	.095	0	250	250	250	10	185	NBR	71315SN2ENJ1	7
1/4	1/16	1/16	.11	.095	0	200	200	200	10	185	NBR	71315SN2GNJ1	7
1/4	3/32	3/32	.17	.17	0	125	125	125	10	185	NBR	71315SN2KNJ1	7
1/4	1/8	3/32	.23	.17	0	90	90	90	10	185	NBR	71315SN2MNJ1	7

#### DC VOLTAGE

1/8	1/16	1/16	.11	.095	0	200	200	200	10	185	NBR	71315SN1GNJ1	7
1/8	3/64	3/64	.05	.05	0	200	200	200	8	240	FKM	30CC02EV4	9
1/8	1/16	1/16	.09	.10	0	130	130	130	8	240	FKM	30CC02GV4	9
1/8	7/64	3/32	.25	.20	0	50	50	50	8	240	FKM	30CC02MV4	9
1/4	3/64	1/16	.062	.095	0	250	250	250	10	185	NBR	71315SN2ENJ1	7
1/4	1/16	1/16	.11	.095	0	200	200	200	10	185	NBR	71315SN2GNJ1	7
1/4	3/32	3/32	.17	.17	0	125	125	125	10	185	NBR	71315SN2KNJ1	7
1/4	1/8	3/32	.23	.17	0	90	90	90	10	185	NBR	71315SN2MNJ1	7



## 3-Way Direct Acting - Normally Open - Stainless Steel

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
	In	Exh.	In	Exh.	Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>													
1/8	3/64	3/64	.05	.05	0	230	230	230	10	185	FKM	30CF02EV4	9
1/4	3/64	1/16	.05	.10	0	250	250	250	10	185	NBR	71395SN2ENJ1	7
1/4	1/16	1/8	.10	.28	0	150	150	150	10	185	NBR	71395SN2GNJ1	7
<b>DC VOLTAGE</b>													
1/8	3/64	3/64	.05	.05	0	230	230	230	8	185	FKM	30CF02EV4	9
1/4	3/64	1/16	.05	.10	0	250	250	250	10	185	NBR	71395SN2ENJ1	7
1/4	1/16	1/8	.10	.28	0	150	150	150	10	185	NBR	71395SN2GNJ1	7



3-Way

### 3-Way Direct Acting - Multipurpose - Brass

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
	N.C.	N.O.	N.C.	N.O.	Min.	Air, Inert Gas	Water	Light Oil					

#### AC VOLTAGE

1/4	5/64	5/64	.17	.17	0	100	100	100	10	185	FKM	7133TBN2JV00	7
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#### DC VOLTAGE

1/4	5/64	5/64	.17	.17	0	100	100	100	10	185	FKM	7133TBN2JV00	7
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### 3-Way Direct Acting - Multipurpose - Stainless Steel

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
	N.C.	N.O.	N.C.	N.O.	Min.	Air, Inert Gas	Water	Light Oil					

#### AC VOLTAGE

1/8	3/64	3/64	.05	.05	0	150	150	150	10	185	FKM	30CU02EV4	9
1/8	1/16	1/16	.09	.10	0	100	100	100	10	185	FKM	30CU02GV4	9
1/4	1/32	1/32	.024	.024	0	400	400	400	10	185	NBR	71335SN2ANJ1	7
1/4	3/64	3/64	.052	.052	0	180	180	180	10	185	NBR	71335SN2ENJ1	7
1/4	1/16	1/16	.095	.095	0	115	115	115	10	185	NBR	71335SN2GNJ1	7
1/4	3/32	3/32	.17	.17	0	80	80	80	10	185	NBR	71335SN2KNJ1	7

#### DC VOLTAGE

1/8	3/64	3/64	.05	.05	0	150	150	150	8	185	FKM	30CU02EV4	9
1/8	1/16	1/16	.09	.10	0	100	100	100	8	185	FKM	30CU02GV4	9
1/4	1/32	1/32	.024	.024	0	400	400	400	10	185	NBR	71335SN2ANJ1	7
1/4	3/64	3/64	.052	.052	0	180	180	180	10	185	NBR	71335SN2ENJ1	7
1/4	1/16	1/16	.095	.095	0	115	115	115	10	185	NBR	71335SN2GNJ1	7
1/4	3/32	3/32	.17	.17	0	80	80	80	10	185	NBR	71335SN2KNJ1	7



3-Way

### 3-Way Internally Pilot Operated - Normally Closed - Brass

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
1/4	1/4	1.20	30	150	-	-	10	167	NBR	73317BN2PN00	7
3/8	3/8	2.1	10	180	180	180	10	185	NBR	73312BN3RNJ0	7
1/2	1/2	3.6	10	180	180	180	10	185	NBR	73312BN4UNJ0	7
3/4	3/4	7.3	10	180	180	180	10	185	NBR	73312BN52NJ0	7
<b>DC VOLTAGE</b>											
1/4	1/4	1.20	30	150	-	-	10	167	NBR	73317BN2PN00	7
3/8	3/8	2.1	10	180	180	180	10	185	NBR	73312BN3RNJ0	7
1/2	1/2	3.6	10	180	180	180	10	185	NBR	73312BN4UNJ0	7
3/4	3/4	7.3	10	180	180	180	10	185	NBR	73312BN52NJ0	7

### 3-Way Internally Pilot Operated - Normally Closed - Aluminum

Port Size NPT	Orifice Size in.	Flow Factor Cv	Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
			Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>											
NAMUR	.27	1.2	37	150	-	-	5	122	FKM	U341N05*	Below
<b>DC VOLTAGE</b>											
NAMUR	.27	1.2	37	150	-	-	5	122	FKM	U341N05*	Below

Voltage	DIN 43650B	Hazardous
12 VDC	ND1A	NH1A
24 VDC	ND1B	NH1B
24/60	ND1E	-
120/60	-	NH1C
240/60	-	NH1D
120/50 - 60	ND1F	-
240/50 - 60	ND1G	-

\* Function of valve is dependent on the position of the conversion plate.

## 4-Way 2 Position Single Solenoid - Aluminum

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
					Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>													
NAMUR	.27		1.2		37	150	-	-	5	122	FKM	U341N05*	Below
NAMUR	.27		1.2		37	150	-	-	5	122	FKM	U341N03	Below
1/4	1/4		1.0		30	150	-	-	10	165	NBR	73419AN2NNM0	7
1/4	1/4		1.0		30	150	-	-	10	165	NBR	73419AN2NN00	7
<b>DC VOLTAGE</b>													
NAMUR	.27		1.2		37	150	-	-	5	122	FKM	U341N05*	Below
NAMUR	.27		1.2		37	150	-	-	5	122	FKM	U341N03	Below
1/4	1/4		1.0		30	150	-	-	10	165	NBR	73419AN2NNM0	7
1/4	1/4		1.0		30	150	-	-	10	165	NBR	73419AN2NN00	7

Voltage	DIN 43650B	Hazardous
12 VDC	ND1A	NH1A
24 VDC	ND1B	NH1B
24/60	ND1E	-
120/60	-	NH1C
240/60	-	NH1D
120/50 - 60	ND1F	-
240/50 - 60	ND1G	-

\* Function of valve is dependent on the position of the conversion plate.

## 4-Way 2 Position Single Solenoid - Brass

Port Size NPT	Orifice Size in.		Flow Factor Cv		Operating Pressure Differential (MOPD) PSI				Watt	Max. Media Temp. °F	Seal	Pressure Vessel Number	Coil Chart
					Min.	Air, Inert Gas	Water	Light Oil					
<b>AC VOLTAGE</b>													
1/4	1/16	3/32	.09	.09	10	150	150	150	11.5	104	NBR	04F48S2106ACF	4
1/4	1/4	1/14	1.2	1.2	30	150	-	-	10	167	NBR	73417BN2PN00	7
<b>DC VOLTAGE</b>													
1/4	1/4	1/4	1.2	1.2	30	150	-	-	10	167	NBR	73417BN2PN00	7



# REPAIR KITS

Pressure Vessel	Kit
71215SN1MN00	7K502
71215SN21N00	7K538
71215SN2EN00	7K502
71215SN2GN00	7K502
71215SN2KN00	7K502
71215SN2MN00	7K502
71215SN2QN00	7K538
71215SN2SN00	7K538
71215SN2VN00	7K538
71215SN33N00	7K510
71216SN2BL00	None
71216SN2FU00	None
7121KBN1NF00	7KK01
7121KBN2NF00	7KK01
7121KBN2NV00	7KK03
7121KBN2QV00	7KK04
7121KBN2SV00	7KK04
7121KBN44V00	7KK05
7122KBN2LF00	7KK06
71295SN2KNJ1	7K514

Pressure Vessel	Kit
71315SN1GNJ1	7K516
71315SN2ENJ1	7K516
71315SN2GNJ1	7K516
71315SN2KNJ1	7K516
71315SN2MNJ1	7K518
7131KBN2JV00	7KK08
7131TBN2JV00	7KT05
7131TBN2LV00	7KT05
71335SN2ANJ1	7K522
71335SN2ENJ1	7K522
71335SN2GNJ1	7K523
71335SN2KNJ1	7K523
7133TBN2JV00	7KT06
71395SN2ENJ1	7K525
71395SN2GNJ1	7K525
72218BN5VE00	7K804
72218RN4UV00	7K803
7221GBN4VN00	7KG03
7221GBN51N00	7KG03
7221GBN64E00	7KG02

Pressure Vessel	Kit
7221GBN64N00	7KG05
7221GBN64V00	7KG18
72228RN4UV00	7K808
73212BN2MN00	7K201
73212BN4TN00	7K209
73216BN2MT00	7K601
73218BN4UN00	7K815
73218BN5VN00	7K816
7321GBN64N00	7KG08
7321GBN99N00	7KG10
7321KBN2RN00	7KK12
7321KBN3SN00	7KK12
73312BN3RNJ0	7K215
73312BN4UNJ0	7K216
73312BN52NJ0	7K217
73317BN2PN00	7K701
73417BN2PN00	7K701
73419AN2NN00	7K901
73419AN2NNM0	7K901

Pressure Vessel	Kit
20CC02EV4	4R001
20CC02GV4	4R001
20CC02LV4	4R001
20CC02MV4	4R001
20CC02PV4	4R001

Pressure Vessel	Kit
20CC02QV4	4R001
20CF02EV4	4R002
20CF02LV4	4R002
30CC02EV4	4R002
30CC02GV4	4R002

Pressure Vessel	Kit
30CC02MV4	4R002
30CF02EV4	4R003
30CU02EV4	4R004
30CU02GV4	4R004

Pressure Vessel	Kit
04F20O1106ACF	04F20O1106ACFR
04F20O2118ACF	04F20O2118ACFR
04F25C2122C3F	04F25C2122C3FR
04F25C2122CAF	04F25C2122CAFR
04F48S2106ACF	04F48S2106ACFR
06F22C2140A3F	06F22C2140A3FR
06F22C2140AAF	06F22C2140AAFR
06F23C2140ACF	06F23C2140ACFR
08F22C2140A3F	08F22C2140A3FR
08F22C2140AAF	08F22C2140AAFR
08F23C2140ACF	08F23C2140ACFR
08F23C6140ACF	08F23C6140ACFR
08F23O2140A3F	08F23O2140A3FR
08F23O2140ACF	08F23O2140ACFR
08FS3C2340ACF	08FS3C2340ACFR
08FS5C2432ACH	08FS5C2432ACHR

Pressure Vessel	Kit
12F22C2148A3F	12F22C2148A3FR
12F22C2148AAF	12F22C2148AAFR
12F23C2148ACF	12F23C2148ACFR
12F23C6148ACF	12F23C6148ACFR
12F23O2148ACF	12F23O2148ACFR
12FS3C2348ACF	12FS3C2348ACFR
12FS5C2448ACH	12FS5C2448ACHR
16F24C2164A3F	16F24C2164A3FR
16F24C2164AAF	16F24C2164AAFR
16FS5C2464ACH	16FS5C2464ACHR
20F24C2172A3F	20F24C2172A3FR
20F24C2172AAF	20F24C2172AAFR
24F24C2180A3F	24F24C2180A3FR
24F24C2180AAF	24F24C2180AAFR
24FS4C2380AAF	24FS4C2380AAFR



## Parker Safety Guide for Selecting and Using Fluid Control Division Products including Valves, Assemblies and Related Accessories

**WARNING: Failure or improper selection or improper use of Parker Fluid Control Division Products, including valves, assemblies or related accessories (“Products”) can cause death, personal injury and property damage. Possible consequences of failure or improper selection or improper use of these Products include but are not limited to:**

- Gas leakage leading to explosion or rupture of a pressure vessel.
- Leakage or other release of toxic or otherwise hazardous liquids or gases.
- Unintended or mistimed cycling or motion of machine members. Or failure of machine members to cycle.
- Sudden moving or falling objects.
- Work piece or component parts being thrown off at high speeds.
- Failure of a device to function properly. For example, failure to clamp or unclamp an associated item or device.
- Electrical shorts, burns, burn out of equipment or fires.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

### 1.0 GENERAL INSTRUCTIONS

**1.1. Scope:** This safety guide is designed to cover general guidelines on the selection, installation, operation, and maintenance of these Products. This safety guide is a supplement to and is to be used with the specific Parker publication for the valve, assembly or related accessory being considered for use. Parker publications are available at [www.parker.com](http://www.parker.com) or by calling 1-800-CPARKER.

**1.2. Fail-Safe:** All Products can and do fail without warning for many reasons. Design all systems in a fail-safe mode so that failure of the Products will not endanger persons or property.

**1.3 Distribution:** Provide a copy of this safety guide to each person that is responsible for installation, operation, and maintenance of these Products. Do not select or use these Products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the Products considered or selected.

**1.4 User Responsibility:** Due to the wide variety of operating conditions and applications for these Products, Parker and its distributors do not represent or warrant that any particular Parker Fluid Control Product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a Product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the Product;
- Assuring that the user’s requirements are met and that the application presents no health or safety hazards;
- Providing all appropriate health and safety warnings on the equipment on which the Products are used; and
- Assuring compliance with all applicable government and industry standards.

**1.5 Additional Questions:** Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the Product being considered or used, or call 1-800-CPARKER, or go to [www.parker.com](http://www.parker.com) for telephone numbers of the appropriate technical service department.

### 2.0 PRODUCT SELECTION INSTRUCTIONS

**2.1 Selection:** Consult the specific Parker Fluid Control publication for the Product being considered for use. Confirm the choice of Product with Parker Fluid Control’s technical consultants prior to placing orders for the Product or installing and using the Product.

**2.2 Chemical Compatibility:** Elastomer seal material used in the Products must be properly selected based on compatibility with the gases, liquids or additives being conveyed in the Product. Any exposure to non-compatible gases, liquids or additives may result in failure or degradation of the seals and leakage from the Product. Such failure or degradation could happen immediately or at anytime over the life of the Product.

### 3.0 PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

**3.1 Inspection:** Prior to assembly, all components must be checked for correct style, part number, and physical properties such as size or the presence of physical damage. Do NOT use any component that displays any signs of nonconformance.

**3.1.1** A careful examination of the Unit Valve and Unit Solenoid must be performed. If you purchase a Unit Valve and a Unit Solenoid, be sure that the last two digits of the Unit Valve match the first two digits of the Unit Solenoid. If they do not match then do not install.

**3.1.2** Check nameplate for correct catalog number, pressure, voltage and service. Do not install if unsuitable.

**3.1.3** Valves to be installed in Hazardous Locations must be outfitted with Hazardous Location coils only. Verify nameplate data and coil part number before installing the valve.

**3.2 Product Assembly:** Do not assemble, install or use a Parker Fluid Control Division Product in any end use or application that exceeds the specified operating parameters as listed by Parker such as but not limited to, pressure, voltage and frequency, and medium. Do not mix components or solenoids from a Parker valve with valves or solenoids from another manufacturer. Do not mix components or solenoids from one Parker valve with components or solenoids from another Parker valve.

- 3.2.1 Threaded Connections:** Proper procedures for the application of tape or liquid pipe sealant or thread compound must be followed so these contaminants do not enter the Product.
- 3.2.2 Sweating or Brazing:** Products requiring the sweating or brazing of pipe connections must have precautions taken to protect the internal product components from excessive heat during the sweating or brazing operation. Follow the directions in the specific Parker Fluid Control Division publication for the Product in question.
- 3.2.3 Mounting:** Check the specific Parker Fluid Control Division publication for the Product in question for limitations on mounting prior to mounting the Product.
- 3.2.4 Electrical Connection:** Turn off electrical power before connecting or disconnecting the Product to the power source. Wiring must comply with local and national electrical codes.
- 3.2.5 Voltage:** Some coils contain solid state components that can be damaged by voltage spikes, transient voltage, over temperature, over voltage, or improper assembly. To protect against premature failure, please read the instructions in the specific Parker Fluid Control Division publication for the Product in question.
- 3.2.6 Port Connection:** Parker Product operating parameters assume that the user connects the fluid to the proper inlet, outlet and exhaust ports. Connecting to the wrong ports may result in a complete failure or degraded performance. Use caution when applying and activating the fluid connection. Take the necessary precautions to protect personnel and property from injury and damage when turning on the fluid to the Product. Make sure the voltage is in the correct state (on or off) to control the applied pressure as required for the application in question.
- 3.2.7 Screw Terminal Coil and Terminal Box Assembly:** When the DIN or screw terminal coils are used with the terminal box assembly, be sure to apply a wrench to the wrench flats on the conduit hub when installing electrical conduit.
- 3.2.8 Pressure:** Turn off line pressure and bleed off trapped pressure from the lines before installing, removing or disassembling the Product.

#### **4.0 PRODUCT AND SYSTEM OPERATION INSTRUCTIONS**

- 4.1 Pressure Differential:** Pressure differential dependent Products require a minimum pressure differential to operate properly. Make sure the chosen Product is sized properly for the application to maintain the required pressure differential across the Product.
- 4.2 System Check-out:** Once installed, the Product installation must be tested to insure proper operation and that no external leakage exists. All safety equipment must be in place including but not limited to safety glasses, helmets, ear protection, splash guards, coveralls and any shields on the equipment. All air entrapment must be eliminated and the system pressurized to the maximum system pressure (at or below the Product maximum working pressure) and checked for proper function and freedom from leaks. Personnel must stay out of potentially hazardous areas while testing and using.

#### **5.0 PRODUCT MAINTENANCE AND REPLACEMENT INSTRUCTIONS**

- 5.1 Maintenance:** Even with proper selection and installation, Product life or performance may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a possible Product failure, and experience with any Product failures in the application or in similar applications should determine the frequency of the inspection and the replacement for the Products so that Products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 5.1.1 through 5.1.3.
- 5.1.1 Product Lubrication and Filtration:** Almost all products require filtration. Consult the specific Parker Fluid Control Division publication for the Product in question. Note, too, that some Products require lubrication or filtration or both as a regular maintenance item due to the nature of the application's environment. Consult the specific Fluid Control Division publication for the Product in question to determine this. Other Products, such as proportional valves, do not require any maintenance if the fluid is properly filtered. If a failure should occur, then these proportional valves should not be repaired but replaced.
- 5.1.2 Cleaning:** Do not expose plastic or elastomeric materials to any type of commercial cleaning fluid. Parts should be cleaned with a mild soap and water solution.
- 5.1.3 Fluid Spills:** Necessary precautions should be taken during maintenance to avoid exposing personnel or the surrounding area to any spilled fluid if the fluid is regulated, harmful, or damaging when exposed to or in contact with personnel or the surrounding environment.
- 5.2 Service and Repair:**
- 5.2.1 General:** Do not repair Products unless the specific Fluid Control Division publication for the Product in question allows this procedure. Not all Products can be safely repaired in the field. Repair and replacement must be in accordance with the specific Parker Fluid Control Division publication for the Product in question and any Parker replacement kit instructions.
- 5.2.2 Replacement Parts:** If you purchase any replacement parts they must be original equipment manufactured by Parker Fluid Control Division.
- 5.2.3 Lock-Out / Tag-Out:** Follow all lock-out and tag-out procedures before undertaking service or repairs. This includes de-energizing all electrical, fluid and mechanical energy sources.
- 5.2.4 Hazardous Location Coils** - When replacing coils, Products equipped with Hazardous Location coils must use Hazardous Location replacement coils only. Verify nameplate data and coil part number before installing the replacement coil.

## OFFER OF SALE – FLUID CONTROL DIVISION

The items described in this document and other documents and descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors ("Seller") are hereby offered for sale at prices to be established by Seller. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any item described in its document, when communicated to Seller verbally, or in writing, shall constitute acceptance of this offer. All goods, services or work described will be referred to as "Products".

- 1. Terms and Conditions.** Seller's willingness to offer Products, or accept an order for Products, to or from Buyer is subject to these Terms and Conditions or any newer version of the terms and conditions found on-line at [www.parker.com/salesterms/](http://www.parker.com/salesterms/). Seller objects to any contrary or additional terms or conditions of Buyer's order or any other document issued by Buyer.
- 2. Price Adjustments; Payments.** Prices stated on Seller's quote or other documentation offered by Seller are valid for 30 days, and do not include any sales, use, or other taxes unless specifically stated. Unless otherwise specified by Seller, all prices are F.O.B. Seller's facility payment is subject to credit approval and is due 30 days from the date of invoice or such other term as required by Seller's Credit Department, after which Buyer shall pay interest on any unpaid invoices at the rate of 1.5% per month or the maximum allowable rate under applicable law.
- 3. Delivery Dates; Title and Risk; Shipment.** All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage shall pass to Buyer upon placement of the products with the shipment carrier at Seller's facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyer's request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.
- 4. Warranty.** Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of 2 years from the date of delivery to Buyer or 2,000 hours of normal use, whichever occurs first. Exception to this is the Angle Body Valve line has a 1 year warranty. The prices charged for Seller's products are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED HEREUNDER. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
- 5. Claims; Commencement of Actions.** Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 30 days after delivery. Buyer shall notify Seller of any alleged breach of warranty within 30 days after the date the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for an amount due on any invoice) must be commenced within 12 months from the date of the breach without regard to the date breach is discovered.
- 6. LIMITATION OF LIABILITY.** UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. **IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.**
- 7. User Responsibility.** The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.
- 8. Loss to Buyer's Property.** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, will be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.
- 9. Special Tooling.** A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.
- 10. Buyer's Obligation; Rights of Seller.** To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.
- 11. Improper use and Indemnity.** Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees),

whether for personal injury, property damage, patent, trademark or copyright infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.

**12. Cancellations and Changes.** Orders shall not be subject to cancellation or change by Buyer for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller may change product features, specifications, designs and availability with notice to Buyer.

**13. Limitation on Assignment.** Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.

**14. Force Majeure.** Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

**15. Waiver and Severability.** Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.

**16. Termination.** Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) dissolves or liquidates all or a majority of its assets.

**17. Governing Law.** This agreement and the sale and delivery of all Products hereunder shall be deemed to have taken place in and shall be governed and construed in accordance with the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to this agreement.

**18. Indemnity for Infringement of Intellectual Property Rights.** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

**19. Entire Agreement.** This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.

**20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act.** Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.S. Anti-Kickback Act (the "Anti-Kickback Act"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.

05/12









# COILS

Please refer to the coil chart number within the catalog to find the correct coil in the chart below.

Gold Ring™	Voltage	1/2" NPT Conduit*	DIN 43650A/ISO4400
CHART 1 6 watts, Class F	24/60 120/60-110/50 240/60-220/50	AF4C01 AF4C05 AF4C15	- AFPH05 AFPH15

Gold Ring™	Voltage	1/2" NPT Conduit*	DIN 43650A/ISO4400
CHART 4 11 watts, Class F	24/60 120/60-110/50 240/60-220/50	CF4C01 CF4C05 CF4C15	- CFPH05 CFPH15
CHART 5 16 watts, Class F	24/60 120/60-110/50 240/60-220/50	DF4C01 DF4C05 DF4C15	- DFPH05 DFPH15
CHART 6 11.5 watts, Class F	12VDC 24VDC	3F4C75 3F4C80	3FPH75 3FPH80

Skinner®	Voltage	1/2" NPT Conduit*	DIN 43650A/ISO4400	Hazardous**
CHART 7 10 watts, Class F	24/60 120/60-110/50 240/60-220/50 12VDC 24VDC	C111B2 C111P3 C111Q3 C111C1 C111C2	D100B2 D100P3 D100Q3 D100C1 D100C2	- H111P3 H111Q3 H111C1 H111C2
CHART 7 10 watts, Class H	120/60-110/50 240/60-220/50 12VDC 24VDC	C222P3 C222Q3 C222C1 C222C2	- - - -	H222P3 H222Q3 - H222C2
CHART 8 22 watts, Class H	120/60-110/50 12VDC 24 VDC	C322P3 C322C1 C322C2	- - -	H322P3 H322C1 H322C2

Skinner®	Voltage	1/2" NPT Conduit*	DIN 43650A/ISO4400	18" Leads
CHART 9 AC 10 watts*** DC 8 watts Class F	24/60 120/60-110/50 240/60-220/50 12VDC 24VDC	C4E C4F C4G C4A C4B	- - - - -	B4E B4F B4G B4A B4B
CHART 9 AC 10 watts*** DC 8 watts Class H	24/60 120/60-110/50 240/60-220/50 12VDC 24VDC	- - - - -	D6E D6F D6G D6A D6B	- - - - -

\* 18" Lead Wires, Nema 1, 2, 3, 4, 4X

\*\* Hazardous location coil approval: Class I, Div I & II, Groups A, B, C, D; Class II, Div I & II, Groups E, F, G; Class III, Div I.

\*\*\* 8.5 Watt For 2 - Way Normally Closed AC



ENGINEERING YOUR SUCCESS.

**Together, we can**  
control virtually any media,  
in any application,  
under any condition.

**Parker Fluid Control's 2-Way, 3-Way  
and 4-Way valves** are designed to  
offer customers the ultimate in  
performance, versatility and quality.



[www.parker.com/fcd](http://www.parker.com/fcd)

**Flip Out To Reveal Coil Chart**

Parker Hannifin Corporation  
**Fluid Control Division**

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