



# B5107 Series Butterfly Valve

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# Technical Specifications

## Materials of Construction – Steel Components

- Product contact components (body and disc): forged 316L stainless steel
- Non-product contact components: 304 stainless steel

## Sealing Materials

- Product contact components (seals): EPDM, FKM, silicone
  - Silicone and EPDM for valve sizes 1/2" to 4" have USP VI Certification
  - NOTE: 6" and 8" valves only available with EPDM and silicone
- Non-product contact components (bushings): polyacetal

## Line Pressure Technical Data

- Max product line pressure:
  - 1/2" to 2": **140 PSI (965kPa)**
  - 2-1/2" to 3": **110 PSI (758kPa)**
  - 4": **85 PSI (586kPa)**
  - 6" to 8": **60 PSI (413kPa)**
- Minimum product line pressure: 0.4" Hg vacuum at **20°C (68°F)**

## Product Temperature Technical Data

- Minimum/maximum operating temperature: **-9°C (15°F) to 93°C (200°F)**

## Surface Finish Technical Data

- Product contact components:  $R_a \leq 32$
- Optional finishes: 15R<sub>a</sub>, 20R<sub>a</sub>, 25R<sub>a</sub>

## Pneumatic Connections Technical Data (linear actuator)

- Threaded air fitting size: G1/8"
- Air connection hose size: 1/4" flexible poly tubing
- Max supply air pressure: **100 PSI (689kPa)**
- Minimum supply air pressure: **80 PSI (551kPa)**

## Valve Stem Square Size

- 1/2" to 4": 10mm
- 6": 13mm
- 8": 14mm

## Connections

- Clamp (standard)
- Additional available connections: weld, female I-Line, male I-Line, threaded bevel, plain bevel, Q-Line, John Perry threaded
- Sizes: 1/2" to 8"

## Flow Coefficients (C<sub>v</sub>)

Based on water at 20°C

Valve Size	Flow Coefficient (C <sub>v</sub> )	Valve Size	Flow Coefficient (C <sub>v</sub> )
1/2"	7	2-1/2"	264
3/4"	11	3"	372
1"	23	4"	800
1-1/2"	80	6"	1200
2"	230	8"	2800

## Valve Break Torque

Based on water at 20°C

Valve Size	Break Torque (in-Nm) Silicone	Break Torque (in-Nm) EPDM	Break Torque (in-Nm) FKM
1/2"	2	1.5	8
3/4"	2	1.5	8
1"	3	1.5	8
1-1/2"	4	2	14
2"	4	5.5	20
2-1/2"	15	11	25
3"	15	16.5	35
4"	30	39	51
6"	87.5	94	N/A
8"	125	125	N/A

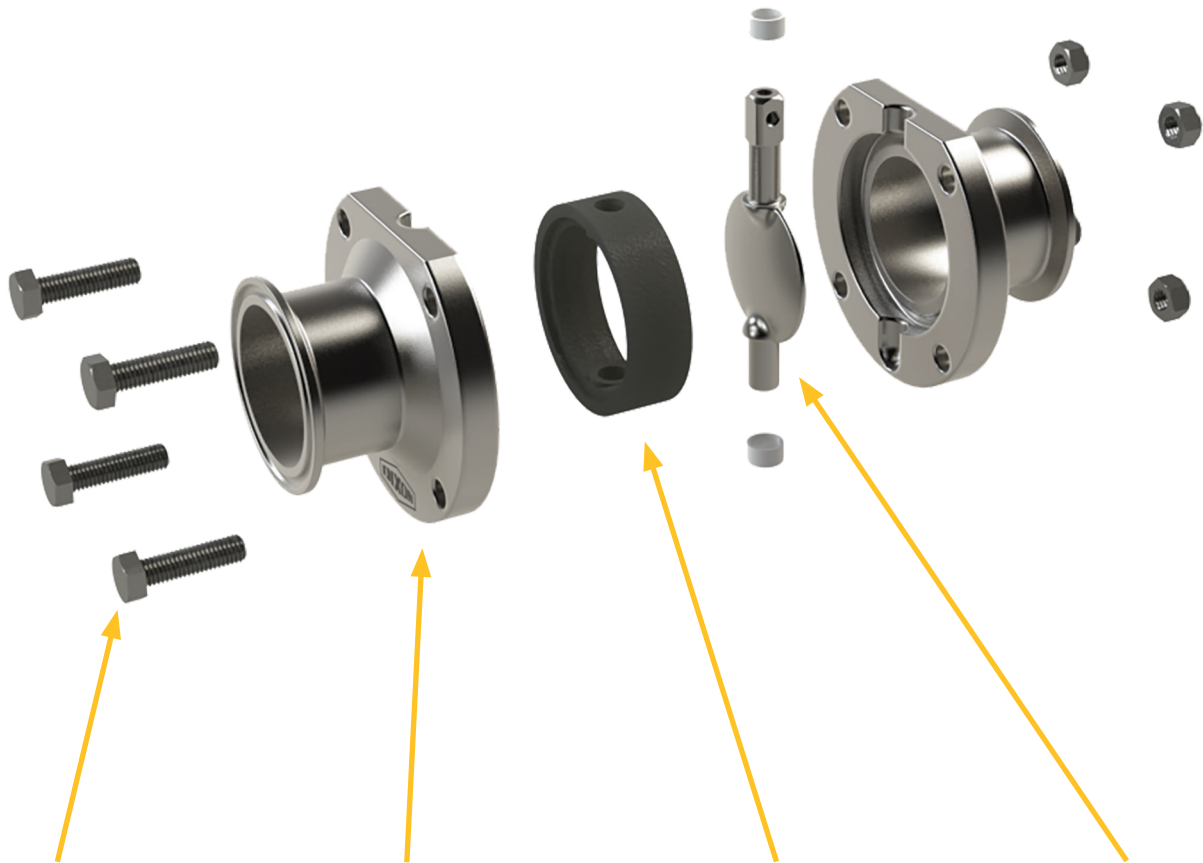


# Pressure Drop Chart (kPa)

Based on water at 21°C

Capacity (M <sup>3</sup> /Hr)	Valve Size (in)									
	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"
1	48	34								
2		17	1							
11			32	3						
20			105	9	1					
30				18	2	1				
39				31	3	3	1			
48				48	6	4	2			
57				68	8	6	3			
66					11	8	4			
75					14	11	5	1		
84					18	14	7	1		
93					22	17	8	2		
102					26	20	10	2		
111					31	23	12	3	1	
120						28	14	3	1	
129						32	16	3	1	
139						37	19	4	2	
148						42	21	5	2	
157						47	23	5	2	
166							27	6	3	
175							30	6	3	
184							32	7	3	
193							36	8	3	
202							39	8	4	
211							43	10	4	
220								10	5	
229								11	5	
238								12	6	
248								13	6	1
257								14	6	1
266								14	7	1
275								16	7	1
284								17	8	1
293								18	8	1
302								19	8	1
311								20	9	1
320								21	10	2
329								23	10	2
338								24	10	2
347								26	11	2
357								27	12	2
366								28	12	2
375								30	13	2

# B5107-Series Butterfly Valve



## Hex Head Body Bolts

Hex head body bolts eliminate the recessed cavity found in socket head body bolts, reducing the potential for bacterial buildup. Sizes 1/2" to 4"

## Exterior Body Geometry

Body design enhances the exterior cleanability and drainability of the valve by utilizing a large machined chamfer between the flange face and the tube OD

## Seal Performance

Our new EPDM with self-lubricating properties and silicone rubber help to reduce break torque and provide added durability to valve seats. Silicone and EPDM for valve sizes 1/2" to 4" have USP VI certification

## Valve Disc

Increased disc stem square size provides added durability when higher torques are experienced due to viscous or sticky process fluids

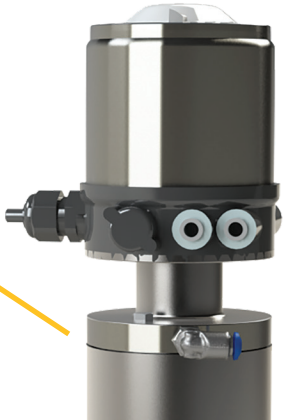


# B5107-Series Butterfly Valve



**Actuation Coupler**

Coupler design eliminates the need for the roll pin to connect to the actuator, saving time during assembly. Additionally, sensing targets are incorporated into the coupler meaning no extra accessories are needed when adding external proximity sensors.



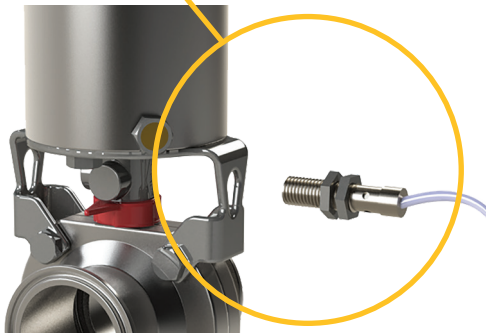
**Control Top Ready Actuator**

Actuator design allows for a control top to be added to any standard actuator in the field without the need to change the actuator



**Single Piece Actuator Bracket**

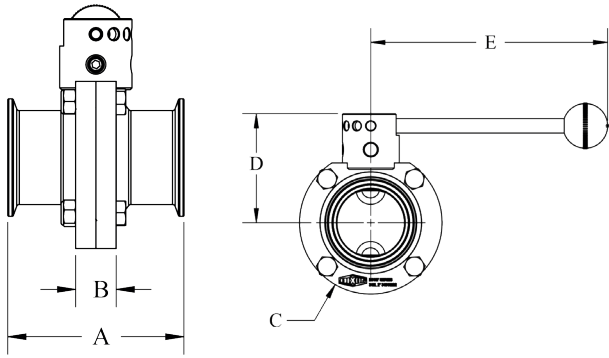
Single piece bracket makes assembly fast and easy compared to two-piece designs



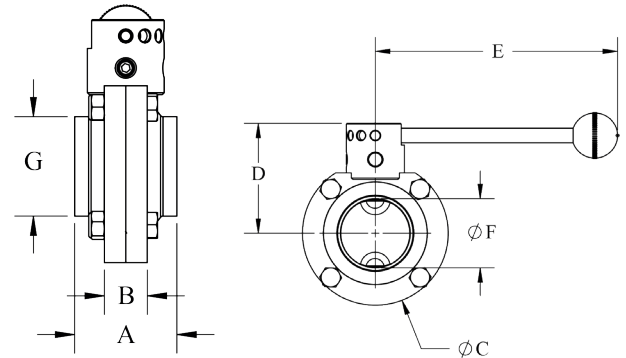
**Prox-Ready Mounting Holes**

Sensors can easily be added to any actuated valve without the need to purchase additional mounting hardware

# B5107-Series Butterfly Valve



Pull Handle CLAMP END Dimensions



Pull Handle WELD END Dimensions

## Pull Handle CLAMP END Dimensions

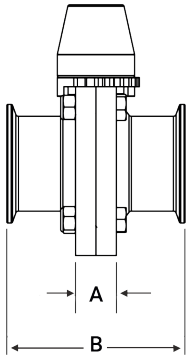
Size (Inch)	Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
1"	B5107E100CC-A	88.9	22.86	78.74	66.04	116.84
1 1/2"	B5107E150CC-A	88.9	22.86	78.74	66.04	116.84
2"	B5107E200CC-A	96.52	22.86	99.06	76.2	116.84
2 1/2"	B5107E250CC-A	96.52	22.86	116.84	86.36	116.84
3"	B5107E300CC-A	104.14	30.48	132.08	88.9	165.1
4"	B5107E400CC-A	121.92	30.48	170.18	109.22	165.1

## Pull Handle WELD END Dimensions

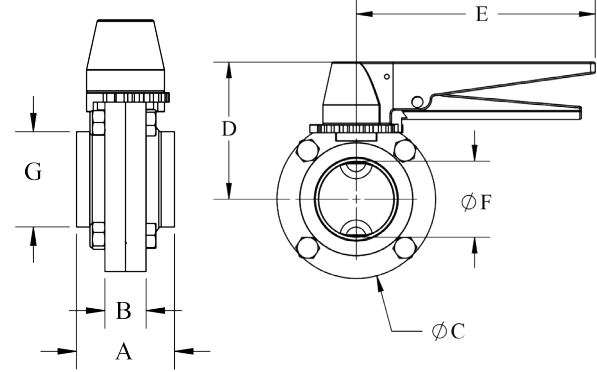
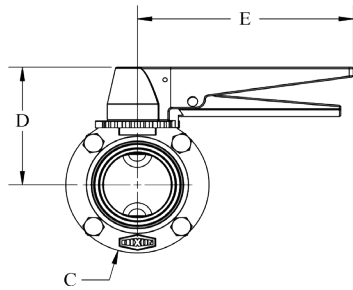
Size (Inch)	Part Number	A (mm)	B (mm)	ØC (mm)	D (mm)	E (mm)	ØF (mm)	G (mm)
1"	B5107E100BB-A	50.8	22.86	78.74	66.04	116.84	22.098	25.4
1 1/2"	B5107E150BB-A	50.8	22.86	78.74	66.04	116.84	34.798	38.1
2"	B5107E200BB-A	50.8	22.86	99.06	76.2	116.84	47.498	50.8
2 1/2"	B5107E250BB-A	53.34	22.86	116.84	86.36	116.84	60.198	63.5
3"	B5107E300BB-A	63.5	30.48	132.08	88.9	165.1	72.898	76.2
4"	B5107E400BB-A	78.74	30.48	170.18	109.22	165.1	97.282	101.6



# B5107-Series Butterfly Valve



Trigger Handle CLAMP END Dimensions



Trigger Handle WELD END Dimensions

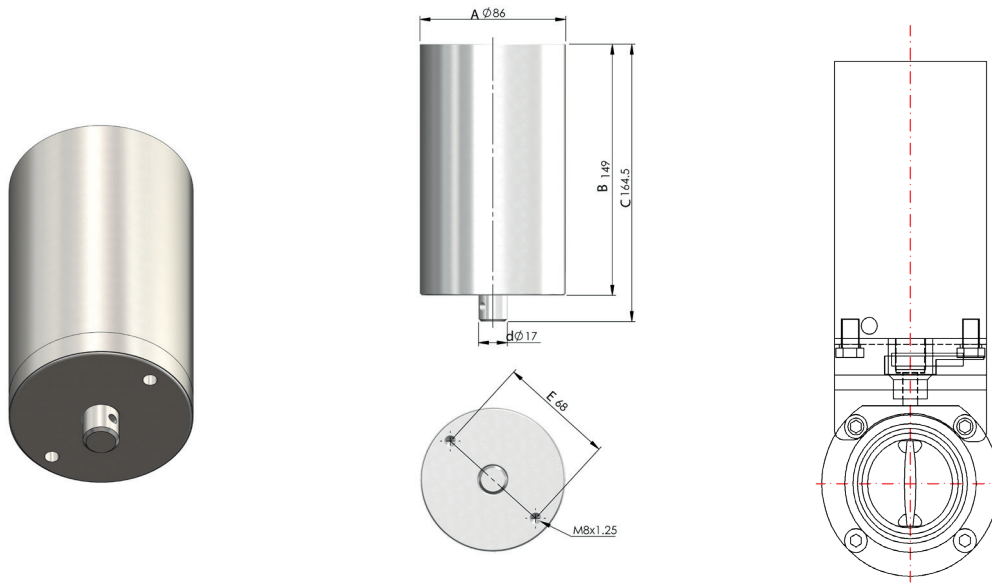
## Trigger Handle CLAMP END Dimensions

Size (Inch)	Part Number	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
1"	B5107E100CC-C	88.9	22.86	78.74	66.04	149.86
1 1/2"	B5107E150CC-C	88.9	22.86	78.74	66.04	149.86
2"	B5107E200CC-C	96.52	22.86	99.06	76.2	149.86
2 1/2"	B5107E250CC-C	96.52	22.86	116.84	86.36	149.86
3"	B5107E300CC-C	104.14	30.48	132.08	88.9	149.86
4"	B5107E400CC-C	121.92	30.48	170.18	109.22	149.86

## Trigger Handle WELD END Dimensions

Size (Inch)	Part Number	A (mm)	B (mm)	ØC (mm)	D (mm)	E (mm)	ØF (mm)	G (mm)
1"	B5107E100BB-C	88.9	22.86	78.74	66.04	149.86	22.098	25.4
1 1/2"	B5107E150BB-C	88.9	22.86	78.74	66.04	149.86	34.798	38.1
2"	B5107E200BB-C	96.52	22.86	99.06	76.2	149.86	47.498	50.8
2 1/2"	B5107E250BB-C	96.52	22.86	116.84	86.36	149.86	60.198	63.5
3"	B5107E300BB-C	104.04	30.48	132.08	88.9	149.86	72.898	76.2
4"	B5107E400BB-C	121.92	30.48	170.18	109.22	149.86	97.282	101.6

# B5107-Series Butterfly Valve



## Actuator Specifications

Description	Air Consumption (cm <sup>3</sup> )		Max. Temp. Rating	Min. Temp. Rating	Output Torque (Nm)	Max. Pressure Required	Supply Pressure Required.	Dia. (mm)	Ht. (mm)	Air Fitting Ports
	down stroke CW	up stroke CCW								
Double Acting	139	328	121°C	-20°C	65.14	120 psi	80-100 psi	86	149	1/8" NPT
Spring Return	139	303	121°C	-20°C	65.14	120 psi	80-100 psi	86	149	1/8" NPT

## SS Vertical Spring Return Actuation Butterfly Valves

Size (Inch)	EPDM Seats & Vertical Canister Style Actuator - Butt weld		
	EPDM Seats - Normally Closed	EPDM Seats - Normally Open	EPDM Seats - Double Acting
1"	B5107E100BB-G	B5107E100BB-F	B5107E100BB-H
1 1/2"	B5107E150BB-G	B5107E150BB-F	B5107E150BB-H
2"	B5107E200BB-G	B5107E200BB-F	B5107E200BB-H
2 1/2"	B5107E250BB-G	B5107E250BB-F	B5107E250BB-H
3"	B5107E300BB-G	B5107E300BB-F	B5107E300BB-H
4"	B5107E400BB-G	B5107E400BB-F	B5107E400BB-H

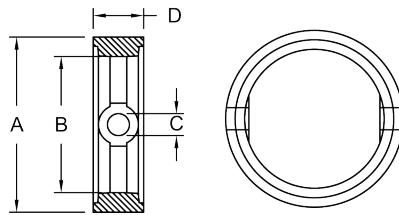




# B5107-Series Butterfly Valve

## Repair Kit

Size (Inch)	Red Silicone	Black EPDM	Brown FKM
	Part Number		
1"	B5107-RKS100	B5107-RKE100	B5107-RKV100
1 1/2"	B5107-RKS150	B5107-RKE150	B5107-RKV150
2"	B5107-RKS200	B5107-RKE200	B5107-RKV200
2 1/2"	B5107-RKS250	B5107-RKE250	B5107-RKV250
3"	B5107-RKS300	B5107-RKE300	B5107-RKV300
4"	B5107-RKS400	B5107-RKE400	B5107-RKV400
6"	B5107-RKS600	B5107-RKE600	B5107-RKV600
8"	-	B5107-RKE800	B5107-RKV800



## B5107 Seat Dimensions

Size (Inch)	A (mm)	B (mm)	C (mm)	D (mm)
1"	36.06	21.08	9.40	19.56
1 1/2"	49.02	34.04	9.40	19.56
2"	65.02	43.94	9.40	19.81
2 1/2"	76.96	59.69	11.68	23.11
3"	92.96	71.12	13.97	27.94
4"	125.98	98.04	15.75	36.32
6"	173.48	147.07	15.75	43.18
8"	236.73	200.41	17.02	40.39

## B5107 Butterfly Valve Part Number Key

Dixon B5107 Butterfly Valve Part Number Key Example: B5107E050CC-A		Series	Seat Material	Valve Size	Connection End	Connection End	Actuator
		B5107	E	050	C	C	-A
<b>Series</b>	<b>Code</b>						
Two-piece body	B5107						
<b>Seat Material</b>	<b>Code</b>						
EPDM	E						
Silicone	S						
FKM	V						
<b>Valve size</b>	<b>Code</b>						
1/2"	050						
3/4"	075						
1"	100						
1-1/2"	150						
2"	200						
2-1/2"	250						
3"	300						
4"	400						
6"	600						
8"	800						
<b>Connections (choose connection for each side of valve)</b>	<b>Code</b>						
Clamp	C						
Weld	B						
Female I-Line	F						
Male I-Line	M						
Threaded bevel	T						
Plain bevel	P						
Q-Line	Q						
<b>Actuation</b>	<b>Code</b>						
*Manual handle - 4 position standard handle	-A						
*Manual handle - infinite position handle	-B						
*Manual handle - 13 position trigger handle	-C						
24VDC electric (power open/power close)	D						
110VAC electric (power open/power close)	E						
Normally open linear pneumatic vertical canister (cannot be used on valves over 4")	F						
Normally closed linear pneumatic vertical canister (cannot be used on valves over 4")	G						
Air to air linear pneumatic vertical canister (cannot be used on valves over 4")	H						
Air to air pneumatic rack and pinion stainless steel	J						
Normally closed pneumatic rack and pinion stainless steel	K						
Normally open pneumatic rack and pinion stainless steel	L						
Air to air pneumatic rack and pinion aluminium	M						
Normally closed pneumatic rack and pinion aluminium	N						
Normally open pneumatic rack and pinion aluminium	P						
Normally closed, dead man handle	Q						
220VAC electric (power open/power close)	R						

\*NOTE: Only use a dash (-) in the part number if using a manual handle with no options, otherwise the dash is eliminated.



## B5107 Butterfly Valve Part Number Key

Dixon B5107 Butterfly Valve Part Number Key (continued)		Control Unit / Feedback	Alt. Finish Option
<b>Control Unit / Feedback</b>	<b>Code</b>		
None	Blank	←	←
Only available to be used with the following actuation codes: C, F, G, and H			
10-30VDC 12mm external prox, PNP, open/close, (qty 2), flying leads	01		
10-30 VDC 12mm external prox, NPN, open/close, (qty 2), flying leads	02		
10-30VDC 12mm external prox, PNP, open, (qty 1), flying leads	03		
10-30VDC 12mm external prox, PNP, close, (qty 1), flying leads	04		
10-30 VDC 12mm external prox, NPN, open, (qty 1), flying leads	05		
10-30VDC 12mm external prox, PNP, open/close, (qty 2), M12 quick disconnect	06		
10-30 VDC 12mm external prox, NPN, open/close, (qty 2), M12 quick disconnect	07		
10-30VDC 12mm external prox, PNP, open, (qty 1), M12 quick disconnect	08		
10-30VDC 12mm external prox, PNP, close, (qty 1), M12 quick disconnect	09		
10-30 VDC 12mm external prox, NPN, open, (qty 1), M12 quick disconnect	10		
Only available to be used with the following actuation codes: F, G, and H			
Burkert 8691, single acting, DeviceNet, multipin	11		
Burkert 8691, single acting, AS-I, multipin	12		
Burkert 8691, single acting, 24VDC, multipin	13		
Burkert 8691, double acting, DeviceNet, multipin	14		
Burkert 8691, double acting, AS-I, multipin	15		
Burkert 8691, double acting, 24VDC, multipin	16		
Burkert 8691, without solenoid, 24VDC, multipin	17		
Burkert 8692 positioner, 24VDC, 4-20mA, multipin	18		
Only available to be used with the following actuation codes: A, J, K, L, M, N, and P			
Limit switch box, open/close Beacon, (2) SPDT mechanical switches	19		
Limit switch box, open/close Beacon, (2) proximity SPDT switches	20		
Limit switch box, open/close Beacon, AS-I interface	21		
Only available to be used with the following actuation codes: J, K, L, M, N, and P			
Rotary pneumatic positioner <b>3-15 PSI</b> input, no feedback	22		
Rotary pneumatic positioner <b>3-15 PSI</b> input, (2) SPDT mechanical switches for feedback	23		
Rotary pneumatic positioner <b>3-15 PSI</b> input, 4-20mA for feedback	24		
Rotary electropneumatic positioner 4-20mA input, no feedback	25		
Rotary electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback	26		
Rotary electropneumatic positioner 4-20mA input, 4-20mA for feedback	27		
Rotary electropneumatic positioner 0-10v input, no feedback	28		
Rotary electropneumatic positioner 0-10v input, (2) SPDT mechanical switches for feedback	29		
Rotary electropneumatic positioner 0-10v input, 4-20mA for feedback	30		
Single coil solenoid, 12VDC	31		
Single coil solenoid, 24VDC	32		
Single coil solenoid, 24VAC	33		
Single coil solenoid, 110VAC	34		
Single coil solenoid, 220VAC	35		
Single coil solenoid, 12VDC + option 19 limit switch	36		
Single coil solenoid, 12VDC + option 20 limit switch	37		
Single coil solenoid, 24VDC + option 19 limit switch	38		
Single coil solenoid, 24VDC + option 20 limit switch	39		
Single coil solenoid, 24VAC + option 19 limit switch	40		
Single coil solenoid, 24VAC + option 20 limit switch	41		
Single coil solenoid, 110VAC + option 19 limit switch	42		
Single coil solenoid, 110VAC + option 20 limit switch	43		
Single coil solenoid, 220VAC + option 19 limit switch	44		
Single coil solenoid, 220VAC + option 20 limit switch	45		
Limit switch box with integral solenoid, AS-i, 24VDC	46		
Aluminum prox ring with red poly tube indicator	47		
<b>Alt. Finish Option</b>	<b>Code</b>		
None	Blank		
25Ra mechanical	B		
20Ra mechanical	C		
15Ra electropolish	D		



*The Right Connection®*

**Dixon (Asia Pacific) Pty Ltd**

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