

# FRAMELESS SERIES

## Heavy Duty Brushless Resolvers

**Harowe™ brand**

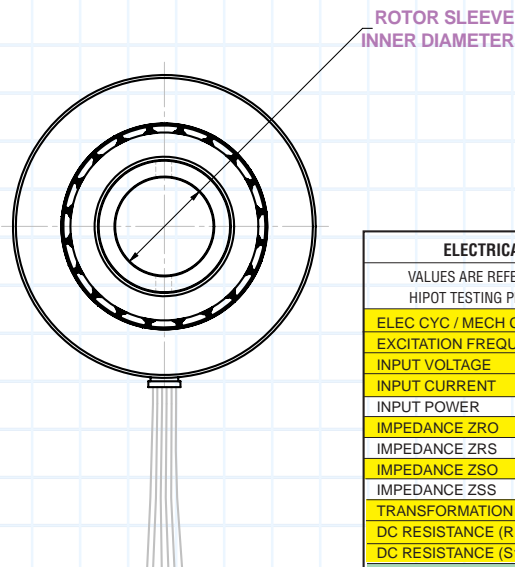
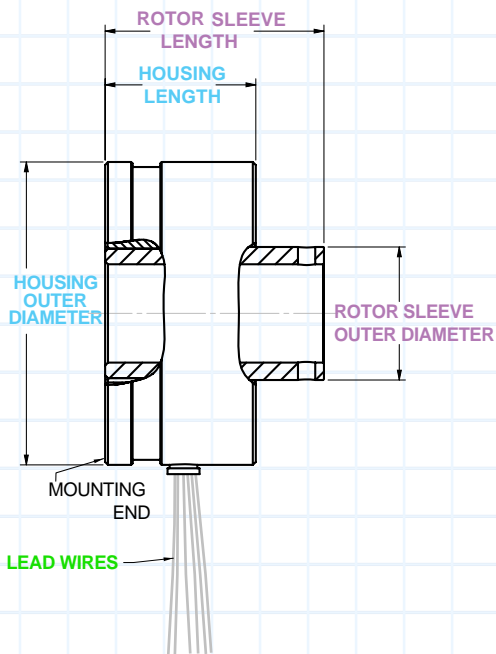
### Key Features

- Wide Range of Sizes from 10 to 55
- Multi-Speed Available
- Up to 200°C Temperature Range
- Radiation-Hardened Models Available

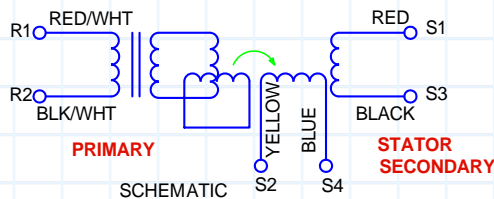


### CONFIGURATOR GUIDE

Determine resolver required characteristics from this guide. Use color-keyed diagram below, in conjunction with tables on following pages, to select part number. Please review PDF for part number selected before ordering.



### PHASING



ELECTRICAL & MECHANICAL DATA AT 25°C		
VALUES ARE REFERENCE UNLESS OTHERWISE TOLERANCED		
HIPOT TESTING PERFORMED AT 60HZ, 4 SECOND DURATION		
ELEC CYC / MECH CYC	deg/deg	-
EXCITATION FREQUENCY	±1% kHz	-
INPUT VOLTAGE	±5% V rms	-
INPUT CURRENT	Max. mA rms	-
INPUT POWER	Watts	-
IMPEDANCE ZRO	Ohms	-
IMPEDANCE ZRS	Ohms	-
IMPEDANCE ZSO	Ohms	-
IMPEDANCE ZSS	Ohms	-
TRANSFORMATION RATIO	Min. to Max.	-
DC RESISTANCE (R1-R2)	Ohms	-
DC RESISTANCE (S1-S3, S2-S4)	Ohms	-
ERROR	±Max. arcminutes	-
PK-PK POSITION ERROR	Max. arcminutes	-
PK-PK VELOCITY ERROR	Max. %	-
PHASE SHIFT, OPEN CIRCUIT	degrees	-
NULL VOLTAGE	Max. mV rms	-
HIPOT, LEADS TO CASE, 500VAC	Max. mA rms	-
HIPOT, INTERPHASE, 250VAC	Max. mA rms	-
TEMPERATURE RANGE	°C	-
WEIGHT	oz	-
CONTINUOUS SPEED	Max. kRPM	-

10 BRCX - 400 - B 1A /15

FRAME SIZE	
10	Basic OD is 1.0 inches

SYSTEM TYPE	
BRCX	Single or Multiple speeds - Rotor Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT
400	Flange - Steel - 0.65 inches long with 0.984 inch pilot
401	Single Servo groove - Steel - 0.65 inch long with 1.04 inch pilot

Code	Type	Input Excitation			TR	Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA								
A	BRCX	7	10	50	0.5	-5	184	493	34	74	20	1
B	BRCX	4	5	43	0.50	7	73+J115	185+J305	31	83	20	1
H	BRCX	7	5	70	0.50	7	52+J92	150+J245	22	74	20	1
J	BRCX	4.25	7	55	0.47	3	50+J80	85+J135	18	31	20	1
K	BRCX	7	10	30	0.50	-9	276	687	18	91	20	1
P	BRCX	3.5	10	65	1.00	-7	71	687	7	91	50	1

CODE	ROTOR BORE	LENGTH
1	6 mm	0.65 inch
2	1/4 inch	0.65 inch
9	4 mm	0.65 inch

P/N	ERROR			Phasing	LEADS		Special Features	Weight Oz
	Pk-Pk arc-min	+/- %	velocity		AWG	Inch		
10BRCX-400-B1A/15	X	15	X	CW	28	24	X	1.3
10BRCX-401-A1/20	X	20	X	CCW	28	10	X	1.3
10BRCX-401-A1H/20	X	20	X	CCW	28	12	High Temp & Axial Lead	1.3
10BRCX-401-A1HL	X	20	X	CCW	26	79	High Temp & Axial Lead	1.3
10BRCX-401-A1HR	X	20	X	CCW	28	12	Hi-Temp	1.3
10BRCX-401-A1HT	X	20	X	CCW	26	79	High Temp & Axial Lead	1.3
10BRCX-401-A2C/20	X	20	X	CCW	28	12	X	1.3
10BRCX-401-A2H	X	20	X	CCW	28	12	Hi-Temp	1.3
10BRCX-401-A2HR	X	20	X	CCW	28	12	High Temp & Axial Lead	1.3
10BRCX-401-B1A/15	X	15	X	CW	28	24	X	1.3
10BRCX-401-B1A/20	X	20	X	CW	28	12	X	1.3
10BRCX-401-B1T/20	X	20	X	CW	26	12	Radiation	1.3
10BRCX-401-B2T	X	20	X	CW	26	16	Radiation	1.3
10BRCX-401-B2TA	X	20	X	CW	26	36	Radiation	1.3
10BRCX-401-B9T	X	20	X	CW	26	16	Radiation	1.3
10BRCX-401-H1/15	X	15	X	CCW	28	12	X	37g
10BRCX-401-H1V	X	15	X	CCW	28	12	Hi-Voltage	37g
10BRCX-401-J1A/15	X	15	X	CW	28	28	Tubing & Shielding	1.3
10BRCX-401-J2/15	X	15	X	CW	28	18	Tubing & Shielding	1.3
10BRCX-401-K1	30	X	X	CW	28	4	X	1.2
10BRCX-401-K1C	30	X	X	CW	Cable	25	X	1.2
10BRCX-401-K1CE	30	X	X	CW	Cable	45	X	1.2
10BRCX-401-K1E	30	X	X	CW	Cable	25	X	1.2
10BRCX-401-P1	30	X	X	CW	28	2	X	1.2

15 BRX - 700 - B 04 /AB

FRAME SIZE	
15	Basic OD is 1.5 inches

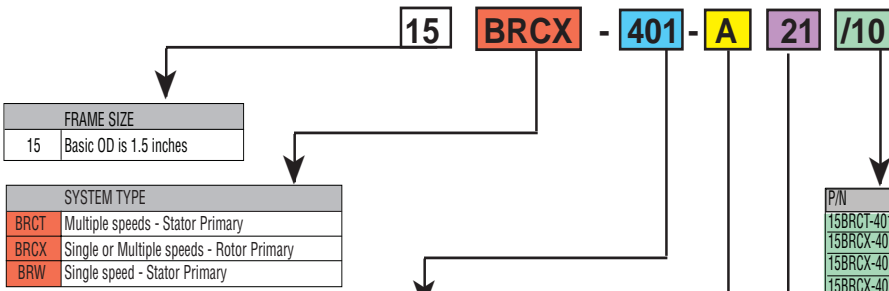
SYSTEM TYPE	
BRX	Single speed - Rotor Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT
700	Single Servo Groove - Aluminum - 0.635 inch long with 1.449 inch pilot

Code	Type	Input Excitation				Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA	TR							
B	BRX	2	10	50	0.98	+10	50	810	23	116	30	1
Except-B04AB		5	10	20	0.42	-8	295	820	60	116	20	1
D	BRX	8	8	50	0.50	0	182	627	55	116	30	1
F	BRX	4	5	45	0.50	1.5	129	461	23	116	20	1

CODE	ROTOR BORE	LENGTH
4	3/8 inch	1 inch
10	3/8 inch	0.635 inch
14	3/8 inch w/flat	0.635 inch

P/N	ERROR			Phasing	LEADS		Special Features	Weight Oz
	Pk-Pk	+/-	velocity		AWG	Inch		
	arc-min	%						
15BRX700-B04AB	20	X	X	CCW	28	40	X	67g
15BRX700-B10AA	20	X	2.40	CW	28	2	X	2.11
15BRX700-D10AA	16	X	2.50	CW	28	12	X	2.11
15BRX700-D10AC	16	X	2.50	CW	Cable	24	X	2.11
15BRX700-D10AD	16	X	2.50	CW	28	4	X	2.11
15BRX700-D10AE	16	X	2.50	CW	Cable	20	X	2.11
15BRX700-D10AF	16	X	2.50	CW	Cable	64	X	58g
15BRX700-D10AF	16	X	2.50	CW	Cable	64	X	2.11
15BRX700-D10AG	16	X	2.50	CW	Cable	45	X	58g
15BRX700-D10AH	16	X	2.50	CW	Cable	125	X	2.11
15BRX700-D10AJ	16	X	2.50	CW	Cable	45	X	2.11
15BRX700-D10AK	16	X	2.50	CW	Cable	124	X	58g
15BRX700-D10AL	16	X	2.50	CW	28	6	X	2.11
15BRX700-D14AA	16	X	2.50	CW	28	300mm	X	37g
15BRX700-F10AA	20	X	X	CCW	28	12	X	65g



FRAME SIZE	
15	Basic OD is 1.5 inches

SYSTEM TYPE	
BRCX	Multiple speeds - Stator Primary
BRCX	Single or Multiple speeds - Rotor Primary
BRW	Single speed - Stator Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT
401	Flange - Steel - 0.635 inches long with 1.417 inch pilot (Note #1)
402	Double Servo groove - Steel - 0.635 inch long with 1.449 inch pilot (Note #2)
500	Single Servo Groove - Steel - 1.0 inch long with 1.449 inch pilot (Note #2)
510	Single Servo Groove - Steel - 1.0 inch long with 1.449 inch pilot
600	Single Servo Groove - Aluminum - 1.0 inch long with 1.449 inch pilot
601	Single Servo Groove - Aluminum - 0.635 inch long with 1.449 inch pilot (Note #3)
602	Double Servo Groove - Aluminum - 0.635 inch long with 1.449 inch pilot (Note #4)
604	Double Servo Groove - Steel - 16mm long with 36.8mm pilot (Note #5)

- Notes:**
- 1 Except for the 15BRW-401-A51/20 which has an aluminum housing
  - 2 Except for 15BRCX-500-F12B/10 & F4CA which have a double servo groove.
  - 3 Except for 15BRCX-601-A46 & A46C which have 0.635 inch long with a 1.417 inch pilot.
  - 4 Except for the 15BRCX-602-F15A/15 & F15B/15 & F15C/15 which have a single servo groove.
  - 5 Except for the 15BRCX-604-AL46L which is 20mm long

Code	Type	Input Excitation			TR	Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA								
A	BRCX	3.5	5	6	0.50	+11	735+J1435	270+J580	365	150	30	2
A	BRCX	10	4.5	58	0.50	+12	110+J165	280+J370	43	172	30	1
Except -A10A/10		8	4	22	0.25	+12	210+J375	155+J255	98	83	20	1
B	BRCX	7	10	40	0.50	-7	78+J190	45+J130	19	105	20	1
Except -B10F		7	10	45	0.50	3	193	507	37	94	20	1
C	BRCX	7.5	6.6	55	1.00	-1	75+J145	360+J600	20	166	30	1
D	BRCX	4	10	16	0.47	-4	322	856	24	126	20	2
F	BRCX	4	5	23	0.50	+6	105+J170	200+J270	41	94	25	1
G	BRCX	2	6	45	1.00	+5	28+J41	167+J107	7.5	63	15	1
J	BRCX	4.25	7	55	0.47	+4	42+J72	70+J107	14	30	20	1
K	BRCX	7	10	32	0.50	-9	279	697	34	124	50	1
L	BRCX	4.25	10	35	0.47	+7	65+J135	155+J380	12	63	20	3
P	BRCX	3.5	10	65	1.00	-9	67	697	8.5	124	50	1
T	BRCX	7	8	45	0.50	+21	169	1210	30	170	20	4
AL	BRCX	7	8	50	0.50	+4	150	455	35	110	30	1
A	BRW	3.5	5	7	0.50	+15	800+J1450	300+J490	282	170	30	1

CODE	ROTOR BORE	LENGTH
4	3/8 inch	1 inch (note #1)
10	3/8 inch	0.635 inch
12	1/4 inch	1 inch
13	1/4 inch w/key	1 inch
15	1/4 inch w/key	0.635 inch
17	.437 inch	1.53 inch
21	8 mm	0.635 inch
23	.376 inch	1.19 inch
27	10 mm	0.635 inch
36	3/8 inch w/key	0.635 inch
40	3/8 w/setscrew	1.19 inch
43	Special-See Print	1 inch
44	7/16 inch w/key	1 inch
46	12 mm	16 mm (note #2)
47	1/4 inch w/key	0.635 inch
48	8 mm w/key	0.635 inch

- Notes:**
- 1 Except for the 15BRCX-500-F4CA which is 12mm
  - 2 Except for the 15BRCX-604-AL46L which is 20 mm long

P/N	ERROR			Phasing	LEADS AWG	Inch	Special Features	Weight Oz
	Pk-Pk	+/-	velocity					
	arc-min	%						
15BRCT-401-A21/20	X	20	X	CCW	28	12	X	3
15BRCX-401-A21/10	X	10	X	CCW	26	12	X	3
15BRCX-401-A21H/10	X	10	X	CCW	26	12	Hi-Temp	3
15BRCX-401-A48/10	X	10	X	CCW	28	12	X	3
15BRCX-401-A48H/10	X	10	X	CCW	28	12	Hi-Temp	3
15BRCX-402-A10A/10	X	10	X	CCW	28	12	Shielding	3
15BRCX-402-B10A/10	X	10	X	CCW	28	12	Shielding	2.6
15BRCX-402-L10/8	X	8	X	CCW	28	12	X	2.6
15BRCX-402-L10A	X	8	X	CCW	29	12	Silaflex	2.6
15BRCX-402-L10S/8	X	8	X	CW	28	12	Connector	2.6
15BRCX-500-CA-10	X	10	X	CCW	26	12	Shielding	4.8
15BRCX-500-F12/10	X	10	X	CCW	26	12	X	4.5
15BRCX-500-F12B/10	X	10	X	CW	26	24	X	4.5
15BRCX-500-F12C/10	X	10	X	CCW	26	12	Shielding	4.5
15BRCX-500-F12T/10	X	10	X	CCW	26	24	Radiation	4.5
15BRCX-500-F13/10	X	10	X	CCW	26	12	X	4.5
15BRCX-500-F13/15	X	15	X	CCW	26	12	X	4.5
15BRCX-500-F13P/10	X	10	X	CCW	26	12	Powder Coat	4.5
15BRCX-500-F13PH	X	10	X	CCW	26	12	Powder Coat	4.5
15BRCX-500-F36HV/10	X	10	X	CCW	26	36	1600 Hipot & Hi-Temp	4.5
15BRCX-500-F36HV7/10	X	10	X	CCW	26	36	1600 Hipot & Hi-Temp	4.5
15BRCX-500-F4	X	7	X	CCW	26	12	X	4.5
15BRCX-500-F40/10	X	10	X	CCW	26	12	X	4.5
15BRCX-500-F4A/10	X	10	X	CCW	26	24	X	4.5
15BRCX-500-F4C/10	X	10	X	CCW	26	12	Shielding	4.5
15BRCX-500-F4CA	X	10	X	CW	28	12	Axial Exit	115g
15BRCX-500-F4T/10	X	10	X	CCW	26	24	Radiation	4.5
15BRCX-500-G44	X	7	X	CCW	26	12	X	4.5
15BRCX-500-G4B	X	7	X	CCW	26	12	Shielding	4.5
15BRCX-500-J12	X	7	X	CCW	24	12	X	4.5
15BRCX-500-J23	X	7	X	CCW	24	12	X	4.5
15BRCX-500-J36/15	X	15	X	CCW	24	12	X	4.5
15BRCX-500-J4	X	7	X	CCW	24	24	Shielding	4.5
15BRCX-510-L36P	10	X	X	CCW	26	12	Hi-Temp	4.5
15BRCX-600-G4	X	7	X	CCW	26	12	X	3.5
15BRCX-600-J17	X	7	X	CCW	24	26	X	4.5
15BRCX-600-J17A	X	7	X	CCW	24	30	Shielding	4.5
15BRCX-600-J17TA	X	7	X	CCW	26	54	Shielding & Radiation	4.5
15BRCX-600-J43	X	7	X	CCW	24	24	Shielding	3.5
15BRCX-601-A46	X	10	X	CCW	26	17	X	3
15BRCX-601-A46C	25	X	X	CCW	26	17	Connector & Tubing	66g
15BRCX-601-K10	16	X	2.50	CCW	28	4	X	2.6
15BRCX-601-K10C	16	X	2.50	CW	24	X	X	2.6
15BRCX-601-K10CE	16	X	2.50	CCW	12	X	X	2.6
15BRCX-601-K10CF	16	X	2.50	CW	24	X	X	2.6
15BRCX-601-K10CG	16	X	2.50	CW	63	X	X	2.6
15BRCX-601-K10E	16	X	2.50	CW	26	6	X	2.6
15BRCX-601-K27CE	16	X	2.50	CCW	12	X	X	2.6
15BRCX-601-P10	16	X	2.50	CW	28	2	X	2.6
15BRCX-602-A46	X	10	X	CCW	26	17	X	3
15BRCX-602-B10A/10	X	10	X	CW	28	12	X	2.3
15BRCX-602-B10E	20	X	X	CW	28	12	X	2.3
15BRCX-602-B10F	X	10	X	CW	28	24	X	2.3
15BRCX-602-B10G	20	X	X	CW	28	12	X	2.3
15BRCX-602-B21/10	X	10	X	CCW	28	12	X	2.3
15BRCX-602-B21P	X	10	X	CW	28	12	Powder Coat	2.3
15BRCX-602-B27/10	X	10	X	CW	28	12	X	2.3
15BRCX-602-B36	20	X	X	CCW	28	12	X	2.3
15BRCX-602-B46C	X	30	X	CW	28	12	X	2.3
15BRCX-602-BA10A/10	X	10	X	CCW	28	12	X	2.3
15BRCX-602-BA36	20	X	X	CCW	28	12	Hi-Temp	2.3
15BRCX-602-BA47/10	X	10	X	CCW	28	12	X	2.3
15BRCX-602-BA47C1	X	10	X	CCW	33	X	X	2.3
15BRCX-602-BA47C2	X	10	X	CCW	29	X	X	2.3
15BRCX-602-D10	20	X	X	CCW	28	28	X	2.6
15BRCX-602-D47/4	X	4	X	CCW	28	12	X	2.6
15BRCX-602-F15A/15	X	15	X	CCW	24	12	X	2.3
15BRCX-602-F15B/15	X	15	X	CCW	24	X	X	3.5
15BRCX-602-F15C/15	X	15	X	CCW	15	X	X	4.8

21 BRX - 700 - B 42 AA

FRAME SIZE	
21	Basic OD is 2.1 inches

SYSTEM TYPE	
BRX	Single speed - Rotor Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT
700	Single Servo Groove - Aluminum - 1.02 inch - 2.061 inch
701	Single Servo Groove - Aluminum - 1.26 inch - 1.85 inch
702	Single Servo Groove - Aluminum - 26.06 mm - 50.77 mm
704	None- Aluminum - 25.8 mm - 52.44 mm
708	Flange - Aluminum - 1.02 inch - 1.968 inch
709	Flange - Steel - 26 mm - 55 mm

Code	Type	Input Excitation				Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA	TR							
B	BRX	2	10	46	1.00	-3	56	602	18	120	30	1
C	BRX	6	7.5	25	0.33	-13	306	456	23	118	20	1
D	Note #1	8	8	46	0.50	1	260	565	84	120	30	1
D	Note #2	11.3	8	125	0.52	-7.5	107	235	17	44	20	1
E	BRX	6	6	28	0.31	-8	252	193	30	44	20	1
F	BRX	4	5	27	0.50	-4	178	400	27	116	25	1
H	BRX	4	4	55	0.45	10	94	143	27	45	25	1
J	BRX	7	10	40	0.50	-5	214	638	75	120	30	1

### NOTES

- 1 X700 except 21BRX700-D11AC
- 2 21BRX700-D11AC

CODE	BORE	LENGTH
3	0.8	26 mm
6	0.63	1.02
11	0.67	1.49 (Note 1)
11	17.04 mm	25.8 mm (Note 2)
22	22mm	35 mm

CODE	BORE	LENGTH
23	12mm	26.06 mm
42	0.5	1.06
84	0.59	1.26
110	0.5	1.06

### NOTES

- 1 For 21BRX700-D11AC
- 2 For 21BRX704-F11BB

P/N	ERROR			Phasing	LEADS		Special Features	Weight Oz
	Pk-Pk arc-min	+/- velocity %			AWG	Inch		
21BRX700-B42AA	18	X	2.00	CW	28	7	X	200g
21BRX700-D110D	18	X	2.00	CCW	Cable	38	X	200g
21BRX700-D110L	18	X	2.00	CCW	Cable	69	X	200g
21BRX700-D11AC	15	X	X	CW	26	12	X	8
21BRX700-D42AA	18	X	2.00	CW	28	65	X	200g
21BRX700-D42AB	18	X	2.00	CW	28	24	X	200g
21BRX700-D42AC	18	X	2.00	CW	Cable	27	X	200g
21BRX701-C84AB	X	12	2.00	CW	26	15	X	7.4
21BRX702-J42AA	20	X	2.00	CW	28	305mm	X	200g
21BRX702-J42AB	20	X	2.00	CW	28	650mm	Shielding	200g
21BRX704-F11BB	20	X	X	CW	26	250mm	Tubing & Terminals	210g
21BRX708-H06AA	20	X	X	CCW	26	12	X	190g
21BRX709-E03AA	24	X	X	CCW	26	220mm	X	128
21BRX709-E23AA	24	X	X	CCW	26	220mm	X	128
27BRX709-L22AA	20	X	X	CCW	28	300mm	Setcrews & Tubing	347g

21 BRCT - 510 - A 7 B/10

FRAME SIZE	
21	Basic OD is 2.1 inches

SYSTEM TYPE	
BRCT	Multiple speeds - Stator Primary
BRCX	Single or Multiple speeds - Rotor Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT	
335	Single Servo Groove - Steel - 1.35 inch - 2.061 inch	
500	Double Servo Groove - Steel - 1.25 inch - 2.061 inch	Note #1
501	Single Servo Groove - Steel - 1.06 inch - 1.997 inch	Note #2
505	Single Servo Groove - Steel - 1.25 inch - 2.062 inch	
508	Flange - Steel - 1.06 inch - 1.967 inch	
510	Single Servo Groove - Steel - 1.25 inch - 2.061 inch	Note #3
511	Single Servo Groove - Steel - 1.06 inch - 1.997 inch	
520	Single Servo Groove - Steel - 1.25 inch - 2.1 inch	
600	Single Servo Groove - Aluminum - 1.35 inch - 2.061 inch	Note #4
601	Single Servo Groove - Aluminum - 1.06 inch - 2.061 inch	
607	Double Servo Groove - Aluminum - 1.06 inch - 2.061 inch	
607	Single Servo Groove - Aluminum - 1.06 inch - 2.061 inch	
610	Double Servo Groove - Aluminum - 1.35 inch - 2.061 inch	Note #5
611	Double Servo Groove - Aluminum - 1.06 inch - 2.061 inch	Note #6
616	Flange - Aluminum - 1.25 inch - 2.36 inch	
621	Single Servo Groove - Aluminum - 1.26 inch - 1.85 inch	

**NOTES**

- Except for the E66,F10,F15,F8,F8-01,H20A, MA7 which is a Single Servo Groove
- Except for the A42F which Flange Mount and 3 inch pilot
- Except for the 21BRCT-510-A7B/10-01 which is Double Servo  
Except for the A7B/10 & the D7B/10 which has no servo groove
- Except for the B042A, B042AD, B042B, B042BH, B042BL, B043A, B080BP, B091B, B091H, D39A/5 which are 1.06 inches long
- Except for the 21BRCT-610-LD12A which Single Servo - Steel
- Except for the 21BRCX-611-D42B/5 which is 1.25 inch long  
B091H, D39A/5 which are 1.06 inches long

Code	Type	Input Excitation			TR	Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA								
A	CT-510	7.8	9.3	12	0.43	-10	615+J1760	245+J685	135	43	30	2
A	CX-501	7.5	6.6	55	1.04	-2	85+J135	455+J860	31	107	25	1
A	CX-510	8	4	20	0.25	5.5	260+J390	90+J140	10	38	15	1
B	CX-600	7	7	40	0.50	0	204	370	59	49	30	1
B	Note #1	7	10	31	0.50	-21	250	538	20	49	50	1
B	Note #2	8	8	52	0.50	-3	173	412	52	49	30	1
D	CX-510 & 520	8	4	20	0.25	5.5	210+J410	110+J180	53	40	15	2
D	CX-600	4.25	7	55	0.47	4	50+J75	95+J190	18	40	20	2
D	CX-607 & 611	4	5	27	0.50	2	85+J160	105+J240	28	40	25	2
E	CX-500	2	2	20	1.00	9	60+J110	315+J545	25	150	20	1
F	Note #3	7	2.5	25	0.50	6	165+J270	240+J385	52	88	25	1
F	Note #4	7	2.5	25	0.50	6	150+J180	200+J365	60	74	25	1
H	CX-500	4	3.4	28	0.50	0	80+J145	110+J205	31	31	25	1
H	CX-600	7	5	77	0.50	6	63+J92	77+J150	31	22	30	1
H	CX-601	4	5	25	0.50	-6	105+J180	185+J315	35	50	25	1
H	CX-616	7	10	25	0.47	-7	185+J230	270+J480	105	34	25	1
HC	CX-500	4	2	34	0.50	21	152	247	38	65	25	1
HD	CX-500	4	5	25	0.90	-6	105+J180	150+J280	31	88	25	1
HG	Note #5	7	10	30	0.50	-8	145+J240	265+J485	64	49	30	1
J	Note #6	4.25	7.5	55	0.47	4	62+J61	80+J137	36	15	20	1
JA	CX-621	6	7.5	55	0.28	-1	129	81	35	11	20	1
JC	CX-500	6	7.5	55	0.33	-1	75+J105	55+J95	35	12.6	30	1
L	CX-511	7	4	30	0.50	8	130+J260	190+J400	43	88	25	3
L	CX-601	4	5	TBD	TBD	TBD	TBD	TBD	21	25	3	
L	CX-616	4.25	7.5	55	0.47	5	94	150	18	21	10	3
L	CX-616	7	10	15	0.29	1	300+J500	160+J435	88	60	15	3
LC	CX-511	6.7	6.4	50	1.00	-2	70+J155	490+J1120	13	190	25	3
LD	CT-610	3.55	5	3.3	0.50	1	2410+J5520	410+J1200	1030	130	20	3
LE	CX-500 & 610	4.25	7.5	55	0.47	5	55+J76	60+J38	18	21	10	3
LE	CX-616	7	10	13.5	0.50	-2	175+J305	280+J815	54	90	15	3
M	CX-600	8	2.6	10	1.00	5	420+J780	1955+J432	200	600	35	1
MA	CX-500	10	3	17	0.81	4.5	300+J600	96+J2135	120	150	25	1
T	CX-510	4	10	20	.5	0	290+J720	120+J195	40	115	20	4

**NOTES**

- CX-600-B042A, B042AD, B043A
- CX-600-B042B, B042BH, B042BL, B042BP, B091B
- CX-500 & 501 except 21BRCX-501-F80/12
- 21BRCX-501-F80/12
- CX-501, 508, 607
- CX-335, 500, 501, 505, 600

PN	ERROR				Phasing	LEADS		Special Features	Weight Oz
	Fk-Fk arc-min	+/- %	velocity	%		AWG	Inch		
21BRCT-510-A7B/10	X	10	X	COW	24	12	Capacitor	11	
21BRCT-510-A7B/10-01	X	10	X	COW	24	12	Capacitor	11	
21BRCT-610-LD12A	8	X	X	COW	26	12	X	11	
21BRCX-335-J25	X	7	X	COW	24	12	Tubing & Shielding	11	
21BRCX-500-E66	X	7	X	COW	24	12	Tubing & Shielding	11	
21BRCX-500-F10	X	7	X	COW	26	24	Tubing & Shielding	11	
21BRCX-500-F15	X	7	X	COW	25	30	Tubing & Shielding	11	
21BRCX-500-F8	X	7	X	COW	26	12	Tubing & Shielding	11	
21BRCX-500-F8-01	X	7	X	COW	26	12	X	11	
21BRCX-500-H20A	X	7	X	COW	26	12	X	11	
21BRCX-500-H49	X	7	X	COW	26	12	X	11	
21BRCX-500-H49A	X	7	X	COW	26	12	X	11	
21BRCX-500-H7	X	7	X	COW	26	12	X	11	
21BRCX-500-H7-01	X	7	X	COW	26	12	X	11	
21BRCX-500-H7A	X	7	X	COW	26	12	X	11	
21BRCX-500-H7C	X	7	X	COW	26	12	Tubing & Shielding	11	
21BRCX-500-HC28	X	7	X	CW	26	12	X	11	
21BRCX-500-HC7	X	7	X	CW	26	24	X	11	
21BRCX-500-HD7	X	7	X	COW	26	12	X	11	
21BRCX-500-J60P15	X	15	X	OW	24	12	X	11	
21BRCX-500-JC7A	20	X	X	COW	26	12	X	11	
21BRCX-500-L69P	6	X	X	COW	24	12	X	11	
21BRCX-500-MA7	X	7	X	COW	26	12	X	11	
21BRCX-501-A42/20	X	20	X	COW	24	12	X	8.8	
21BRCX-501-A42C	X	20	X	COW	24	3	CONNECTOR	250g	
21BRCX-501-A42F	X	20	X	COW	24	3	CONNECTOR	250g	
21BRCX-501-F45	X	7	X	COW	26	12	X	8.8	
21BRCX-501-F45/12	X	12	X	COW	26	12	X	8.8	
21BRCX-501-F80/12	X	12	X	COW	24	12	X	8.8	
21BRCX-501-HG80/12	X	12	X	CW	26	12	X	8.8	
21BRCX-501-J45/10	X	10	X	COW	24	12	X	8.8	
21BRCX-505-J12	X	7	X	COW	24	12	Tubing & Shielding	11	
21BRCX-508-HG103/10	X	10	X	CW	26	12	X	8.8	
21BRCX-510-A7B/10	X	10	X	COW	24	12	X	11	
21BRCX-510-A7B/10-01	X	10	X	COW	24	12	X	11	
21BRCX-510-A7C/10-01	X	10	X	COW	24	12	Tubing & Shielding	11	
21BRCX-510-D7B/10	X	10	X	COW	24	12	X	11	
21BRCX-510-T60P3	X	3	X	COW	26	12	X	11	
21BRCX-510-T7A/3	X	3	X	COW	26	12	Tubing & Shielding	11	
21BRCX-511-L42/5	X	5	X	COW	24	18	X	8.8	
21BRCX-511-LC42	X	7	X	COW	24	12	X	8.8	
21BRCX-520-A7B/10	X	10	X	COW	24	12	X	8.8	
21BRCX-520-D7B/10	X	10	X	COW	24	12	X	8.8	
21BRCX-600-B042A	20	X	2.10	CW	28	6	X	7.2	
21BRCX-600-B042AD	20	X	2.10	CW	28	7	X	7.2	
21BRCX-600-B042B	20	X	2.10	CW	28	8	X	208g	
21BRCX-600-B042BH	20	X	2.10	CW	28	8	Hi-Temp	208g	
21BRCX-600-B042BL	20	X	2.10	CW	28	8	X	208g	
21BRCX-600-B043A	20	X	2.10	CW	28	7	X	7.2	
21BRCX-600-B080BP	20	X	2.10	CW	28	8	Powder Coat	208g	
21BRCX-600-B091B	16	X	X	CW	28	8	X	TBD	
21BRCX-600-B091H	X	5	X	CW	28	8	Hi-Temp	180g	
21BRCX-600-D39A/5	X	5	X	CW	24	30	X	9.4	
21BRCX-600-H12	X	7	X	COW	24	12	Tubing & Shielding	9.4	
21BRCX-600-H12D	X	7	X	COW	24	12	Tubing & Shielding	9.4	
21BRCX-600-H39	X	7	X	COW	24	12	Tubing & Shielding	9.4	
21BRCX-600-J12	X	7	X	COW	24	12	Tubing & Shielding	9.4	
21BRCX-600-J12A	X	7	X	COW	24	30	Tubing & Shielding	9.4	
21BRCX-600-J12TA	X	7	X	COW	26	54	Rad Hard & Tubing & Shielding	9.4	
21BRCX-600-J33	X	7	X	COW	24	12	Tubing & Shielding	9.4	
21BRCX-600-J39	X	7	X	COW	24	12	Tubing & Shielding	9.4	
21BRCX-600-J39A	X	7	X	COW	24	30	Tubing & Shielding	9.4	
21BRCX-600-J39D	X	7	X	COW	24	128	Tubing & Shielding	9.4	
21BRCX-600-J39TA	X	7	X	COW	26	54	Rad Hard & Tubing & Shielding	9.4	
21BRCX-600-M12	X	10	X	COW	26	20	Rad Hard & Tubing & Shielding	9.4	
21BRCX-600-M12/10	X	10	X	COW	24	12	Rad Hard & Tubing & Shielding	9.4	
21BRCX-601-H110D/10	X	10	X	COW	Cable	38	X	8.8	
21BRCX-601-H110L/10	X	10	X	COW	Cable	69	X	8.8	
21BRCX-601-H42/10	X	10	X	COW	24	12	X	7.4	
21BRCX-601-H42D/10	X	10	X	COW	Cable	24	X	8.8	
21BRCX-601-H42P/10	X	10	X	COW	24	12	Powder Coat	7.4	
21BRCX-601-H91/20	X	20							

31 BRCX - 500 - B 1 /10

FRAME SIZE	
31	Basic OD is 3.1 inches

SYSTEM TYPE	
BRCX	Single or Multiple speeds - Rotor Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT
500	Single Servo - 1.25 inch long - Steel - 3.05 inch
502-F3	Flange - Steel - 3.62 inch long - 3.62 inch pilot
502-F34	Flange - Steel - 30 mm - 90 mm
503	Flange - Steel - 1.181 inch - 3.54 inch

Code	Type	Input Excitation				Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA	TR							
B	BRCX	4	5	30	0.50	1	90+J140	185+J280	34	71	20	1
B1	BRCX	4	5	30	0.50	1	75+J120	225+J385	35	93	20	1
D	BRCX	7	4	30	0.50	3	273	678	76	102	30	1
E	BRCX	15	1	100	0.45	Print	Print	Print	42	Print	35	1+8
J	BRCX	4.25	7	55	0.47	4	58+J78	115+J210	28	38	20	1
JD	BRCX	4.25	7	75	0.47	22	63	728	22	75	75	4
F3	BRCX	8	6.5	75	0.50	2	72+J105	170+J355	33	52	30	1
F34	BRCX	7	8	55	0.48	-6.5	156	473	44	69	75	1

CODE	ROTOR BORE	LENGTH
1	1.5 inch	1.25 inch
3	1.37 inch w/keyway	1.25 inch
7	1.56 inch	1.25 inch
15	0.985 inch	1.25 inch
16	1.181 inch	1.25 inch
21	1.342 inch	1.50 inch
34	30 mm	34 mm

P/N	ERROR			Phasing	LEADS		Special Features	Weight Oz
	Pk-Pk arc - min	+/- velocity %	velocity %		AWG	Inch		
31BRCX-500-B1/10	X	10	X	CCW	24	12	X	21
31BRCX-500-B1/20	X	20	X	CCW	24	12	X	21
31BRCX-500-B7/10	X	10	X	CCW	24	12	X	21
31BRCX-500-B7A	X	10	X	CCW	Cable	7	X	21
31BRCX-500-B7B	X	10	X	CCW	24	12	X	21
31BRCX-500-D1/10	X	10	X	CCW	24	12	X	21
31BRCX-500-D15/10	X	10	X	CCW	24	12	X	21
31BRCX-500-D16/10	X	10	X	CCW	24	12	X	21
31BRCX-500-E1A	X	Print	X	CCW	26	12	Dual	470g
31BRCX-500-E1B	X	Print	X	CCW	26	12	Dual	470g
31BRCX-500-J16/P	X	10	X	CCW	26	18	Tubing & Shielding - Powder Coat	21
31BRCX-500-JD7	12	X	X	CCW	26	37	Shielding	470g
31BRCX-502-F3/20	X	20	X	CW	26	17	Tubing	21
31BRCX-502-F34	30	X	X	CW	26	300mm	Tubing	470g
31BRCX-503-D21/15	X	15	X	CCW	24	12	Rotor Setscrew	30

55 BRCX - 520 - J 5 /20

FRAME SIZE	
55	Basic OD is 5.5 inches

SYSTEM TYPE	
BRCX	Single or Multiple speeds - Rotor Primary

TYPE	HOUSING MOUNT-MATERIAL-LENGTH-PILOT
520	Single Servo - Steel - 1.25 inch - 5.50 inch

Code	Type	Input Excitation				Phase Shift	Zro Ohm	Zso Ohm	Rotor Ohm	Stator Ohm	Null mv	Speed
		Vrms	KHz	mA	TR							
J	BRCX	4.25	7	55	0.47	1.00	91	468	39	54	30	1
JA	BRCX	4.25	7	55	0.47	1.00	41+J77	175+J420	18	96	30	12
JB	BRCX	4.25	7	55	0.47	-1.00	46+J84	140+J255	18	41	20	8
JC	BRCX	4.25	7	55	0.47	3.00	42+J83	205+J625	18	120	20	16
JD	BRCX	4.25	7	55	0.47	-8.00	TBD	TBD	26	197	20	4

CODE	ROTOR BORE	LENGTH
5	3.65 inch	1.25 inch

P/N	ERROR			Phasing	LEADS		Special Features	Weight Oz
	Pk-Pk arc-min	+/- %	velocity		AWG	Inch		
55BRCX-520-J5/30	X	30	X	CCW	24	15	Tubing & Shielding	53
55BRCX-520-J5A	X	30	X	CCW	24	15	Tubing & Shielding	53
55BRCX-520-JA5/2	4	X	X	CCW	24	12	Tubing & Shielding	48
55BRCX-520-JB5/4	8	X	X	CCW	24	12	Tubing & Shielding	53
55BRCX-520-JC5/2	4	X	X	CCW	24	12	Tubing & Shielding	53
55BRCX-520-JD5	10	X	X	CCW	24	12	Tubing & Shielding	48