



ELECTRIC ACTUATORS

TORQUES THROUGH 5,300 IN/LBS
115V AC, 230V AC, 24V AC, 12V DC, AND 24V DC VOLTAGES
ON/OFF, MODULATING OR JOG SERVICE

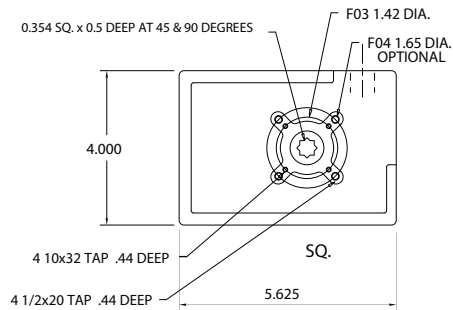
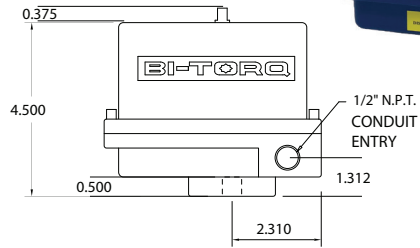


BI-100-E

115VAC* ACTUATOR SPECIFICATIONS

Output Torque	100 inch pounds
Cycle Time	2.5 sec/90°
Duty Cycle	75%
Standard Motor	115VAC/60Hz/1ph
Standard Enclosure	NEMA 4
Enclosure Material	Aluminum
Enclosure Coating	Thermal bonding polyester powder
Temperature Rating**	-40° F to +150° F
Thermal Overload Protection	Standard
Manual Override	Standard (omit on NEMA 7)
Lock Rotor Current	0.55 amps
Switches	15A, 1/2 HP 125 250VAC/0.5A/125VDC
Weight	5 pounds

*See page 7 for other voltage or modulating performance specifications
 **heater required below 0° F



CLEARANCE FOR REQUIRED FOR COVER REMOVAL: 3.000"

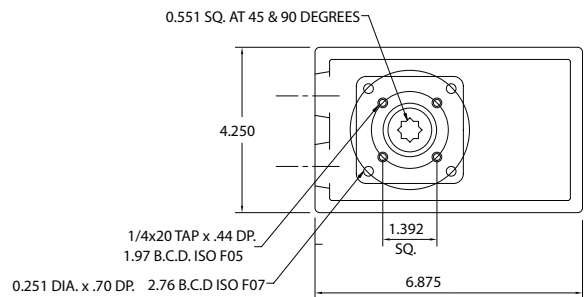
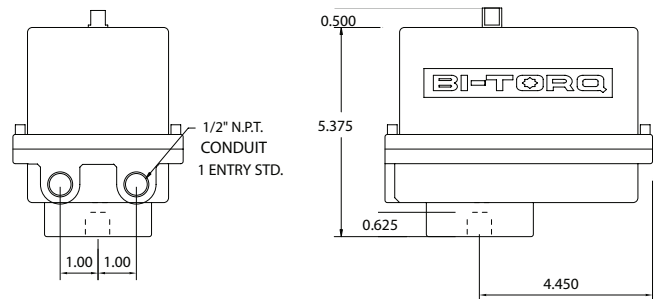


BI-200 AND 300-E

115VAC* ACTUATOR SPECIFICATIONS

Output Torque	200 or 300 inch pounds
Cycle Time	5 sec/90°
Duty Cycle	25%
Standard Motor	115VAC/60Hz/1ph
Standard Enclosure	NEMA 4
Enclosure Material	Aluminum
Enclosure Coating	Thermal bonding polyester powder
Temperature Rating**	-40° F to +150° F
Thermal Overload Protection	Standard
Manual Override	Standard (omit on NEMA 7)
Lock Rotor Current	0.75 amps
Switches	15A, 1/2 HP 125 250VAC/0.5A/125VDC
Weight	7 pounds

*See page 7 for other voltage or modulating performance specifications
 **heater required below 0° F



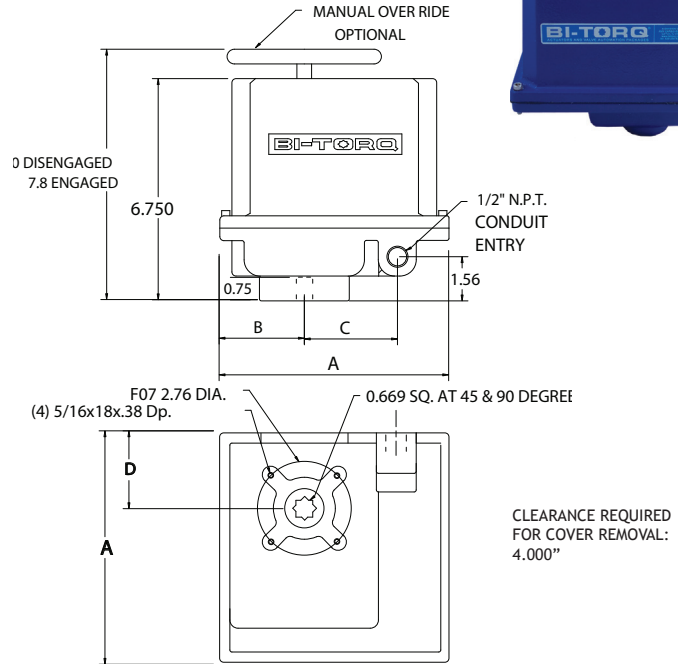
CLEARANCE REQUIRED FOR COVER REMOVAL: 3.000"

BI- 400-E THRU 1500-E

115VAC* ACTUATOR SPECIFICATIONS

Output Torque	BI-400...400 inch pounds BI-675...675 inch pounds BI-1000...1000 inch pounds BI-1500...1500 inch pounds
Cycle Time	BI-400...10 sec/90° BI-675-1000...15 sec/90° BI-1500...30 sec/90°
Duty Cycle	25%
Standard Motor	115VAC/60Hz/1ph
Standard Enclosure	NEMA 4
Enclosure Material	Aluminum
Enclosure Coating	Thermal bonding polyester powder
Temperature Rating**	-40° F to +150° F
Thermal Overload Protection	Standard
Manual Override	Standard declutchable
Lock Rotor Current	BI-400/675...0.75 amps BI-1000/1500...1.1 amps
Switches	15A, 1/2 HP 125 250VAC/0.5A/125VDC
Weight	13 pounds

*See page 7 for other voltage or modulating performance specifications
**heater required below 0° F



ENCLOSURE	A	B	C	D
NEMA 4	7.00	2.38	2.81	2.63
NEMA 7	8.50	3.13	2.81	3.38

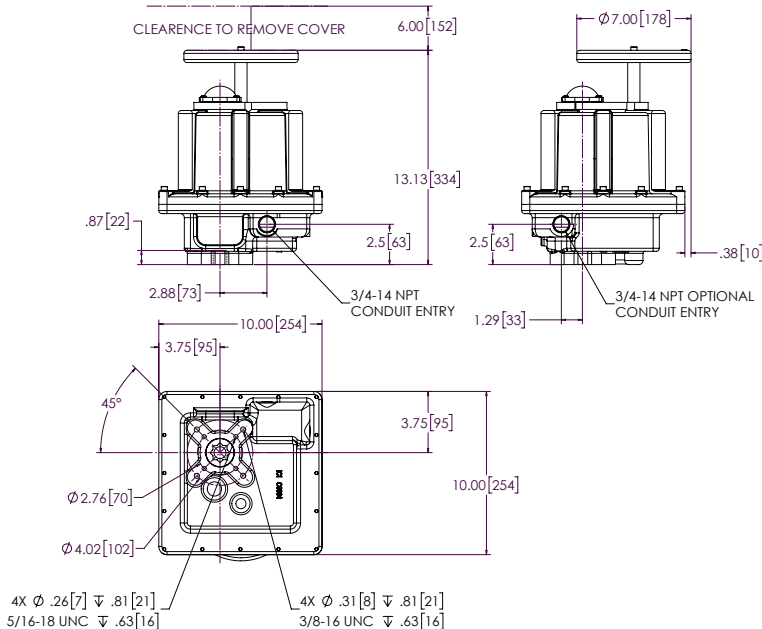


BI-2000-E AND 3800-E

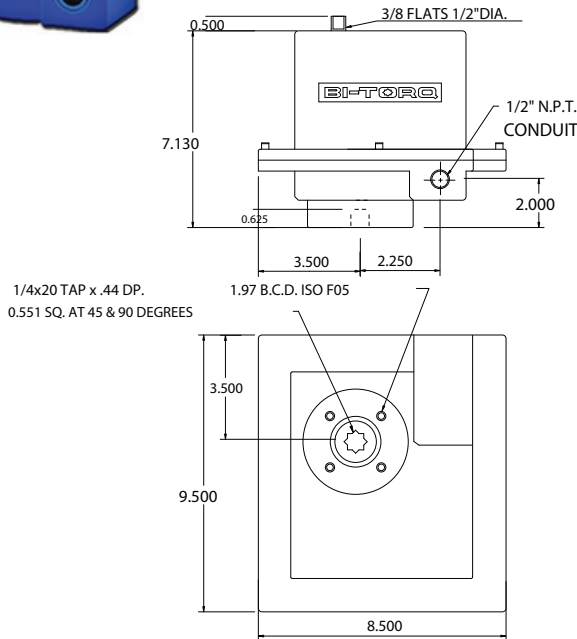
115VAC* ACTUATOR SPECIFICATIONS

Output Torque	BI-2000...2000 inch pounds BI-3800...3800 inch pounds
Cycle Time	BI-2000...12 sec/90° BI-3800...14 sec/90°
Duty Cycle	100%
Standard Motor	115VAC/60Hz/1ph
Standard Enclosure	NEMA 4
Enclosure Material	Aluminum
Enclosure Coating	Thermal bonding polyester powder
Temperature Rating**	-40° F to +150° F
Thermal Overload Protection	Standard
Manual Override	Standard Declutchable
Lock Rotor Current	BI-2000...2.6 amps BI-3800...2.9 amps
Switches	15A, 1/2 HP 125 250VAC/0.5A/125VDC
Weight	30 pounds

*See page 7 for other voltage or modulating performance specifications
**heater required below 0° F



BI-200 AND 300 NEMA 7



CLEARANCE REQUIRED FOR COVER REMOVAL: 4.000"

115VAC* ACTUATOR SPECIFICATIONS

Output Torque	BI-200...200 inch pounds BI-300...300 inch pounds
Cycle Time	BI-200...5 sec/90° BI-300...5 sec/90°
Duty Cycle	25%
Standard Motor	115VAC/60Hz/1ph
Standard Enclosure	NEMA 7
Enclosure Material	Aluminum
Enclosure Coating	Thermal bonding polyester powder
Temperature Rating**	-40° F to +150° F
Thermal Overload Protection	Standard
Manual Override	Optional
Lock Rotor Current	BI-200...0.75 amps BI-300...1.1 amps
Switches	15A, 1/2 HP 125 250VAC/0.5A/125VDC
Weight	9 pounds

*See page 7 for other voltage or modulating performance specifications
**heater required below 0° F

FAIL SAFE ELECTRIC ACTUATOR OPTIONS



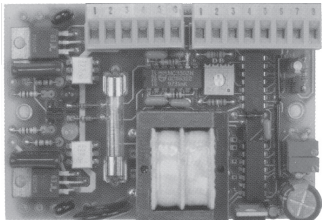
BATTERY BACKUP SYSTEM

The uninterruptible power system (UPS) as a stand alone unit allows operation of the actuator 2-4 times even after loss of power. The system can be used with any of the BI-TORQ electric actuator series and is ideal for critical applications. We also offer an internal battery version to go inside our BI series - available with NEMA 4 or 7 enclosures.

BI-TORQ's electric actuator series features durable construction for long-lasting performance. Our electric actuators are ideal for quarter-turn applications using ball, plug or butterfly valves. BI-TORQ also is pleased to offer a wide range of options for our electric actuators. Please consult our sales personnel for available combinations or additional options not listed below.

STANDARD FEATURES	OPTIONAL FEATURES
<p>HEAVY DUTY GEARS To withstand stall conditions, reducing potential down time due to gear failure</p> <p>PERMANENT LUBRICATION Reduces the need for maintenance</p> <p>NEMA 4 ENCLOSURES The standard enclosure protects against splashing, seepage, hose-downs and external applications. Powder coating and stainless steel fasteners provide maximum corrosion protection</p> <p>LIMIT SWITCHES SPDT limit switches allow for independent fine tuning of the open and closed positions. Quick adjust cams permit easy adjustments in the field.</p> <p>UNIVERSAL MOUNTING Actuators can be mounted and operated in any position. ISO 5211 mounting and a double star output are available on most models.</p> <p>REVERSING MOTORS Actuators can be used on a wide range of applications and valve types</p> <p>THERMAL OVERLOAD PROTECTION To protect the motor in stall conditions</p> <p>TERMINAL STRIP Allows for quick and easy field installation</p>	<p>AUXILIARY SWITCHES Dry contact switches for position indication or control of peripheral equipment.</p> <p>ELECTRONIC POSITIONER On-board positioner for precise control applications that use analog signals (4-20mA, 0-10VDC)</p> <p>FEEDBACK POTENTIOMETER Resistive position feedback for control applications</p> <p>HEATER AND THERMOSTAT For prevention of moisture in low temperature or high humidity environments</p> <p>FEEDBACK TRANSMITTER For 4-20mA position feedback</p> <p>POWER BRAKES For butterfly valve automation or modulating service applications requiring secure holding power</p> <p>SPEED CONTROLS AND TIMERS For applications requiring slower cycle times or to repeat cycle applications at specific times</p> <p>TORQUE SENSOR To shut the actuator off in stall conditions</p> <p>ENCLOSURES NEMA 4X and NEMA 7 available</p>

AC MOTOR CONTROLLERS FOR MODULATING SERVICE



BI-TORQ® offers the high quality Peaktronics on-board controller used for proportional positioning of split phase AC motors. An external command signal of 0-10VDC, 1-5VDC or 4-20mA can be used to compare a feedback signal from a potentiometer. This can make any of BI-TORQ®'s electric actuators into the ideal unit for applications requiring precise control, including:

- *filling applications*
- *mixing operations*
- *HVAC control*
- *batch processing*
- *cooling towers*
- *and much more*

FEATURES

- on-board red and green LED indicators for on-off signals
- easy wiring to removable terminal strips
- deadband and non-interactive zero and span for easy field calibration
- multiple units can be easily connected in parallel to a common command signal
- built-in 24VDC utility power supply for 4-20mA input or output signal, or feedback potentiometer
- no external motor resistors are required

SPECIFICATIONS

POWER REQUIREMENTS

- 117VAC +/-10%, 50/60Hz

COMMAND SIGNAL INPUT

- 0-10VDC, 1-5VDC or 4-20mA

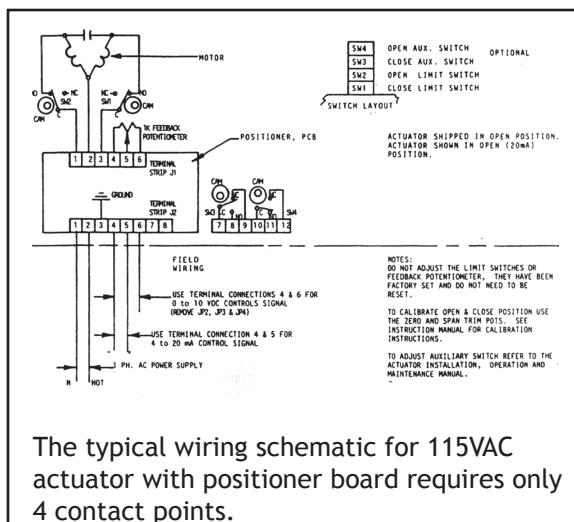
ENVIRONMENTAL CONDITIONS

- Operating temperature range: 0° to 60° C
- Storage temperature range: -40° to 85° C
- Relative humidity range: 0-90% (non-condensing)

CONTROL ADJUSTMENTS

- Zero Adjustment: adjustable throughout feedback signal range
- Span Adjustment: adjustable throughout command signal range
- Deadband: adjustable from 0.12% to 2.4% of span

The modulating service option includes an upgrade to 75% duty cycle motor. Power brakes are available for modulating service with butterfly valves.



Positioner boards also available for DC motors on all BI-TORQ® electric actuators.

PERFORMANCE RATINGS FOR BI-TORQ® ELECTRIC ACTUATORS

BI-100 SERIES

VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-100-A-4	BI-100-B-4	BI-100-C-4	BI-100-F-4	BI-100-H-4
CYCLE TIME	2.5 SECONDS	3 SECONDS	3 SECONDS	3 SECONDS	2.5 SECONDS
DUTY CYCLE	75%	75%	75%	75%	75%
AMP DRAW	0.55	2.44/0.4	2.44/0.4	2.89/0.6	0.38

BI-200 AND 300 SERIES

VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-***-A-4	BI-***-B-4	BI-***-C-4	BI-***-F-4	BI-***-H-4
CYCLE TIME	5 SECONDS	9 SECONDS	9 SECONDS	9 SECONDS	5 SECONDS
DUTY CYCLE	25%	75%	75%	75%	25%
AMP DRAW	0.75	3.2/0.8	3.2/0.8	4.0/1.4	0.38

BI-400 SERIES

VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-400-A-4	BI-400-B-4	BI-400-C-4	BI-400-F-4	BI-400-H-4
CYCLE TIME	10 SECONDS	20 SECONDS	20 SECONDS	20 SECONDS	10 SECONDS
DUTY CYCLE	25%	75%	75%	75%	25%
AMP DRAW	0.75	3.2/0.8	3.2/0.8	4.0/1.4	0.38

BI-675 AND 1000 SERIES

VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-***-A-4	BI-***-B-4	BI-***-C-4	BI-***-F-4	BI-***-H-4
CYCLE TIME	15 SECONDS	30 SECONDS	30 SECONDS	30 SECONDS	15 SECONDS
DUTY CYCLE	25%	75%	75%	75%	25%
AMP DRAW	1.10	3.2/0.8	3.2/0.8	4.0/1.4	0.38

BI-1500 SERIES

VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-1500-A-4	BI-1500-B-4	BI-1500-C-4	BI-1500-F-4	BI-1500-H-4
CYCLE TIME	30 SECONDS	60 SECONDS	60 SECONDS	60 SECONDS	30 SECONDS
DUTY CYCLE	25%	75%	75%	75%	25%
AMP DRAW	1.10	3.2/0.8	3.2/0.8	4.0/1.4	0.38

BI-2000 SERIES

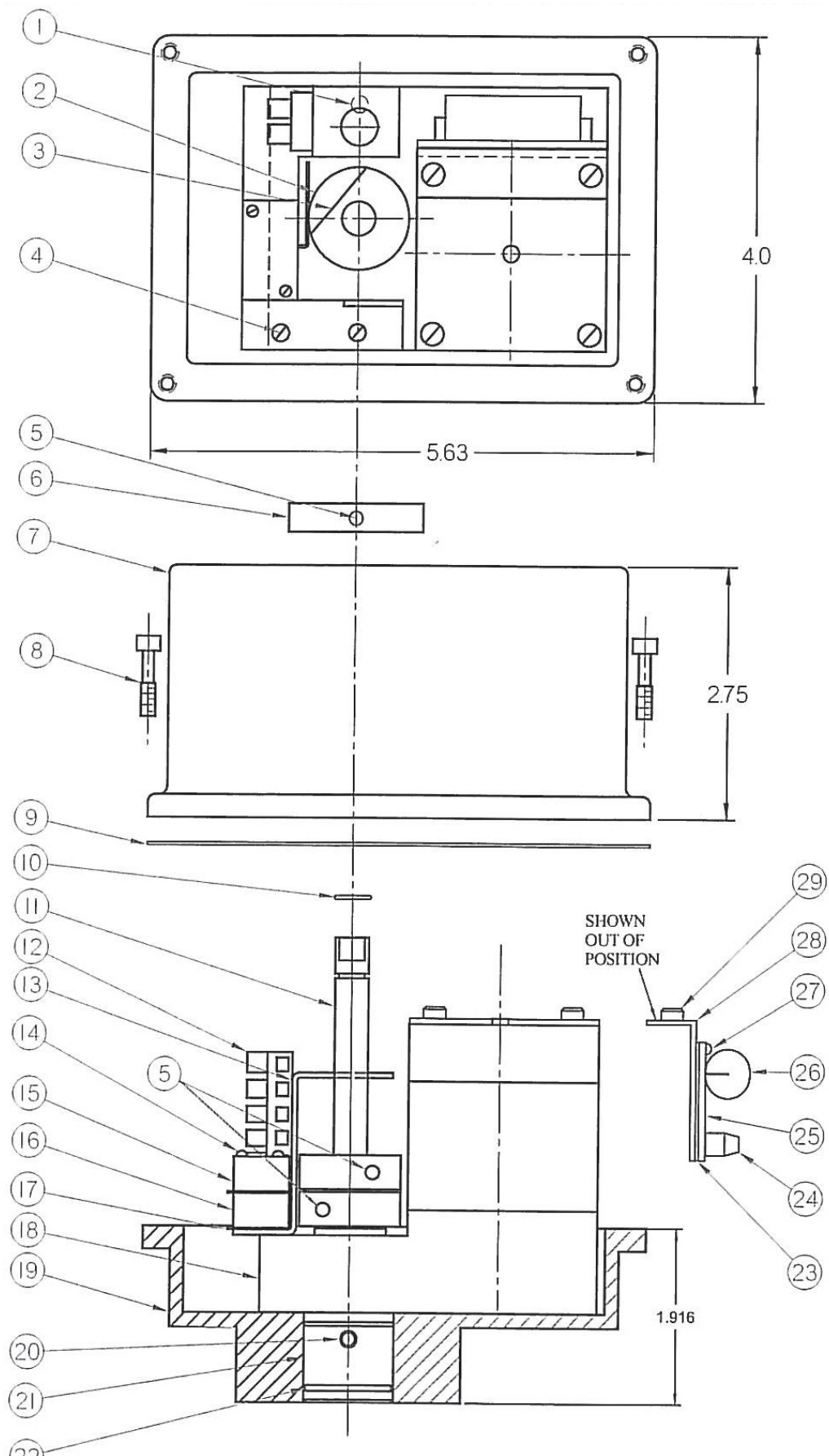
VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-2000-A-4	BI-2000-B-4	BI-2000-C-4	BI-2000-F-4	BI-2000-H-4
CYCLE TIME	12 SECONDS	12 SECONDS	12 SECONDS	12 SECONDS	12 SECONDS
DUTY CYCLE	100%	100%	100%	100%	100%
AMP DRAW	2.60/0.98	14/20	14/20	14	2.80/1.30

BI-3800 SERIES

VOLTAGE	115VAC	24VDC	24VAC	12VDC	220VAC
PART NUMBER	BI-3800-A-4	BI-3800-B-4	BI-3800-C-4	BI-3800-F-4	BI-2000-H-4
CYCLE TIME	14 SECONDS	14 SECONDS	14 SECONDS	14 SECONDS	14 SECONDS
DUTY CYCLE	100%	100%	100%	100%	100%
AMP DRAW	2.90/1.12	14/20	14/20	14	2.80/1.30

EXTENDED DUTY CYCLE MOTORS AVAILABLE ON MOST MODELS WITH AC MOTORS (DOUBLES CYCLE TIME)

BI-100-Exploded View



BI-100-Exploded View

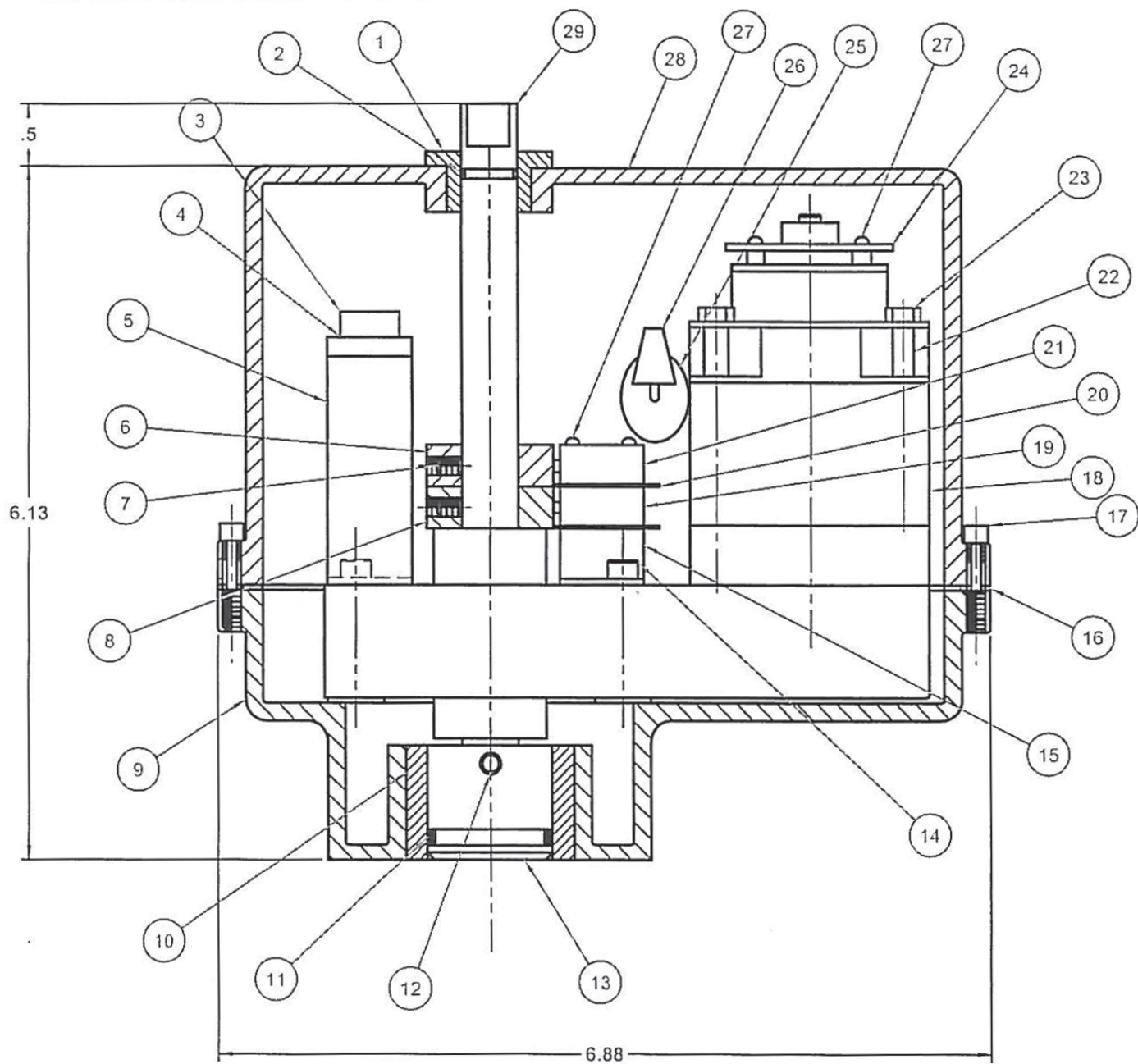
NO.	DESCRIPTION	MATERIAL	QUANTITY	PART NO.
1	SOCKET HD. SCREW	SS	1	47006
2	CAM, CLOSE	PLASTIC	1	38005ZB
3	CAM, OPEN	PLASTIC	1	38005ZY
4	FLAT HD. SCREW	SS	3	47005D
5	SET SCREW	SS	3	47015
6	INDICATOR	PLASTIC	1	NA
7	COVER	AL.	1	2001N7
8	CAPTIVE SCREWS	SS	4	47021
9	GASKET	BUNA-N	1	NA
10	O-RING	BUNA-N	1	NA
11	SHAFT (COMES WITH GEARMOTOR)	STL.	1	Does not ext thru cover
12	TERMINAL STRIP	PLASTIC	1	29010N
13	BRACKET	SS	1	39030
14	SCREWS	SS	2	47000
15	SWITCH, OPEN	---	1	24000-O
16	SWITCH, CLOSE	---	1	24000-C
17	INSULATOR	FP	2	24000FP
18	GEARMOTOR, 115V-50/60HZ-1 PH	---	1	21010
19	BASE, ISO F03	AL.	1	7001F03N7
20	DRIVE PIN	STL.	1	43009
21	OUTPUT DRIVE (ISO 5211 F03)	SS	1	4019F03
22	O-RING	BUNA-N	1	10015
23	INSULATOR	FP	1	22037FP
24	TERMINAL STRIP	PLASTIC	2	29006
25	PRINTED CIRCUIT BOARD	FR4	1	22037
26	CAPACITOR	---	1	30003
27	RIVIT	STL.	3	47500
28	BRACKET	STL.	1	39033
29	SCREWS	SS	2	47012A

MODEL R4BF04-2

19	BASE, ISO F04	AL.	1	7001F04N7
21	OUTPUT DRIVE (ISO 5211 F04)	SS	1	4065F04

FP = FISH PAPER

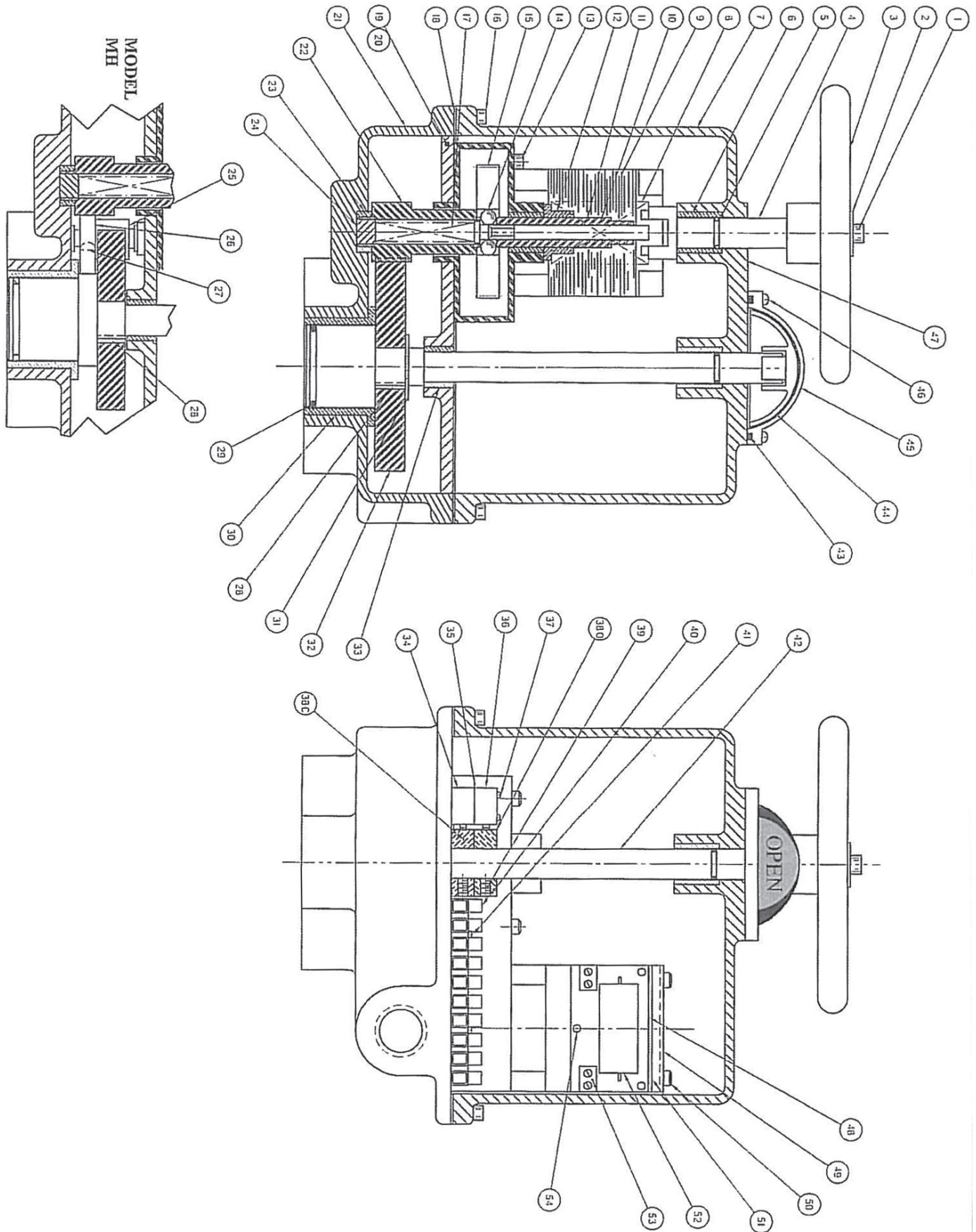
BI-200 & BI-300 - Exploded View



BI-200 & BI-300 Exploded View

NO.	DESCRIPTION	MTL.	QUANT.	PART NO.
1	BEARING	BRZ.	1	35012
2	O-RING	BUNA-N	1	10000
3	TERMINAL BLOCK		1	29010
4	SCREWS	S.S.	2	47001A
5	BRACKET	STL.	1	39000
6	CAM, OPEN LIMIT	ZYTEL	1	38004ZY
7	SET SCREW	S.S.	2	47015
8	CAM, CLOSE LIMIT	ZYTEL	1	38004ZB
9	BASE	AL.	1	7009
10	BEARING	BRZ.	1	35009
11	O-RING	BUNA-N	1	10004
12	ROLL PIN	STL.	1	43000
13	STAR DRIVE	S.S.	1	4044PM
14	SCREW	S.S.	4	47024
15	BRACKET	STL.	1	39001
16	GASKET	BUNA-N	1	3009
17	COVER SCREW	S.S.	4	47021
18	GEARMOTOR		1	21019
19	SWITCH, CLOSE LIMIT		1	24000-C
20	INSULATOR	F.P.	2	24000FP
21	SWITCH, OPEN LIMIT		1	24000-O
22	SPACER	AL.	4	18010
23	SCREW	S.S.	4	47012A
24	BRAKE		1	45000
25	CAPACITOR		1	30003
26	WIRE NUT		2	46000
27	SCREW	S.S.	5	47000
28	COVER	AL.	1	2000SD
29	SHAFT	416SS	1	4082

BI-400, 675, 1000, & 1500 - Exploded View



BI-400, 675, 1000, & 1500 - Exploded View

ITEM NO.	DESCRIPTION	MODEL>>>	PART NUMBERS			
		MAT./QTY.	BI-1500	BI-1000	BI-675	BI-400
1	CAP SCREW	SS/1	47022	47022	47022	47022
2	WASHER	STL/1	52000	52000	52000	52000
3	HAND WHEEL	AL./1	41002	41002	41002	41002
4	SHAFT	SS/1	5009N4/7	5009N4/7	5009N4/7	5009N4/7
5	O-RING	BUNA-N/1	10000	10000	10000	10000
6	BEARING	BRZ./2	35002	35002	35002	35002
7	COVER	AL./1	2002	2002	2002	2002
8	SPRING	SS/1	19002	19002	19002	19002
9	GEAR MOTOR, 115Vac	1	21019	21019	21019	21019
	GEAR MOTOR, 12Vdc	1	21005	21005	21005	21005
	GEAR MOTOR, 24Vdc	1	21009	21009	21009	21009
10	STEM	SS/1	5069	5069	5069	5069
11	SHAFT	STL/1	4069	4069	4069	4069
12	BEARING	BRZ./1	35026	35026	35026	35026
13	CAP SCREW	SS/4	47024	47024	47024	47024
14	BALL	STL./2	5000.25	5000.25	5000.25	5000.25
15	GEAR	STL/1	GS5424-0804	GS5424-0804	GS5424-0804	GS5424-0804
16	CAP SCREW	SS/4	47036	47036	47036	47036
17	SPRING	SS/1	19013	19013	19013	19013
18	GASKET	BUNA-N/1	3002	3002	3002	3002
19	BASE	AL./1	7008	7002	7002	7002MS
20	CAP SCREW	SS/4, MH 5	47022	47004	47004	47004
21	GEARBOX	AL./1	6008	6002	6002	6002
22	PINION	STL/1	PS161648A	PS161648A	PS161648A	PS241648A
23	BEARING	BRZ./2, MH 3	35000	35000	35000	35000
24	INSERT	AL./1	70000	70000	70000	70000
25	PINION	STL/1	MHPS121265	-	-	-
26	GEAR	STL/1	GS321665	-	-	-
27	WOODRUFF KEY	STL/1	44006	-	-	-
28	KEY	STL/1	12017	44000	44000	44000
29	O-RING	BUNA-N/1	10006	10006	10006	10006
30	BEARING	BRZ./1	35010	35010	35010	35010
31	SNAP RING	STL/1	-	11002	11002	11002
32	GEAR	STL/1	GS381297	GS561666	GS561666	GS481666
33	BEARING	BRZ./1	35026	35000	35000	35000
34	CLOSE LIMIT SWITCH	1	24000-C	24000-C	24000-C	24000-C
35	INSULATOR	FISH PAPER/2	24000FP	24000FP	24000FP	24000FP
36	OPEN LIMIT SWITCH	1	24000-O	24000-O	24000-O	24000-O
37	ROUND HD. SCREW	SS/2	47000	47000	47000	47000
38.O	CAM, OPEN; TOP	ZYTLE/1	38004ZG	38004ZG	38004ZG	38004ZG
38.C	CAM, CLOSE; BOTTOM	ZYTLE/1	38004ZY	38004ZY	38004ZY	38004ZY
39	SET SCREW	SS/3	47015	47015	47015	47015
40	TERMINAL STRIP	PHONLIC/1	29010N	29010N	29010N	29010N
41	ROUND HD. SCREW	SS/2	47001B	47001B	47001B	47001B
42	SHAFT	SS/1	4002MH7	4008B	4008B	4008B
43	O-RING	BUNA-N/1	10020	10020	10020	10020
44	POSITION INDICATOR	PLASTIC	90401	90401	90401	90401
45	INDICATOR COVER	PLASTIC	9040C	9040C	9040C	9040C
46	INDICATOR SCREWS	SS/4	47032	47032	47032	47032
47	LABEL	1	80045	80045	80045	80045
48	PRINTED CIRCUIT BOARD	FR4/1	22037	22037	22037	22037
49	BRACKET	STL/1	39033	39033	39033	39033
50	CAP SCREW	SS/2	47012A	47012A	47012A	47012A
51	INSULATOR	FISH PAPER/1	22037FP	22037FP	22037FP	22037FP
52	CAPACITOR	1	30003	30010	30003	30003
53	TERMINAL STRIP	2	29006	29006	29006	29006
54	RIVET	STL/3	47500	47500	47500	47500

PL080710, SHIT. 2 OF 2

THE STRAHMAN FAMILY OF PRODUCTS INCLUDE:



WASH DOWN EQUIPMENT

Cleaning and sanitizing equipment for applications where safety is the number one concern — built to outlast and outperform all others.

AUTOMATED VALVES & THERMAL SHUT-OFF VALVES

Completely assembled automated valves and fire-safe thermal shut-off valves fabricated for quick and reliable problem-solving solutions for industrial applications.

PROCESS VALVES


Engineered solutions for the transfer of fluid and flow control for highly critical applications from sampling to inline process to permanent isolation.





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