



Deltrol Controls Solenoid Data Sheets

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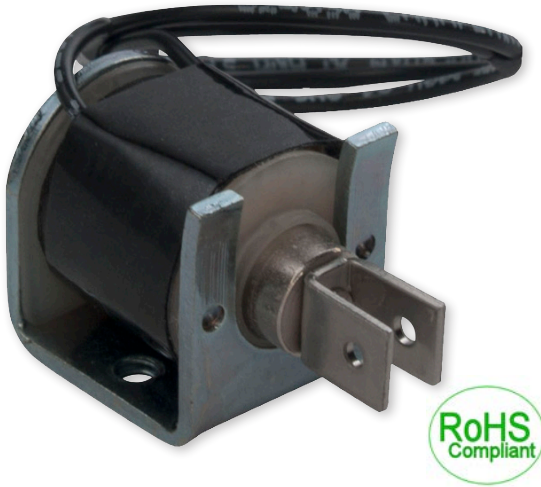
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C-FRAME SOLENOID

Two position linear solenoid with C-frame construction.



Features

- Economical construction
- AC solenoids and DC solenoids available
- Tape Wrapped coils on most models
- UL approval on many models

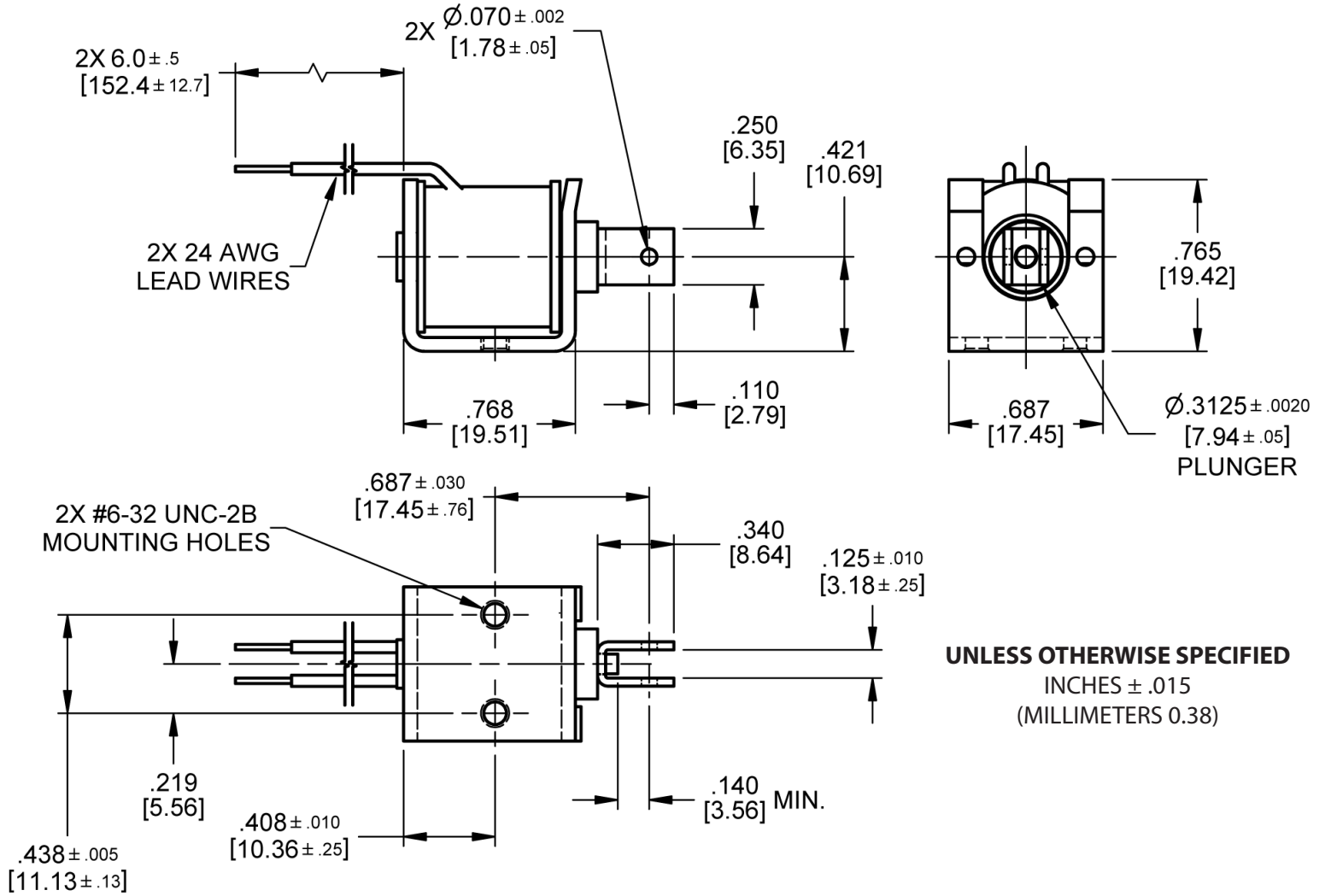


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	4.5 VA Continuous, 12 VA Intermittent, 45 VA Pulse 3.5 Watts Continuous, 8 Watts Intermittent, 35 Watts Pulse
Coil Termination	Wire leads 24 AWG
Duty Cycle	Continuous, Intermittent, Pulse (see standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	0.768" (L) x 0.687" (W) x 0.765" (H) (See dimensional drawing on page 2)
Forces	See force curves on page 3
Plunger Diameter	0.3125"
Plunger Guide Material	Plastic
Mounting	2X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.25 oz., Total - 1 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105

All dimensions in Inches

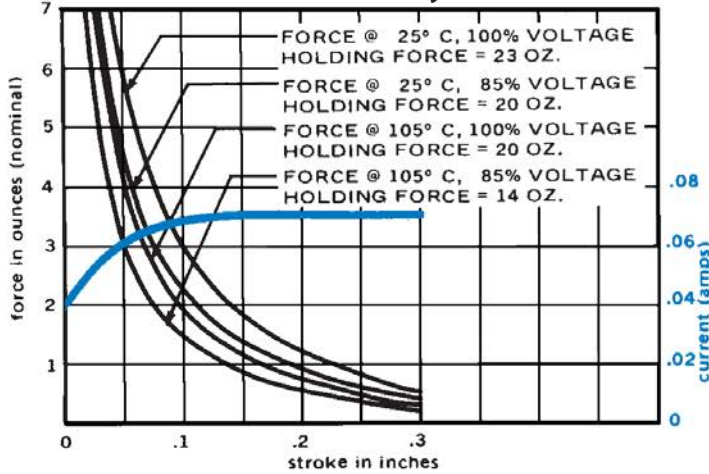
Dimensional View

Units: Inches [mm]

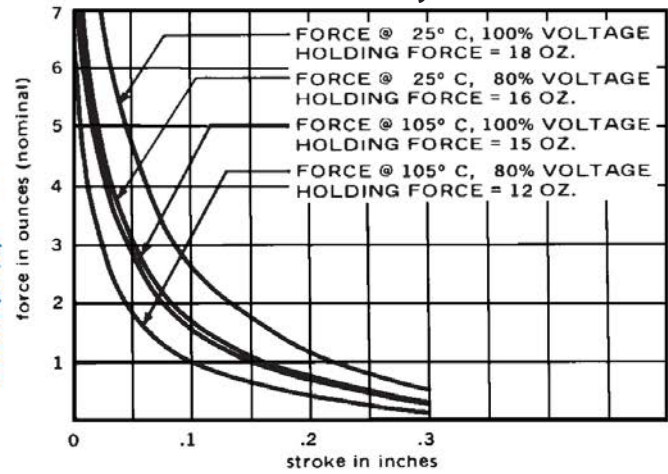


Force Curves

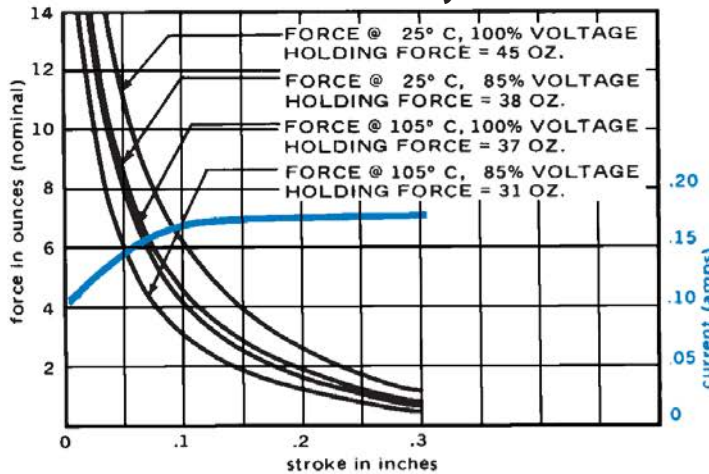
AC Continuous Duty - 4.5 VA



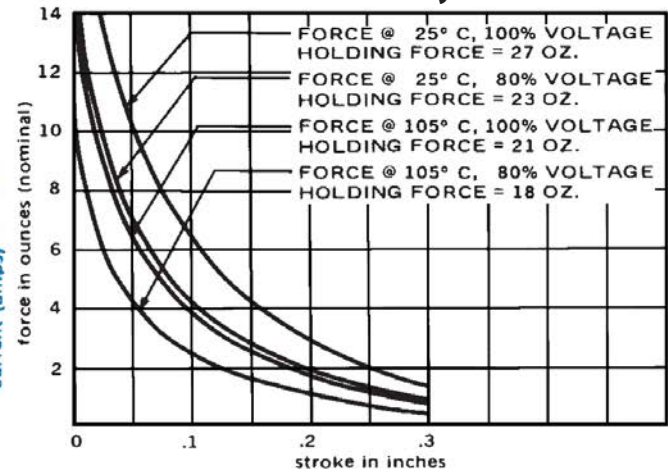
DC Continuous Duty - 3.5 Watts



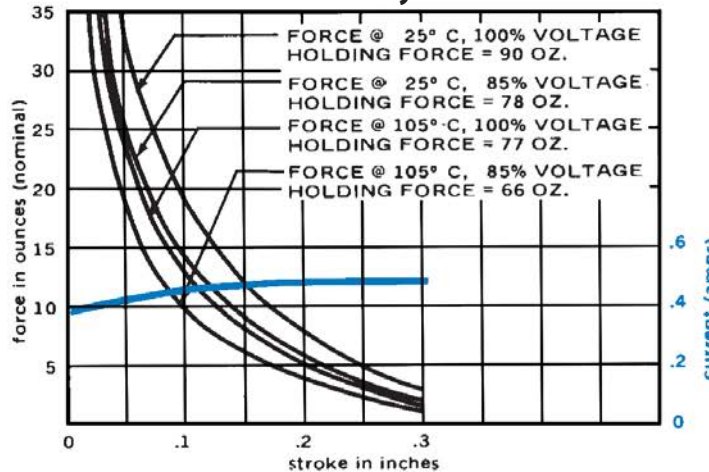
AC Intermittent Duty - 12 VA



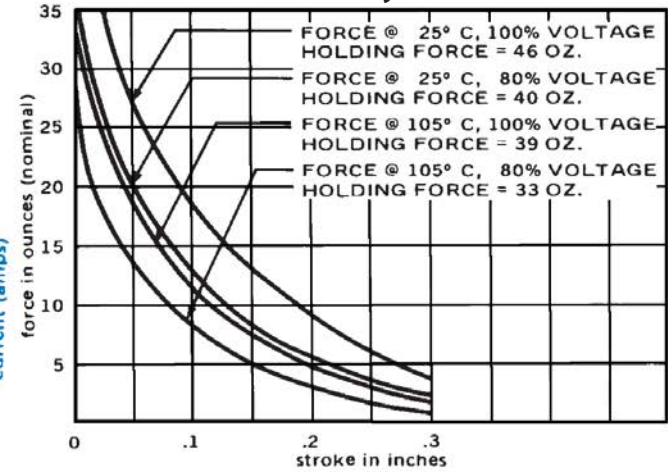
DC Intermittent Duty - 8 Watts



AC Pulse Duty - 45 VA



DC Pulse Duty - 35 Watts

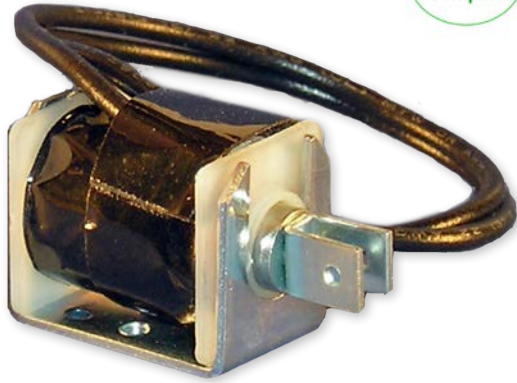


Standard intermittent duty cycle at nominal voltage is 25%, with one (1) minute maximum "ON" and three (3) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53645-80	6 VAC	Continuous	4.5 VA	3.7	Pull	23	2.4	0.8	0	0
53645-81	12 VAC			14.9						
53645-83	24 VAC			60.5						
53645-94	120 VAC			1530						
53645-97	240 VAC			6120						
53646-80	6 VAC	Intermittent	12 VA	1.55	Pull	45	5	1.7	0	0
53646-81	12 VAC			6.3						
53646-83	24 VAC			25.4						
53646-94	120 VAC			664						
53646-97	240 VAC			2660						
53787-80	6 VAC	Pulse	45 VA	0.58	Pull	90	15	5	0	0
53787-81	12 VAC			2.34						
53787-83	24 VAC			9.2						
53787-94	120 VAC			231						
53787-97	240 VAC			932						
53648-80	6 VDC	Continuous	3.5 Watts	10.5	Pull	18	2.2	0.8	0	0
53648-81	12 VDC			42						
53648-83	24 VDC			167						
53648-93	110 VDC			3400						
53649-80	6 VDC	Intermittent	8 Watts	4.34	Pull	27	5	2	0	0
53649-81	12 VDC			17.4						
53649-83	24 VDC			71.0						
53649-93	110 VDC			1460						
53752-80	6 VDC	Pulse	35 Watts	1.06	Pull	46	15	6	0	0
53752-81	12 VDC			4.3						
53752-82	24 VDC			17.4						
53752-84	110 VDC			363						

(*) Normally Stocked
 Non stocked items require a minimum order



C-FRAME SOLENOID

Two position linear solenoid with C-frame construction.

Features

- Economical construction
- AC solenoids and DC solenoids available
- Tape Wrapped coils on most models
- UL approval on many models

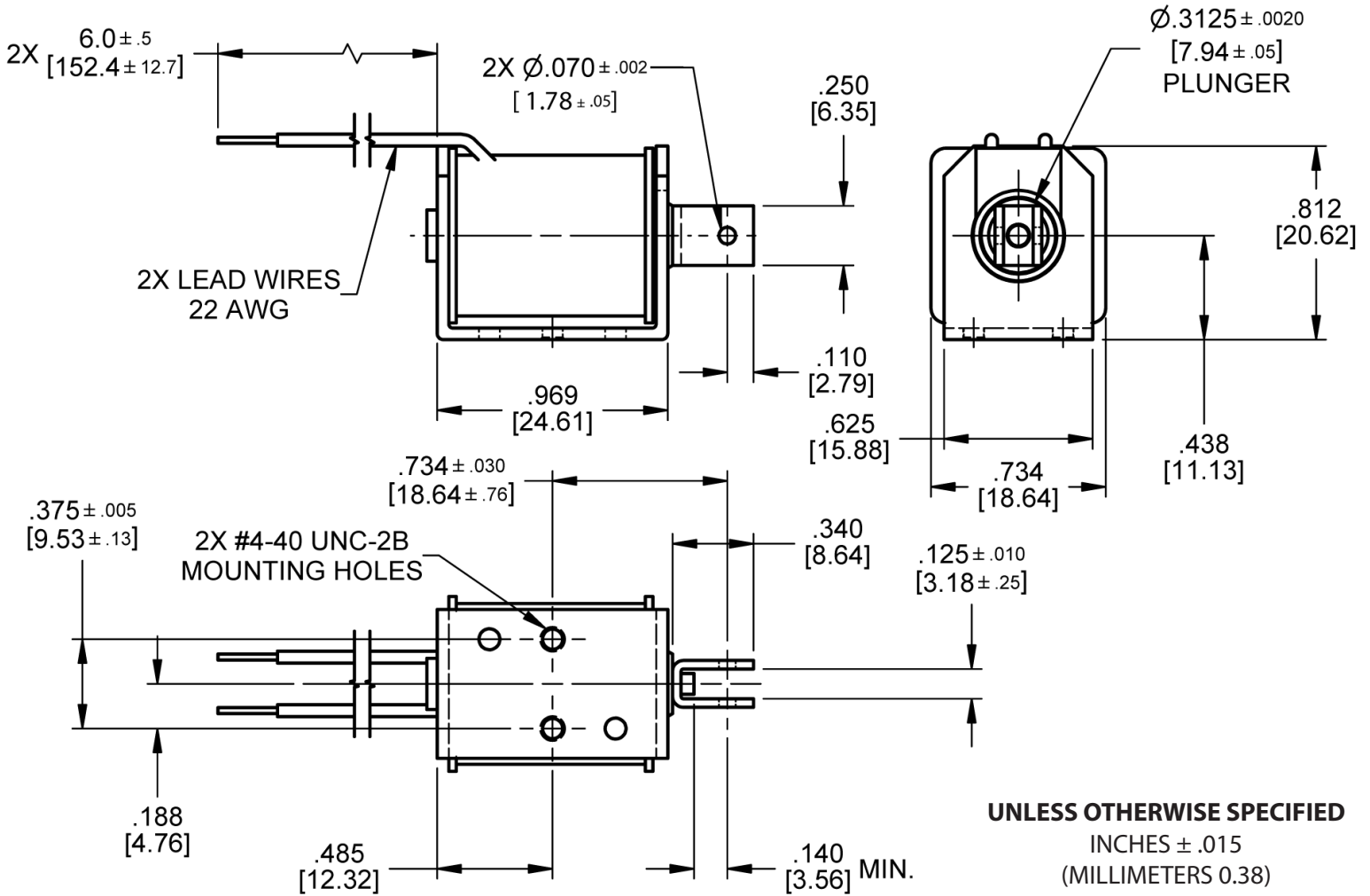


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	4.7 VA Continuous, 14 VA Intermittent, 47 VA Pulse, 3.7 Watts Continuous, 11 Watts Intermittent, 42 Watts Pulse
Coil Termination	Wire leads 22 AWG (standard)
Duty Cycle	Continuous, intermittent, pulse (see standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	0.969" (L) x 0.734" (W) x 0.812" (H) (See dimensional drawing on page 2)
Forces	See page 3 for force curves
Plunger Diameter	0.3125"
Plunger Guide Material	Plastic
Mounting	2X #4-40 UNC-2B Mounting Holes
Weight	Plunger - 0.317 oz., Total - 1.5 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105

All dimensions in Inches

Dimensional View

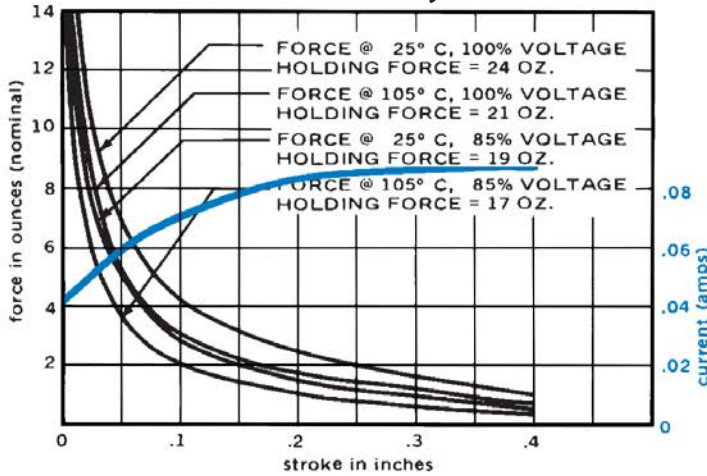
Units: Inches [mm]



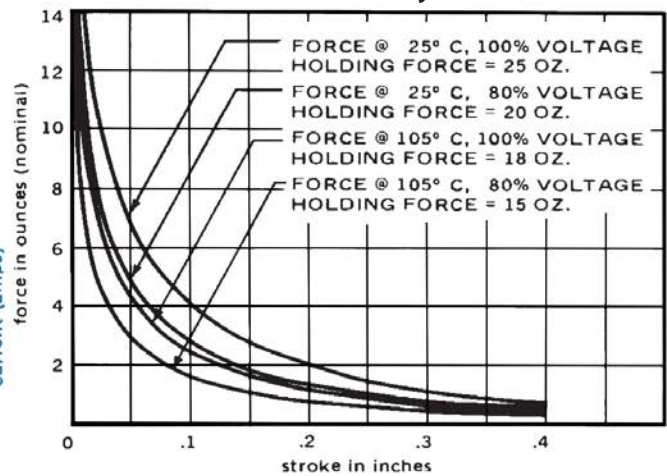
UNLESS OTHERWISE SPECIFIED
 INCHES ± .015
 (MILLIMETERS 0.38)

Force Curves

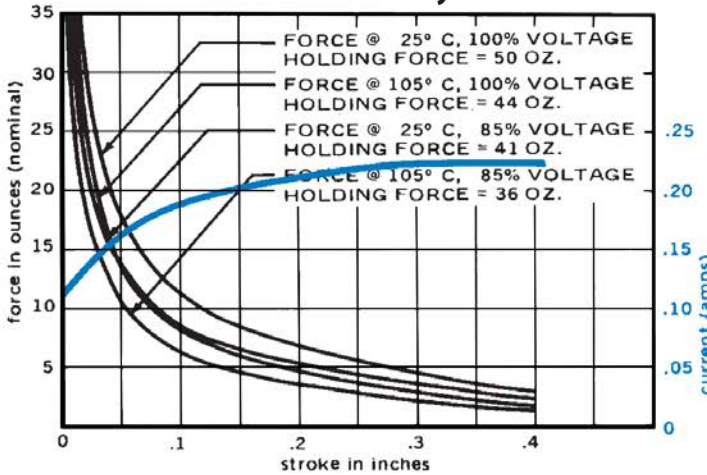
AC Continuous Duty - 4.7 VA



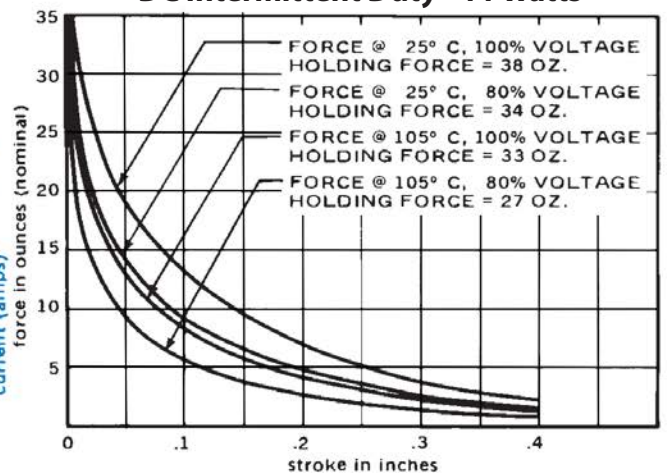
DC Continuous Duty - 3.7 Watts



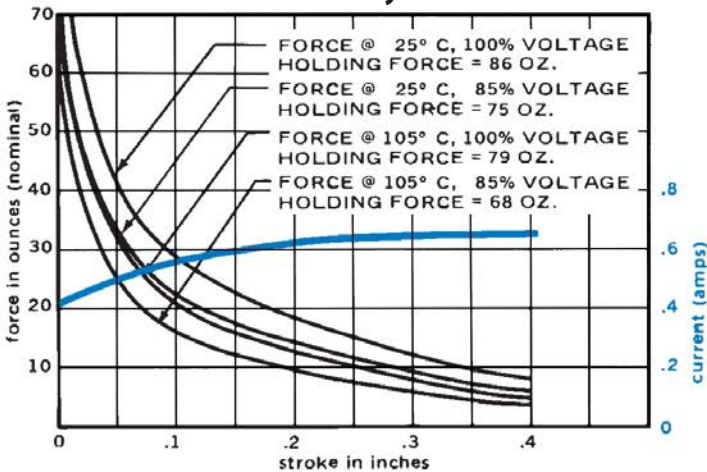
AC Intermittent Duty - 14 VA



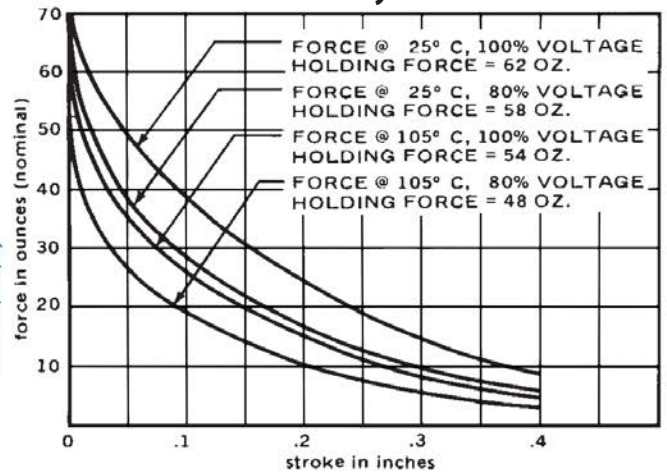
DC Intermittent Duty - 11 Watts



AC Pulse Duty - 47 VA



DC Pulse Duty - 42 Watts



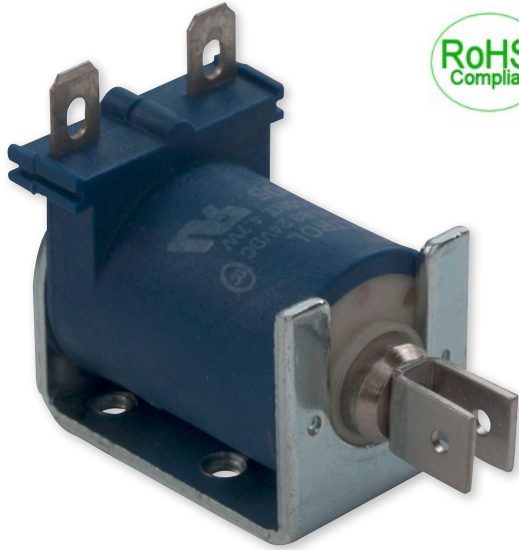
Standard intermittent duty cycle at nominal voltage is 25%, with one (1) minute maximum "ON" and three (3) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53747-80	6 VAC	Continuous	4.7 VA	3.23	Pull	24	3.5	2	0	0
53747-81	12 VAC			13.1						
53747-82	24 VAC			52.1						
53747-84	120 VAC			1273						
53747-85	240 VAC			5100						
53747-86	6 VAC	Intermittent	14 VA	1.15	Pull	50	9.5	5.5	0	0
53747-87	12 VAC			4.76						
53747-88	24 VAC			19.1						
53747-90	120 VAC			480						
53747-91	240 VAC			1940						
53747-92	6 VAC	Pulse	47 VA	0.445	Pull	86	25	15	0	0
53747-93	12 VAC			1.77						
53747-94	24 VAC			7						
53747-96	120 VAC			183						
53747-97	240 VAC			738						
53746-80	6 VDC	Continuous	3.7 Watts	10.4	Pull	25	3	1.5	0	0
53746-81	12 VDC			41.6						
53746-82	24 VDC			168						
53746-84	110 VDC			3265						
53746-86	6 VDC	Intermittent	11 Watts	3.23	Pull	38	12	5	0	0
53746-87	12 VDC			13.1						
53746-88	24 VDC			52.1						
53746-90	110 VDC			1125						
53746-92	6 VDC	Pulse	42 Watts	0.8	Pull	62	34	19	0	0
53746-93	12 VDC			3.23						
53746-94	24 VDC			13.1						
53746-96	110 VDC			282						

(*) Normally Stocked

Non stocked items require a minimum order



C-FRAME SOLENOID

Two position linear solenoid with C-frame construction.

Features

- Economical construction
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

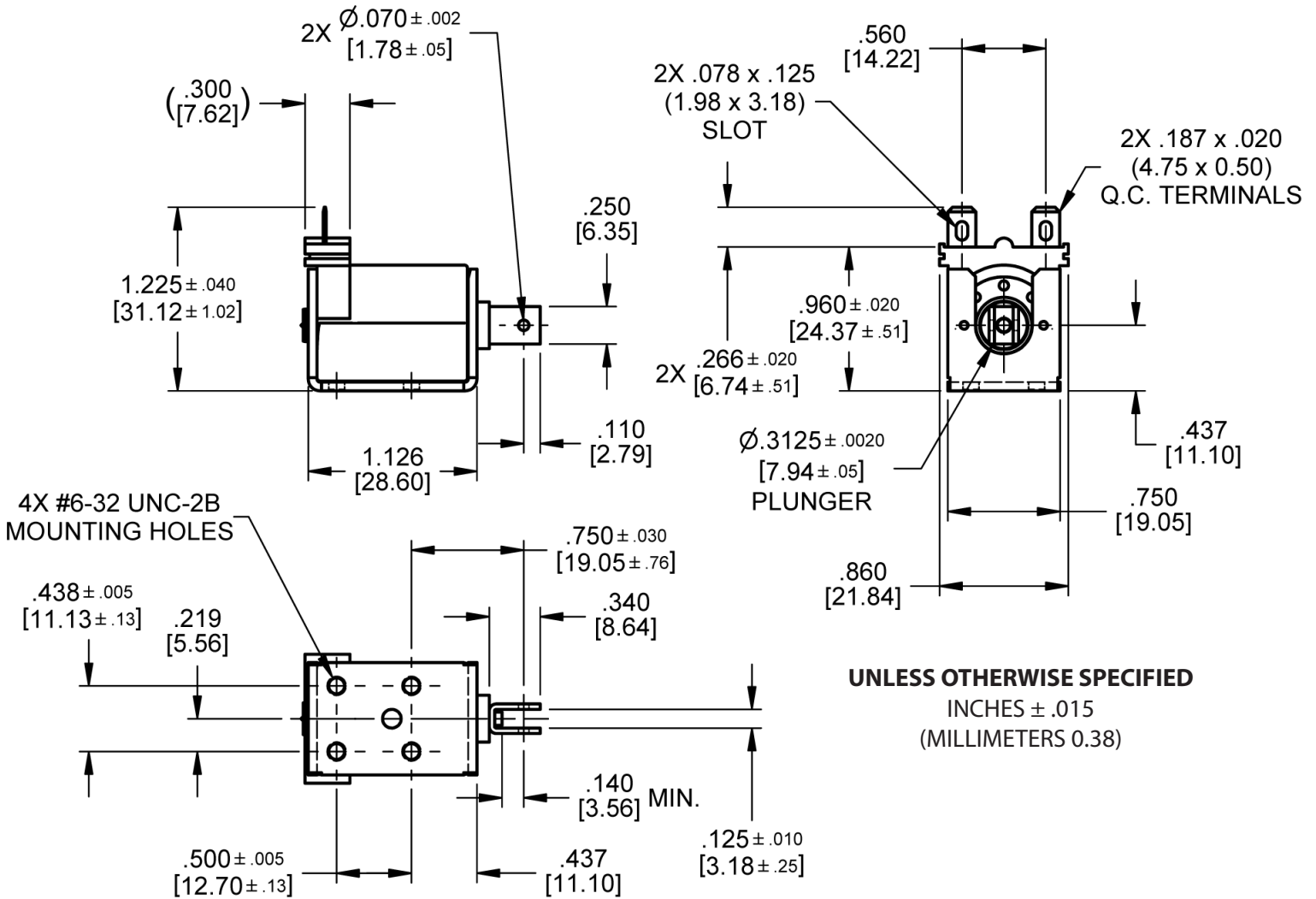


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110, 220 VDC
Coil Power	6.8 VA Continuous, 19.6 VA Intermittent, 68 VA Pulse 4.7 Watts Continuous, 12 Watts Intermittent, 45 Watts Pulse
Coil Termination	0.187" Quick Connect/Solder Lug (standard) 0.250" Quick Connect/Solder Lug (optional) Wire Leads (optional with tape wrapped coil)
Duty Cycle	Continuous, intermittent, pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (266°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.126" (L) 0.860" (W) 0.839" (H) (See dimensional drawing on page 2)
Forces	See force curves on page 3
Plunger Diameter	0.3125
Plunger Guide Material	Plastic
Mounting	4X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.317 oz., Total - 1.5 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D

All dimensions in Inches

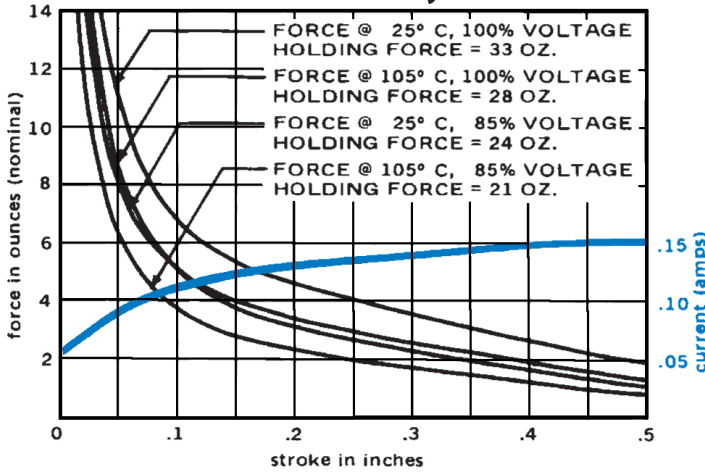
Dimensional View

Units: Inches [mm]

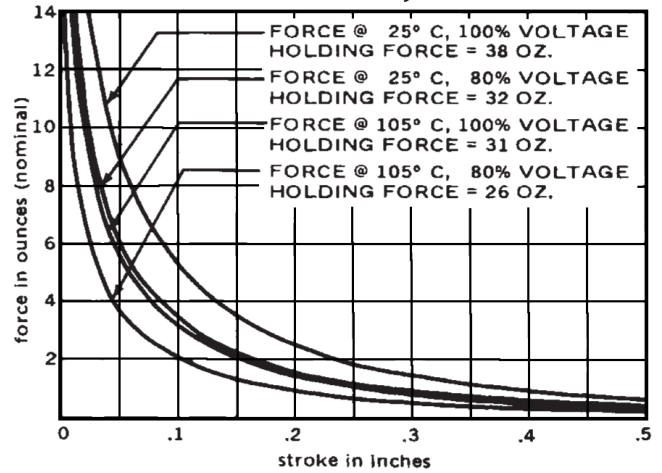


Force Curves

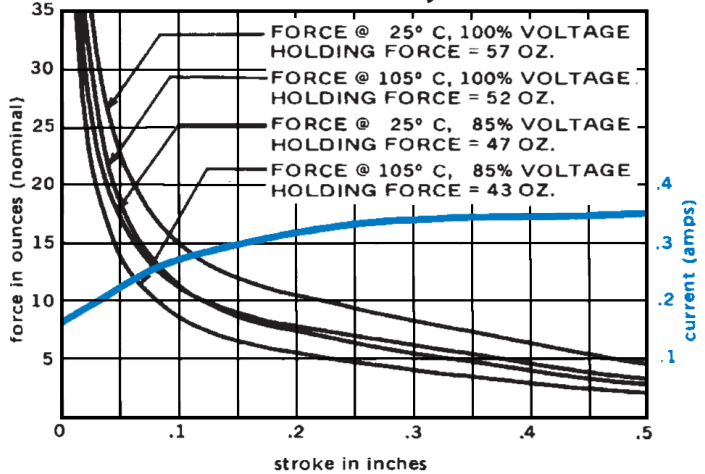
AC Continuous Duty - 6.8 VA



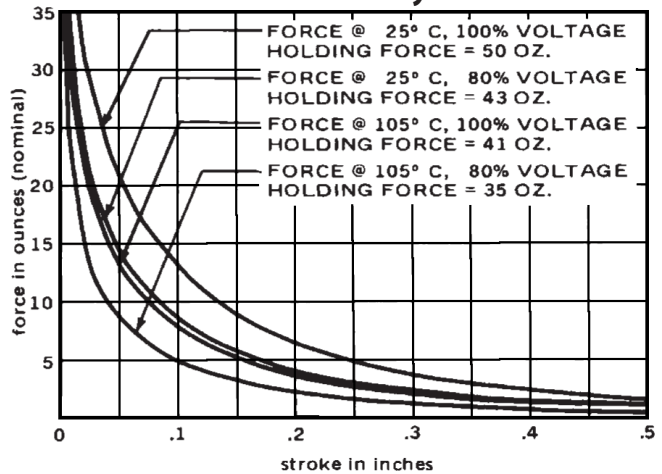
DC Continuous Duty - 4.7 Watts



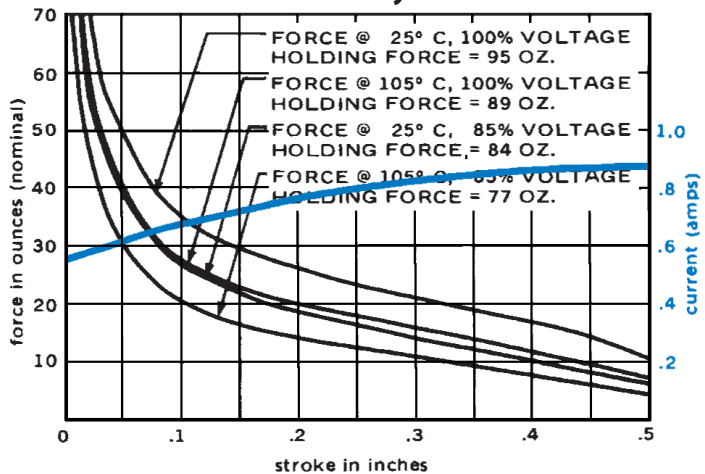
AC Intermittent Duty - 19.6 VA



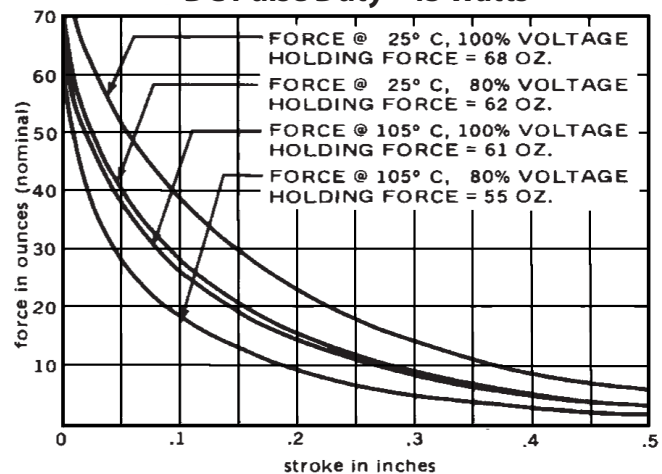
DC Intermittent Duty - 12 Watts



AC Pulse Duty - 68 VA



DC Pulse Duty - 45 Watts

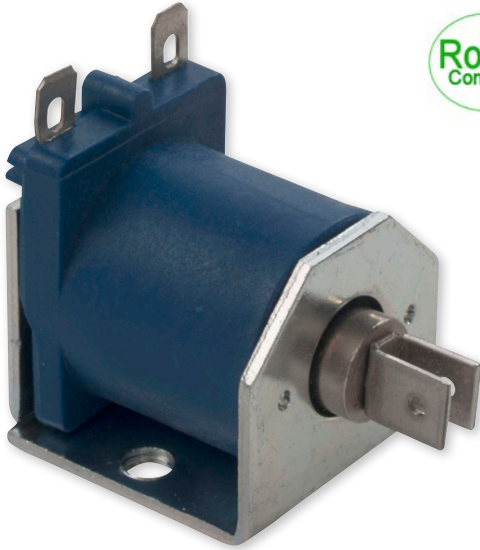


Standard intermittent duty cycle at nominal voltage is 25%, with one (1) minute maximum "ON" and three (3) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53687-80	6 VAC	Continuous	6.8 VA	1.92	Pull	33	5.9	4	2	0
53687-81	12 VAC			7.6						
53687-83	24 VAC			30.6						
53687-94*	120 VAC			776						
53687-97	240 VAC			3070						
53688-80	6 VAC	Intermittent	19.6 VA	0.78	Pull	57	13	9	4.5	0
53688-81	12 VAC			3.2						
53688-83	24 VAC			13						
53688-94*	120 VAC			327						
53688-97	240 VAC			1370						
53743-80	6 VAC	Pulse	68 VA	0.3	Pull	95	32	24	10	0
53743-81	12 VAC			1.18						
53743-82	24 VAC			5						
53743-83	120 VAC			124						
53743-84	240 VAC			493						
53685-80	6 VDC	Continuous	4.7 Watts	7.6	Pull	38	4	1.9	0.5	0
53685-81	12 VDC			30.6						
53685-83*	24 VDC			124						
53685-93	110 VDC			2670						
53685-97	220 VDC			11200						
53686-80	6 VDC	Intermittent	12 Watts	3.2	Pull	50	11	5	2	0
53586-81	12 VDC			13						
53686-83*	24 VDC			50.8						
53686-93	110 VDC			1011						
53686-97	220 VDC			4050						
53745-80	6 VDC	Pulse	45 Watts	0.78	Pull	68	34	17	6	0
53745-81	12 VDC			3.2						
53745-82	24 VDC			13						
53745-84	110 VDC			271						
53745-85	220 VDC			1140						

(*) Normally Stocked
 Non stocked items require a minimum order



C-FRAME SOLENOID

Two position linear solenoid with C-frame construction.

Features

- Economical construction
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

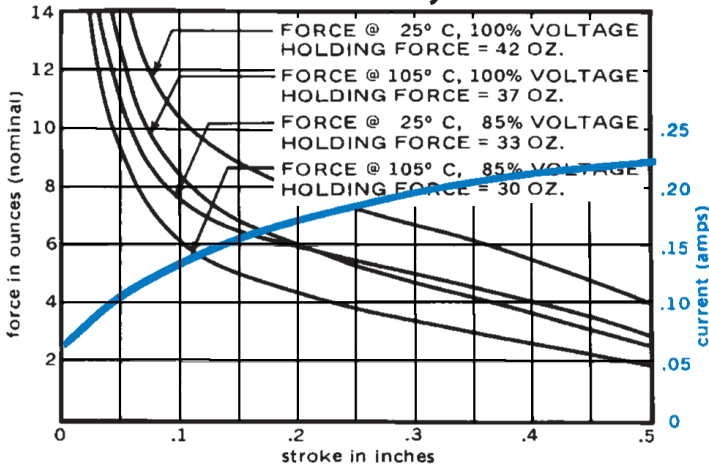


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6,12, 24, 110 VDC
Coil Power	7.8 VA Continuous, 21 VA Intermittent, 78 VA Pulse 5 Watts Continuous, 11.5 Watts Intermittent, 50 Watts Pulse
Coil Termination	.187 quick connect terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.140" (L) 1.062" (W) 1.025" (H)
Forces	See page 3 for force curves
Plunger Diameter	0.375"
Plunger Guide Material	Plastic
Mounting	2X #10-32 UNF-2B Mounting Holes
Weight	Plunger - 0.56 oz., Total - 2.5 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105	

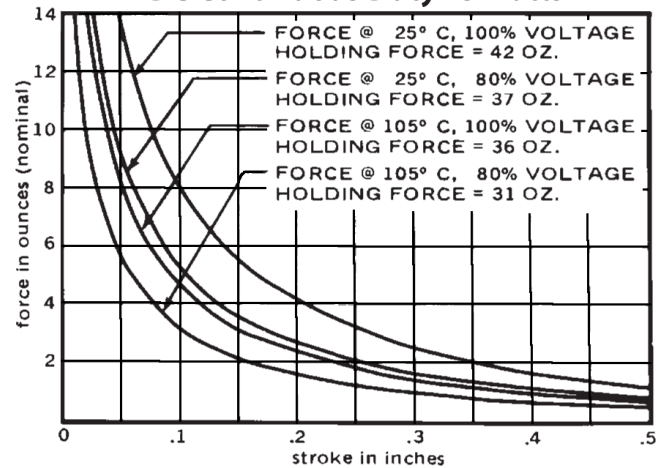
All dimensions in Inches

Force Curves

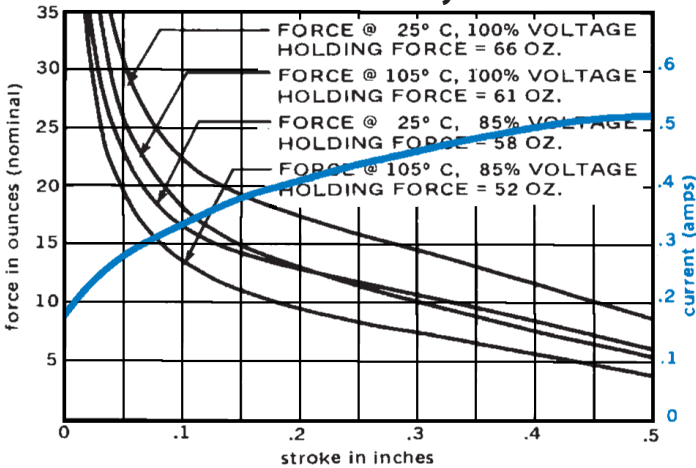
AC Continuous Duty - 7.8 VA



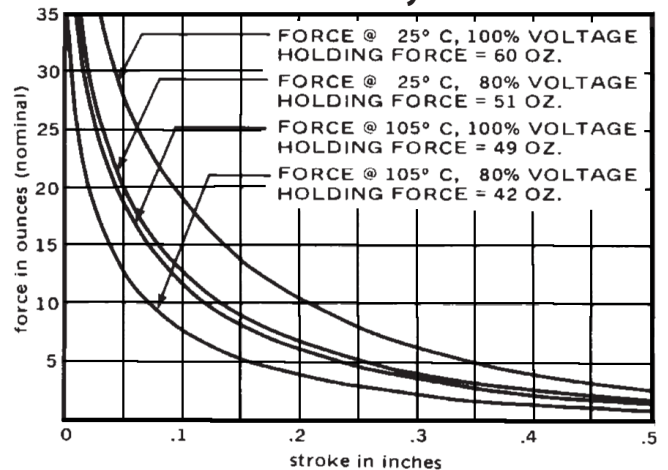
DC Continuous Duty - 5 Watts



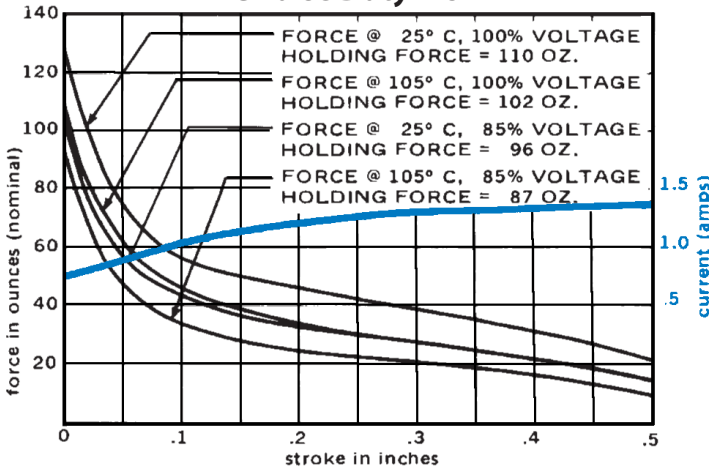
AC Intermittent Duty - 21 VA



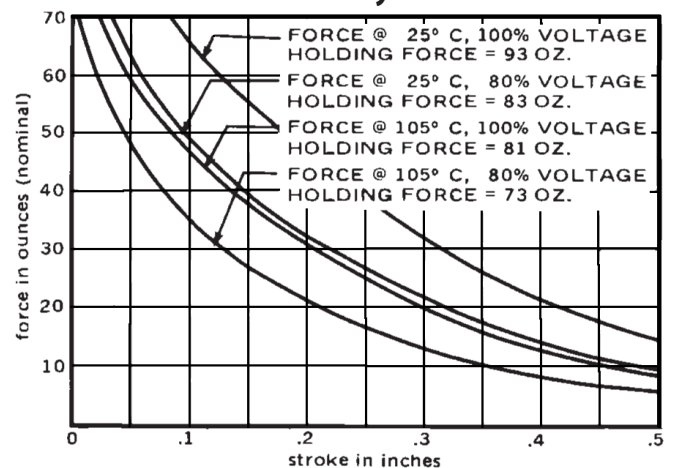
DC Intermittent Duty - 11.5 Watts



AC Pulse Duty - 78 VA



DC Pulse Duty - 50 Watts



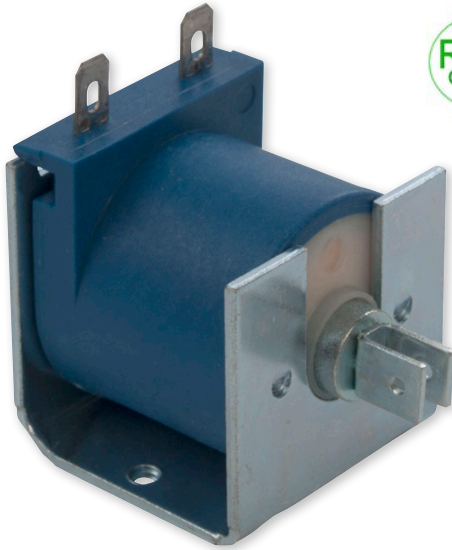
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53637-80	6 VAC	Continuous	7.8 VA	1.23	Pull	42	9	7	4	0
53637-81	12 VAC			4.92						
53637-83	24 VAC			20.1						
53637-94*	120 VAC			509						
53637-97	240 VAC			2140						
53638-80	6 VAC	Intermittent	21 VA	0.533	Pull	66	20	16	8	0
53638-81	12 VAC			2.14						
53638-83	24 VAC			8.81						
53638-94*	120 VAC			220						
53638-97	240 VAC			875						
53639-80	6 VAC	Pulse	78 VA	0.193	Pull	110	52	42	21	0
53639-81	12 VAC			0.766						
53639-83	24 VAC			3.12						
53639-94	120 VAC			81.6						
53639-97	240 VAC			330						
53634-80	6 VDC	Continuous	5 Watts	7.38	Pull	42	6.5	3	1	0
53634-81	12 VDC			29.1						
53634-83*	24 VDC			118						
53634-93	110 VDC			2300						
53635-80	6 VDC	Intermittent	11.5 Watts	3.12	Pull	60	16	8	2.5	0
53635-81	12 VDC			12.6						
53635-83*	24 VDC			50.5						
53635-93	110 VDC			1060						
53636-80	6 VDC	Pulse	50 Watts	0.728	Pull	93	60	40	15	0
53636-81	12 VDC			2.96						
53636-83	24 VDC			11.5						
53636-93	110 VDC			220						

(*) Normally Stocked

Non stocked items require a minimum order



C-FRAME SOLENOID

Two position linear solenoid with C-frame construction.

Features

- Economical construction
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

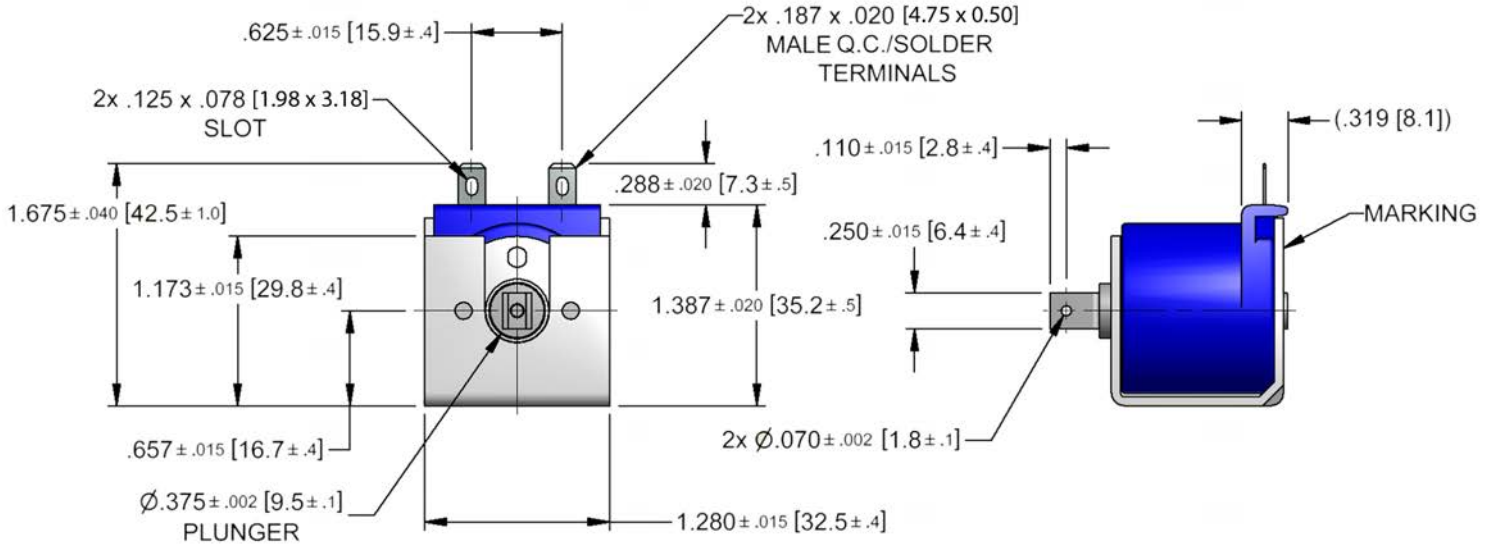


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	9.5 VA Continuous, 25 VA Intermittent, 95 VA Pulse 6.5 Watts Continuous, 16 Watts Intermittent, 65 Watts Pulse
Coil Termination	.187" quick connect terminals (standard) .250" quick connect terminals (optional) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.187" (L) x 1.280" (W) x 1.261" (H)
Forces	See page 3 for force curves
Plunger Diameter	0.375"
Plunger Guide Material	Plastic
Mounting	2X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.56 oz., Total - 3.5 oz.
Life Expectancy	250,000 Cycles (Dependant on load conditions)
Agency Approvals	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105	

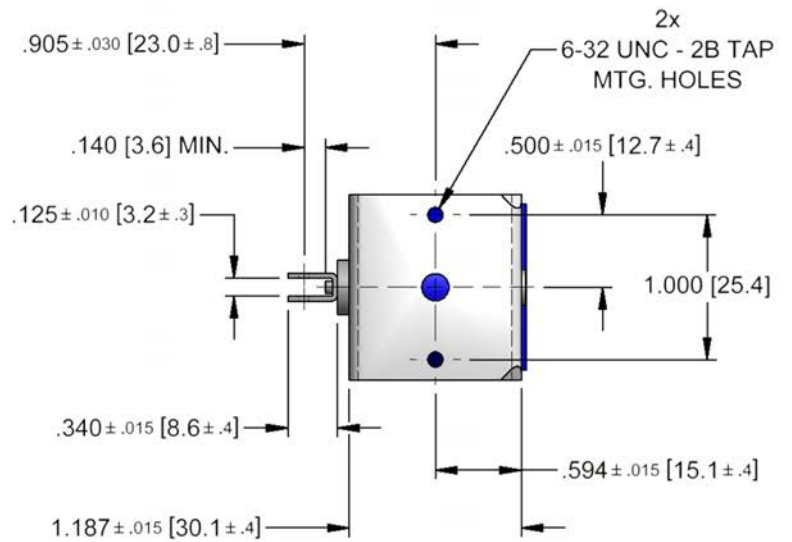
All dimensions in Inches

Dimensional View

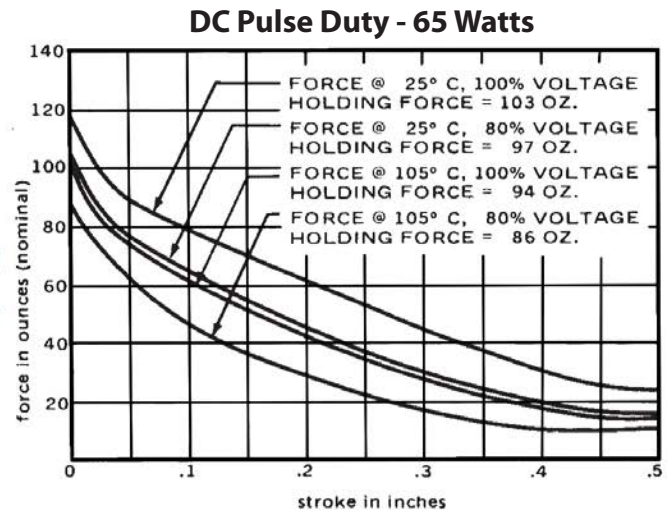
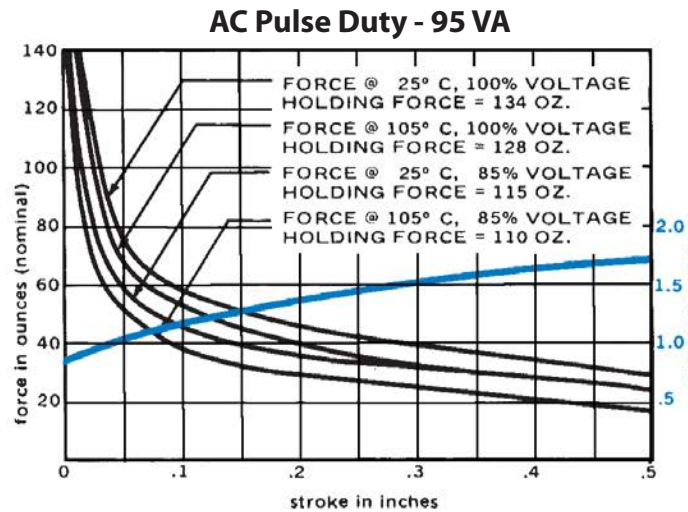
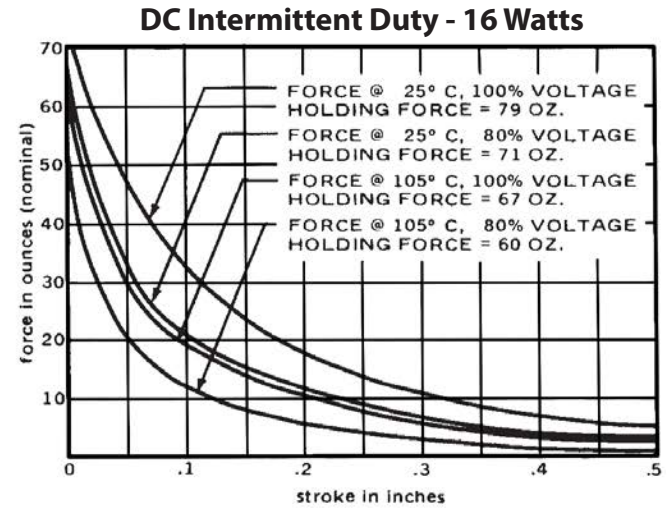
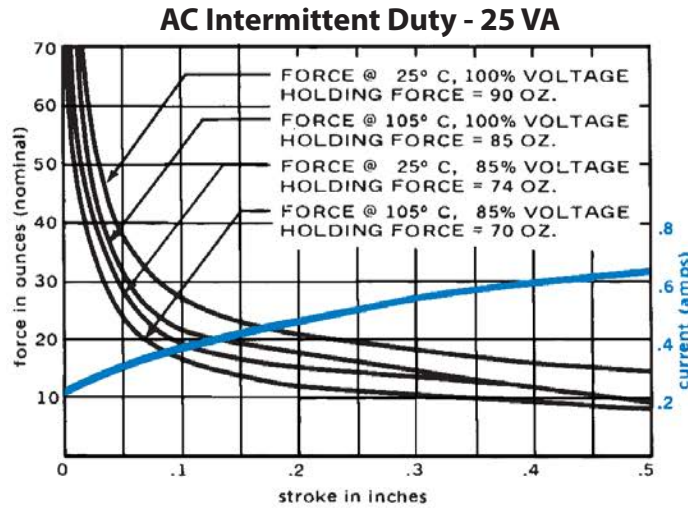
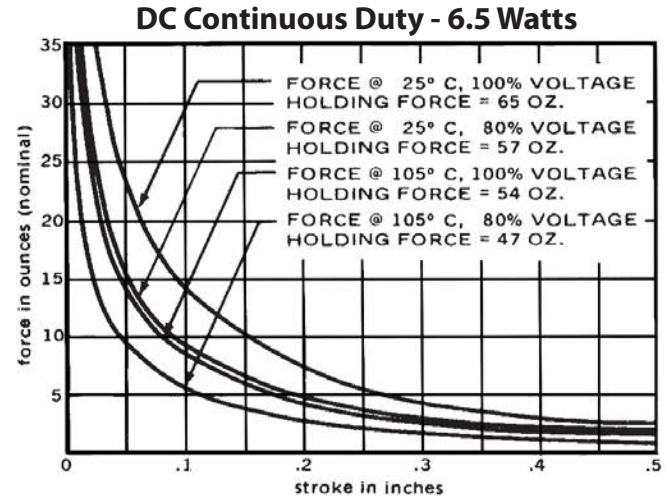
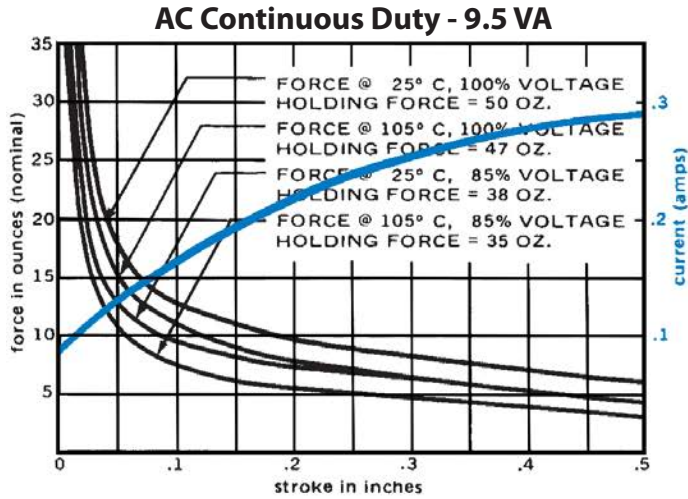
Units: Inches [mm]



UNLESS OTHERWISE SPECIFIED
 INCHES ± .015
 (MILLIMETERS 0.38)



Force Curves



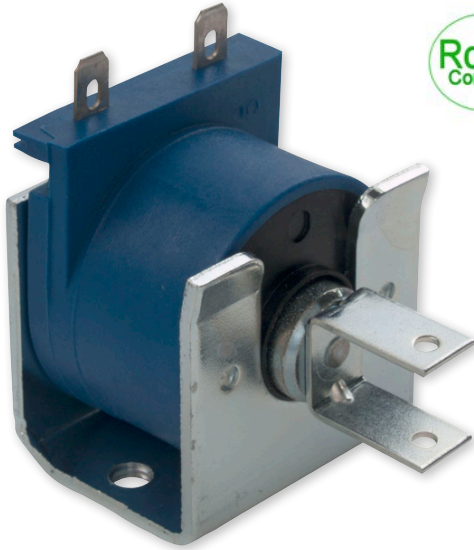
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53712-80	6 VAC	Continuous	9.5 VA	0.82	Pull	50	12	8	6	0
53712-81	12 VAC			3.3						
53712-82	24 VAC			13.8						
53712-84*	120 VAC			346						
53712-85	240 VAC			1400						
53712-86	6 VAC	Intermittent	25 VA	.36	Pull	90	25	20	15	0
53712-87	12 VAC			1.44						
53712-88	24 VAC			5.8						
53712-90*	120 VAC			151						
53712-91	240 VAC			614						
53712-92	6 VAC	Pulse	95 VA	0.14	Pull	134	53	42	30	0
53712-93	12 VAC			0.57						
53712-94	24 VAC			2.25						
53712-96	120 VAC			60.3						
53712-97	240 VAC			242						
53713-80	6 VDC	Continuous	6.5 Watts	5.8	Pull	65	12	5.5	2.5	0
53713-81	12 VDC			23						
53713-82*	24 VDC			93.3						
53713-84	110 VDC			2010						
53713-86	6 VDC	Intermittent	16 Watts	2.25	Pull	79	27	14	5	0
53713-87	12 VDC			9.3						
53713-88	24 VDC			37.5						
53713-90	110 VDC			782						
53713-92	6 VDC	Pulse	65 Watts	0.57	Pull	103	74	53	24	0
53713-93	12 VDC			2.25						
53713-94	24 VDC			9.3						
53713-96	110 VDC			196						

(*) Normally Stocked

Non stocked items require a minimum order



CFRAME SOLENOID

Two position linear solenoid with C-frame construction.

Features

- Economical construction
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

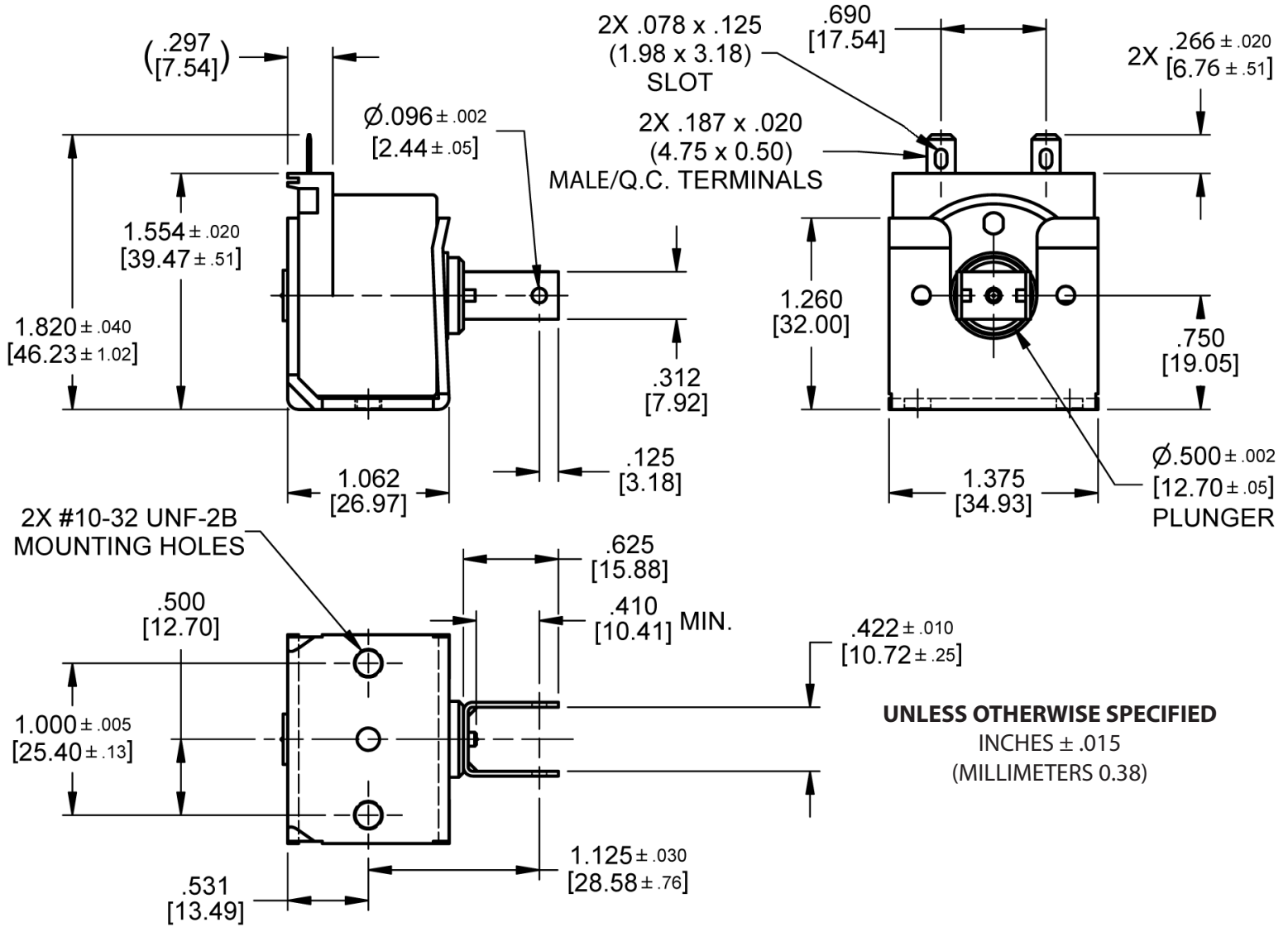


Electrical Specifications	
Coil Voltages	24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	13.7 VA Continuous, 52 VA Intermittent, 137 VA Pulse 8.6 Watts Continuous, 15.5 Watts Intermittent, 86 Watts Pulse
Coil Termination	.187" quick connect terminals (standard) .250" quick connect terminals (optional) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F)Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.062" (L) x 1.375" (W) x 1.413" (H)
Forces	See force curves on page 3
Plunger Diameter	.500"
Plunger Guide Material	Plastic
Mounting	2X #10-32 UNF-2B Mounting Holes
Weight	Plunger - 0.90 oz., Total - 5.0 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D	

All dimensions in Inches

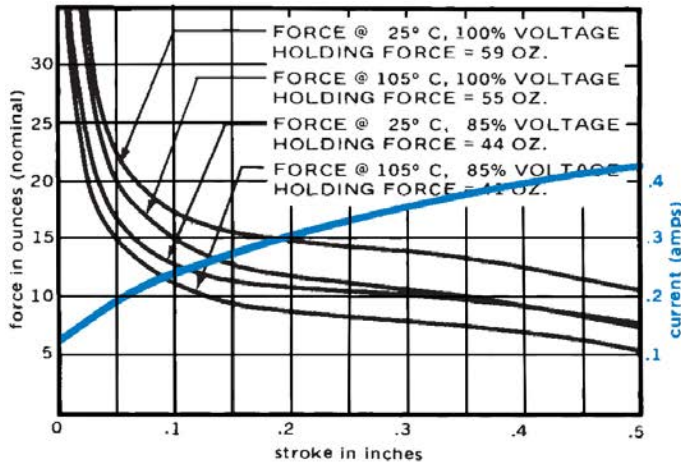
Dimensional View

Units: Inches [mm]

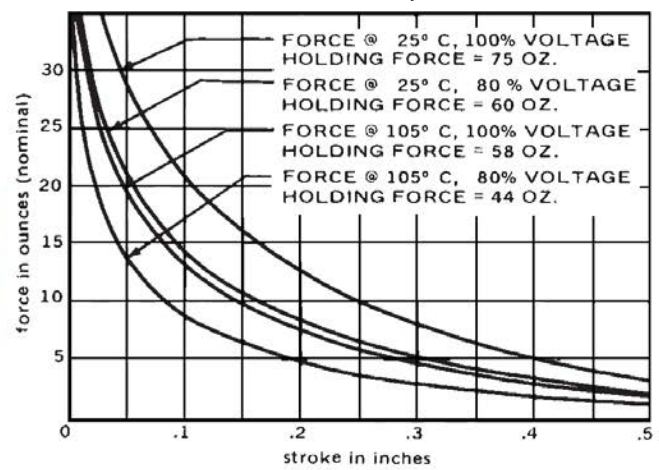


Force Curves

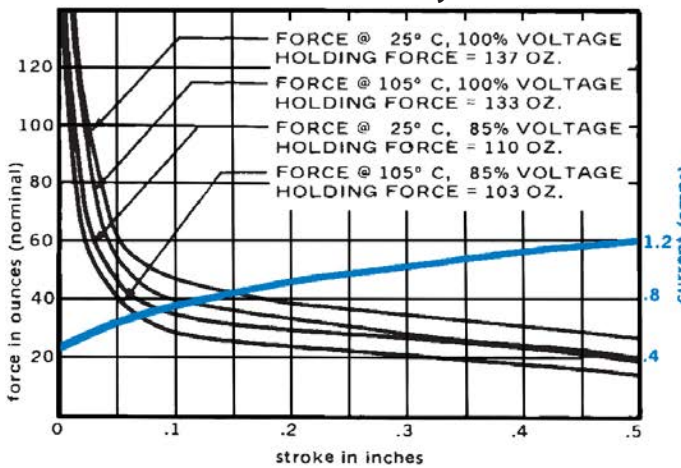
AC Continuous Duty - 13.7 VA



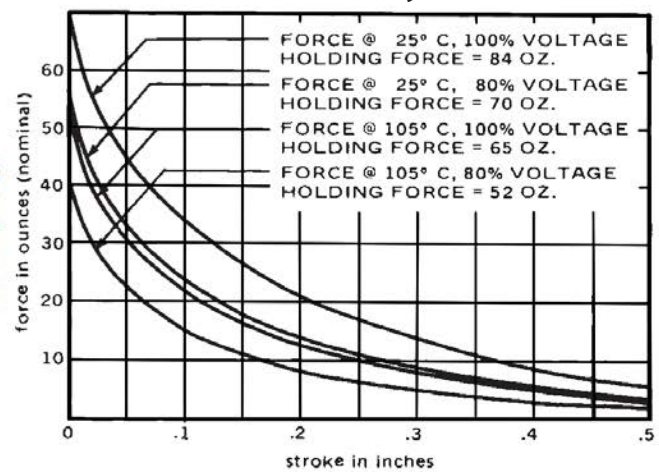
DC Continuous Duty - 8.6 Watts



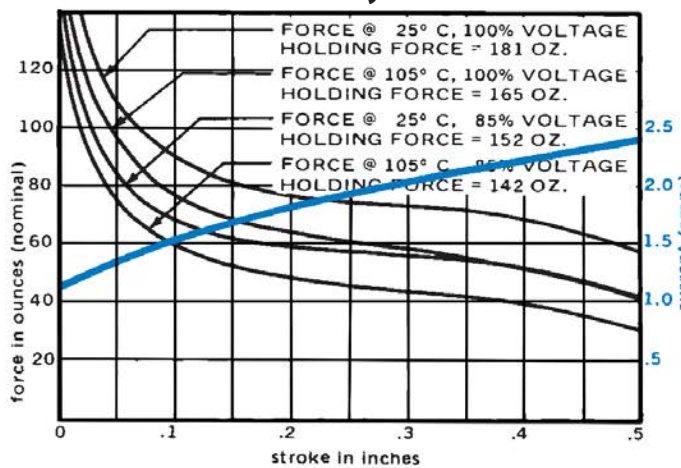
*AC Intermittent Duty - 52 VA



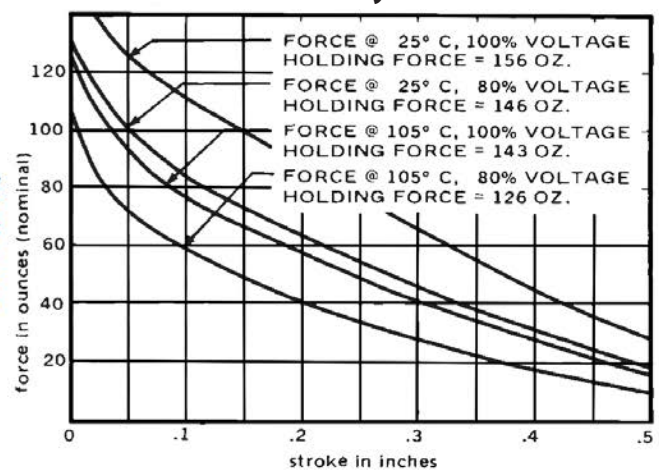
DC Intermittent Duty - 15.5 Watts



AC Pulse Duty - 137 VA



DC Pulse Duty - 86 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".

NOTE: Approx 36 sq. in. Heat Sink Required

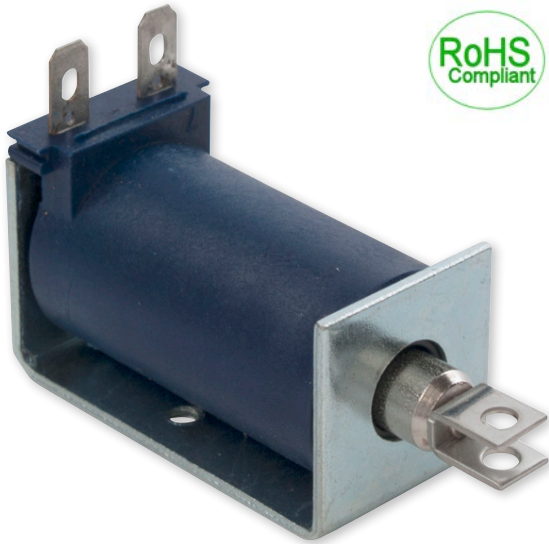
*AC intermittent duty winding based on 20% duty cycle with one "1" minute maximum "ON" time.

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53673-83	24 VAC	Continuous	13.7 VA	9.3	Pull	59	17	14	10	0
53673-94*	120 VAC			240						
53673-97	240 VAC			960						
53674-83	24 VAC	Intermittent	52 VA	3.3	Pull	137	45	36	27	0
53674-94*	120 VAC			84.1						
53674-97	240 VAC			342						
53675-94	120 VAC	Pulse	137 VA	37.6	Pull	181	85	75	57	0
53675-97	240 VAC			143						
53676-80	6 VDC	Continuous	8.6 Watts	4.1	Pull	75	18	10	3	0
53676-81	12 VDC			16.5						
53676-83	24 VDC			66.5						
53676-93	110 VDC			1430						
53677-81	12 VDC	Intermittent	15.5 Watts	9.3	Pull	84	30	17	6	0
53677-83	24 VDC			37.6						
53677-93	110 VDC			788						
53677-83	24 VDC	Pulse	86 Watts	6.7	Pull	156	105	76	30	0
53678-93	110 VDC			143						

(*) Normally Stocked

Non stocked items require a minimum order



C-FRAME SOLENOID

Two position linear solenoid with C-frame construction.

Features

- Economical construction
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

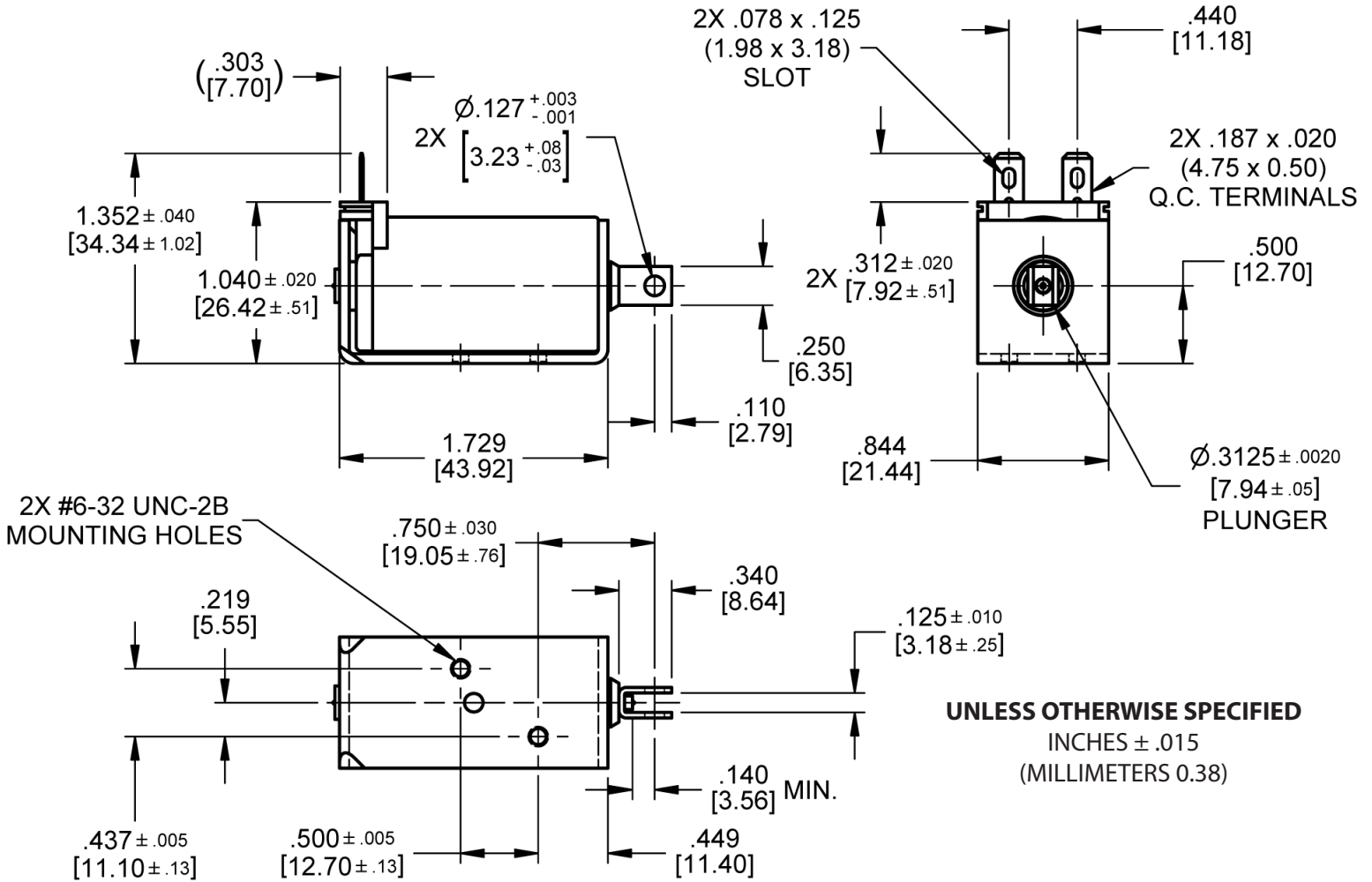


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	12 VA Continuous, 26 VA Intermittent, 120 VA Pulse 7.4 Watts Continuous, 19 Watts Intermittent, 74 Watts Pulse
Coil Termination	.187" quick connect terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.729" (L) x 0.844" (W) x 0.942" (H)
Forces	See force curves on page 3
Plunger Diameter	0.313"
Plunger Guide Material	Plastic
Mounting	2X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.48 oz., Total - 3.3 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D	

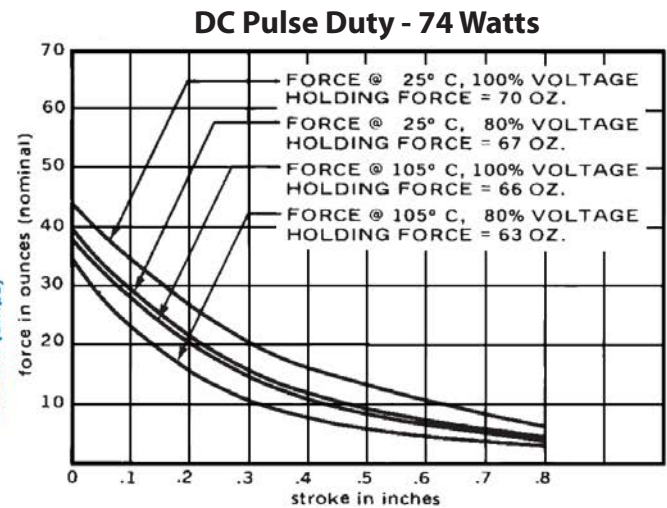
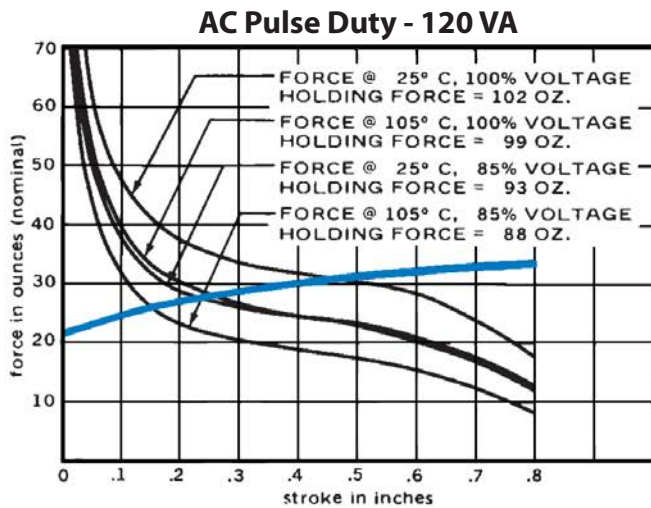
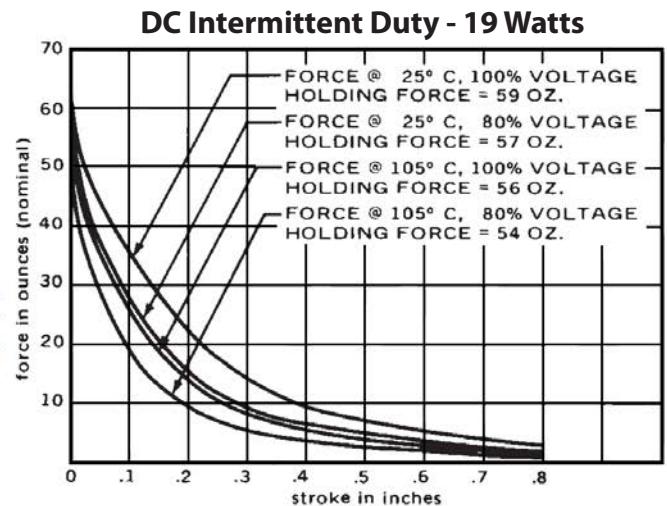
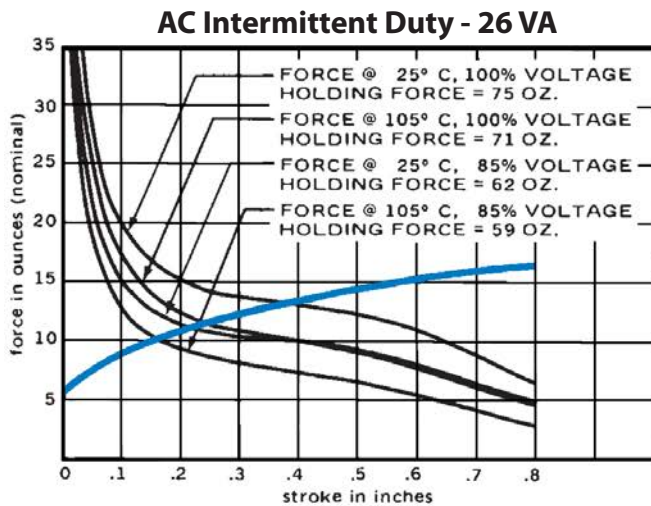
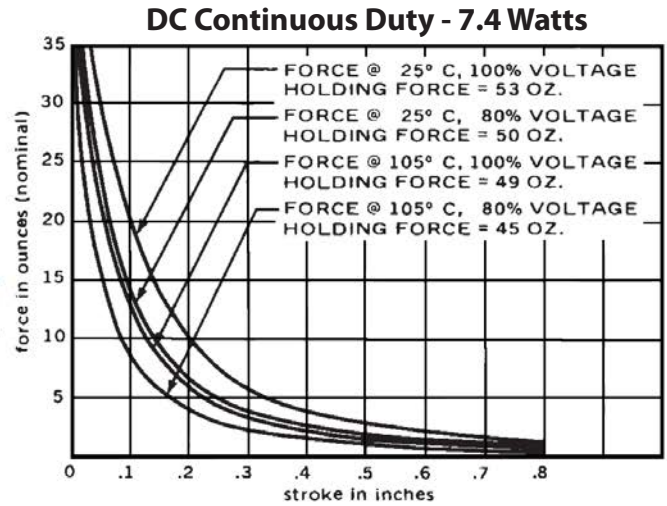
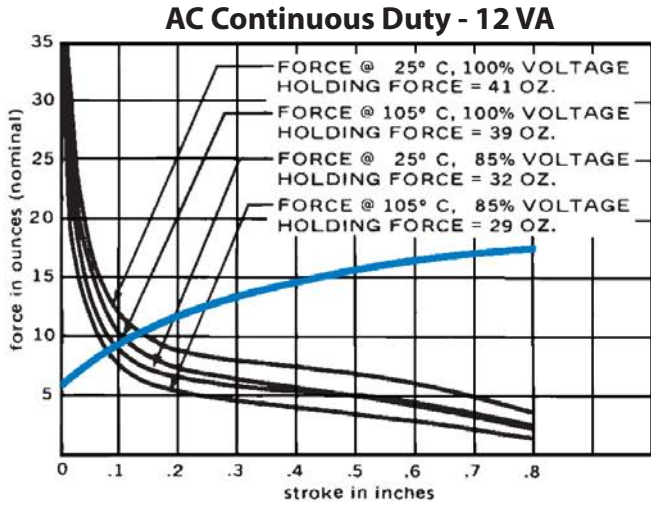
All dimensions in Inches

Dimensional View

Units: Inches [mm]



Force Curves

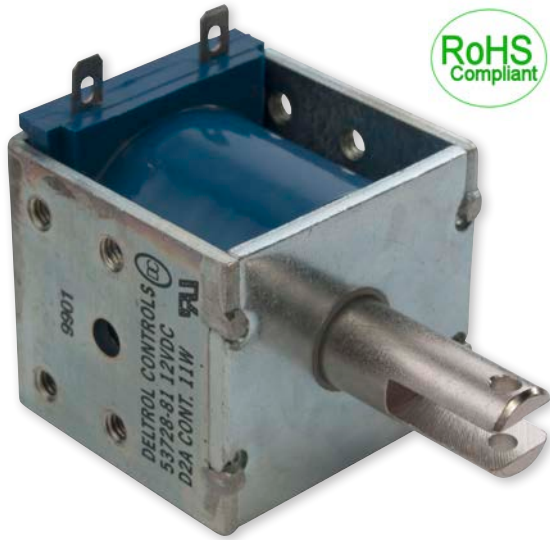


Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53679-80	6 VAC	Continuous	12 VA	0.71	Pull	41	11	8	7	4
53679-81	12 VAC			2.9						
53679-83	24 VAC			12						
53679-94*	120 VAC			302						
53679-97	240 VAC			1210						
53680-80	6 VAC	Intermittent	26 VA	0.4	Pull	75	17	14	12.5	7.5
53680-81	12 VAC			1.6						
53680-83	24 VAC			6.5						
53680-94	120 VAC			166						
53680-97	240 VAC			670						
53681-80	6 VAC	Pulse	120 VA	0.16	Pull	102	44	35	30	21
53681-81	12 VAC			0.64						
53681-83	24 VAC			2.54						
53681-94	120 VAC			65						
53681-97	240 VAC			264						
53682-80	6 VDC	Continuous	7.4 Watts	4.75	Pull	53	16	7.5	3	1.5
53682-81	12 VDC			19.2						
53682-83*	24 VDC			77.3						
53682-93	110 VDC			1690						
53683-80	6 VDC	Intermittent	19 Watts	1.83	Pull	59	32	17	7	3
53683-81	12 VDC			7.5						
53683-83*	24 VDC			30.6						
53683-93	110 VDC			638						
53684-80	6 VDC	Pulse	74 Watts	0.47	Pull	70	33	23	13	7
53684-81	12 VDC			1.83						
53684-83	24 VDC			7.5						
53684-93	110 VDC			161						

(*) Normally Stocked
 Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

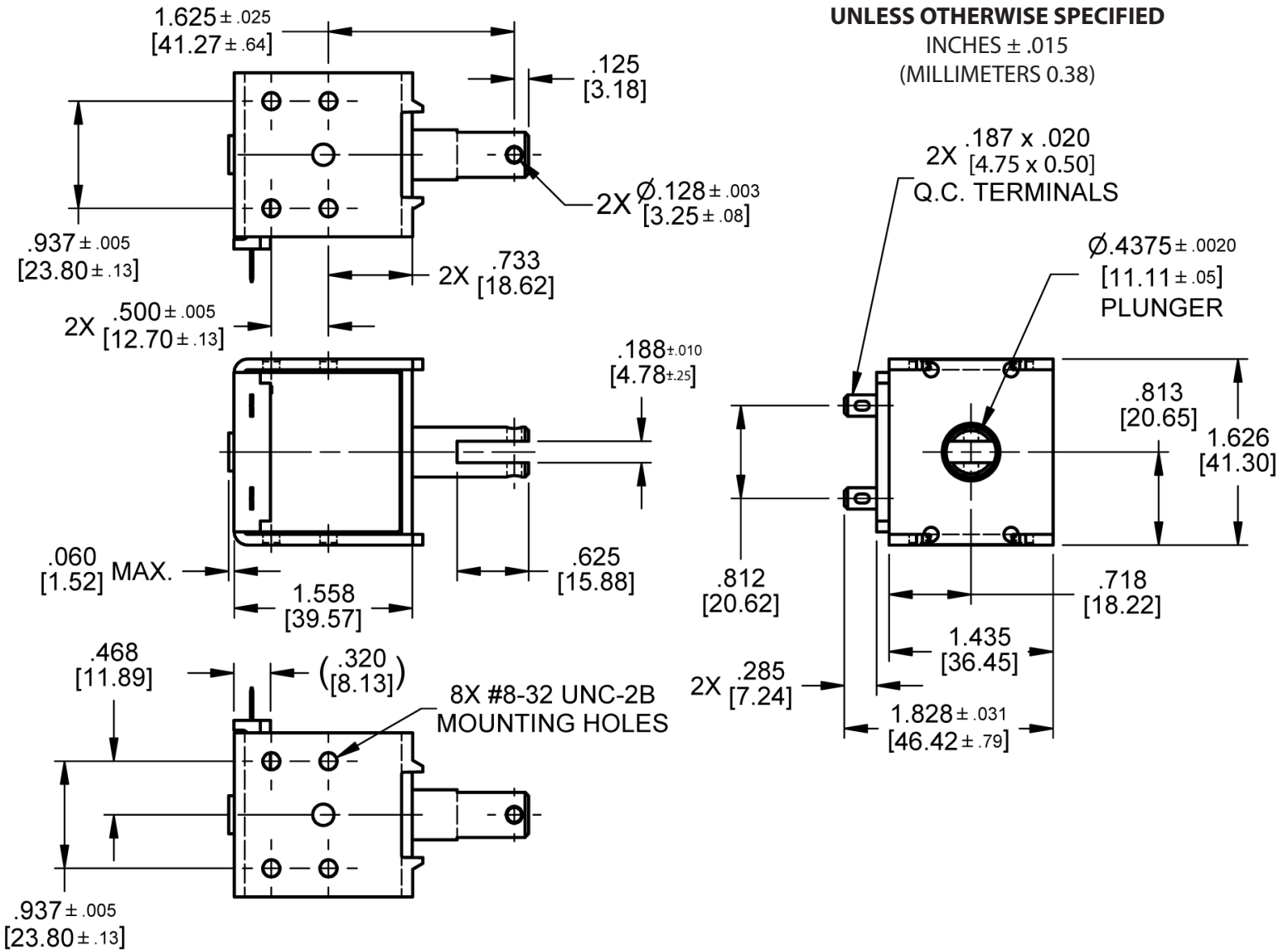


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	13 VA Continuous, 59 VA Intermittent, 135 VA Pulse, 11 Watts Continuous, 29 Watts Intermittent, 115 Watts Pulse
Coil Termination	.187" Quick Connect Terminals (standard) .250" Quick Connect Terminals (optional) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.558" (L) x 1.437" (W) x 1.625" (H) (See dimensional drawing on page 2)
Forces	See page 3 for force curves
Plunger Diameter	0.4375"
Plunger Guide Material	Plastic
Mounting	8X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.2 oz., Total - 10 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D

All dimensions in Inches

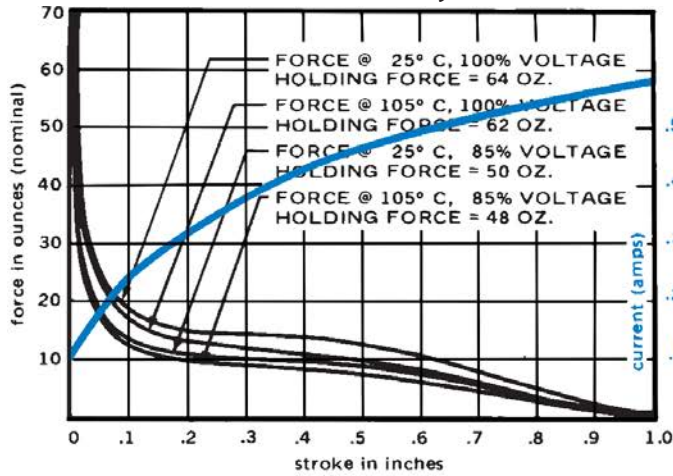
Dimensional View

Units: Inches [mm]

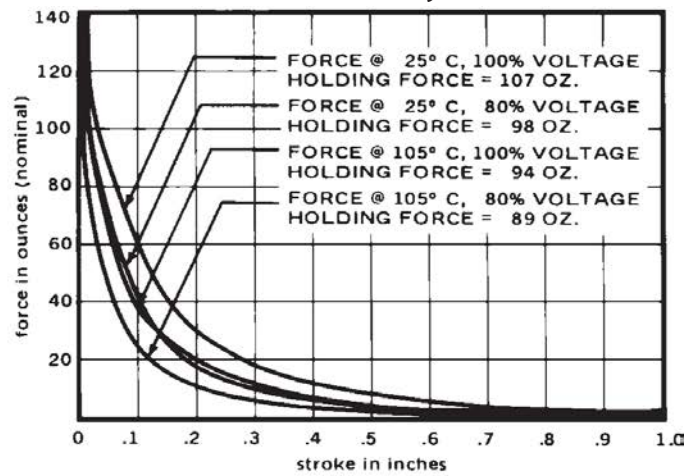


Force Curves

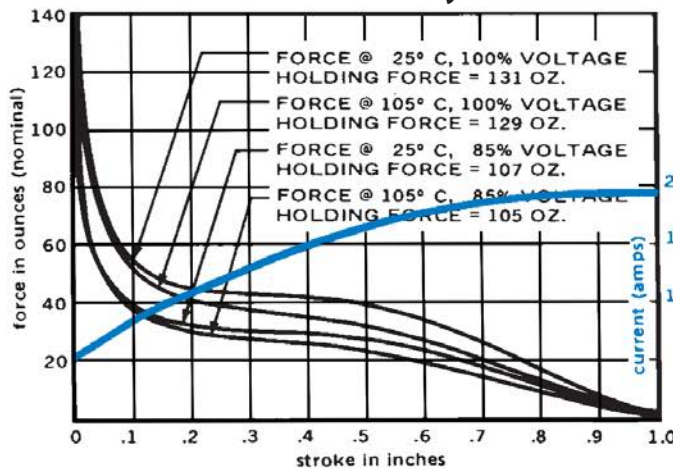
AC Continuous Duty - 13 VA



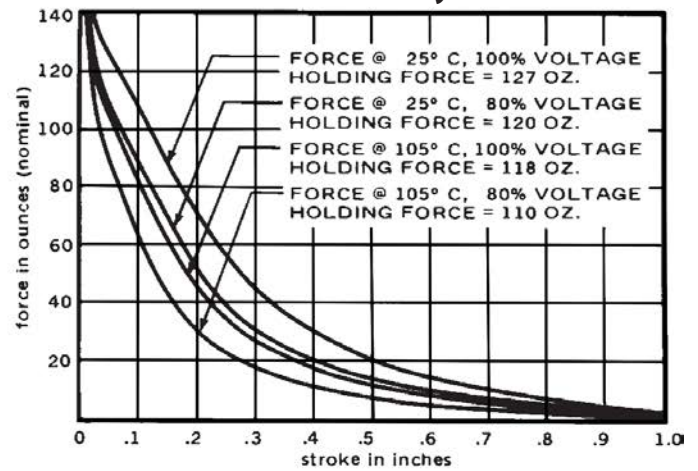
DC Continuous Duty - 11 Watts



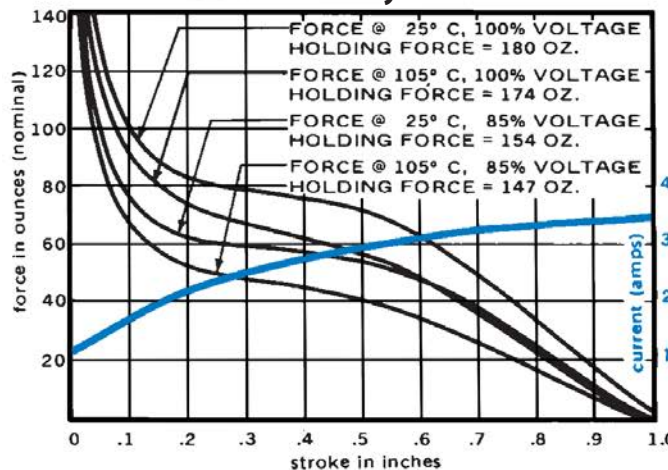
AC Intermittent Duty - 59 VA



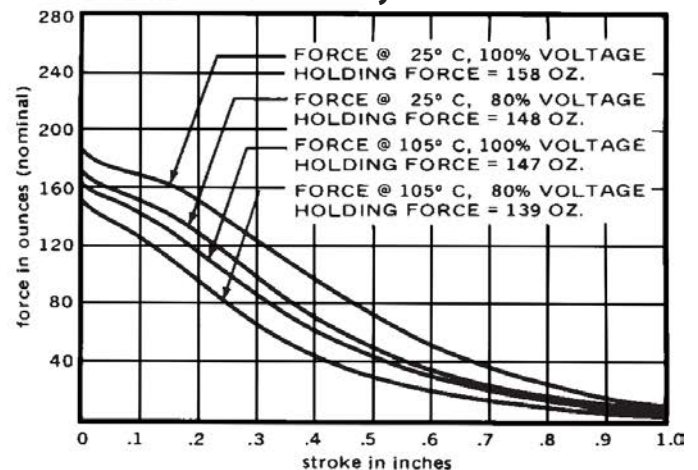
DC Intermittent Duty - 29 Watts



AC Pulse Duty - 135 VA



DC Pulse Duty - 115 Watts



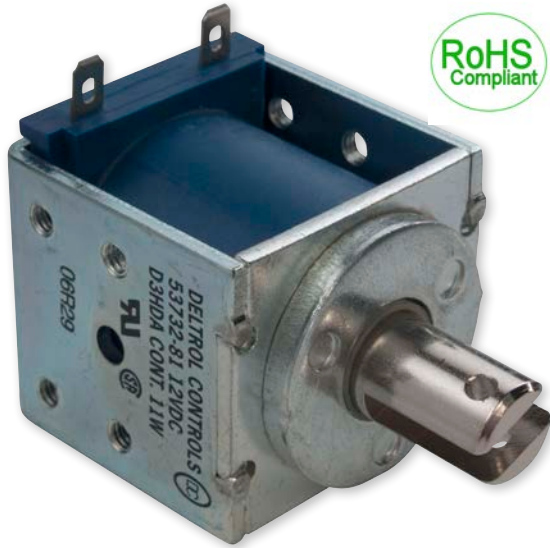
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53729-80	6 VAC	Continuous	13 VA	0.40	Pull	64	17	15	13	6
53729-81	12 VAC			1.58						
53729-82	24 VAC			6.4						
53729-84*	120 VAC			164						
53729-85	240 VAC			673						
53729-87	12 VAC	Intermittent	59 VA	0.45	Pull	131	50	44	40	21
53729-88	24 VAC			1.83						
53729-90*	120 VAC			47.0						
53729-91	240 VAC			191						
53729-93	12 VAC	Pulse	135 VA	0.303	Pull	180	94	80	72	41
53729-94	24 VAC			1.22						
53729-96	120 VAC			31.7						
53729-97	240 VAC			128.2						
53728-80	6 VDC	Continuous	11 Watts	3.34	Pull	107	50	24	9	4
53728-81*	12 VDC			13.6						
53728-82*	24 VDC			54.7						
53728-84	110 VDC			1100						
53728-86	6 VDC	Intermittent	29 Watts	1.22	Pull	127	98	55	20	9
53728-87*	12 VDC			4.92						
53728-88*	24 VDC			20.0						
53728-90	110 VDC			432						
53728-92	6 VDC	Pulse	115 Watts	.303	Pull	158	165	140	70	30
53728-93	12 VDC			1.22						
53728-94	24 VDC			4.92						
53728-96	110 VDC			106						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models



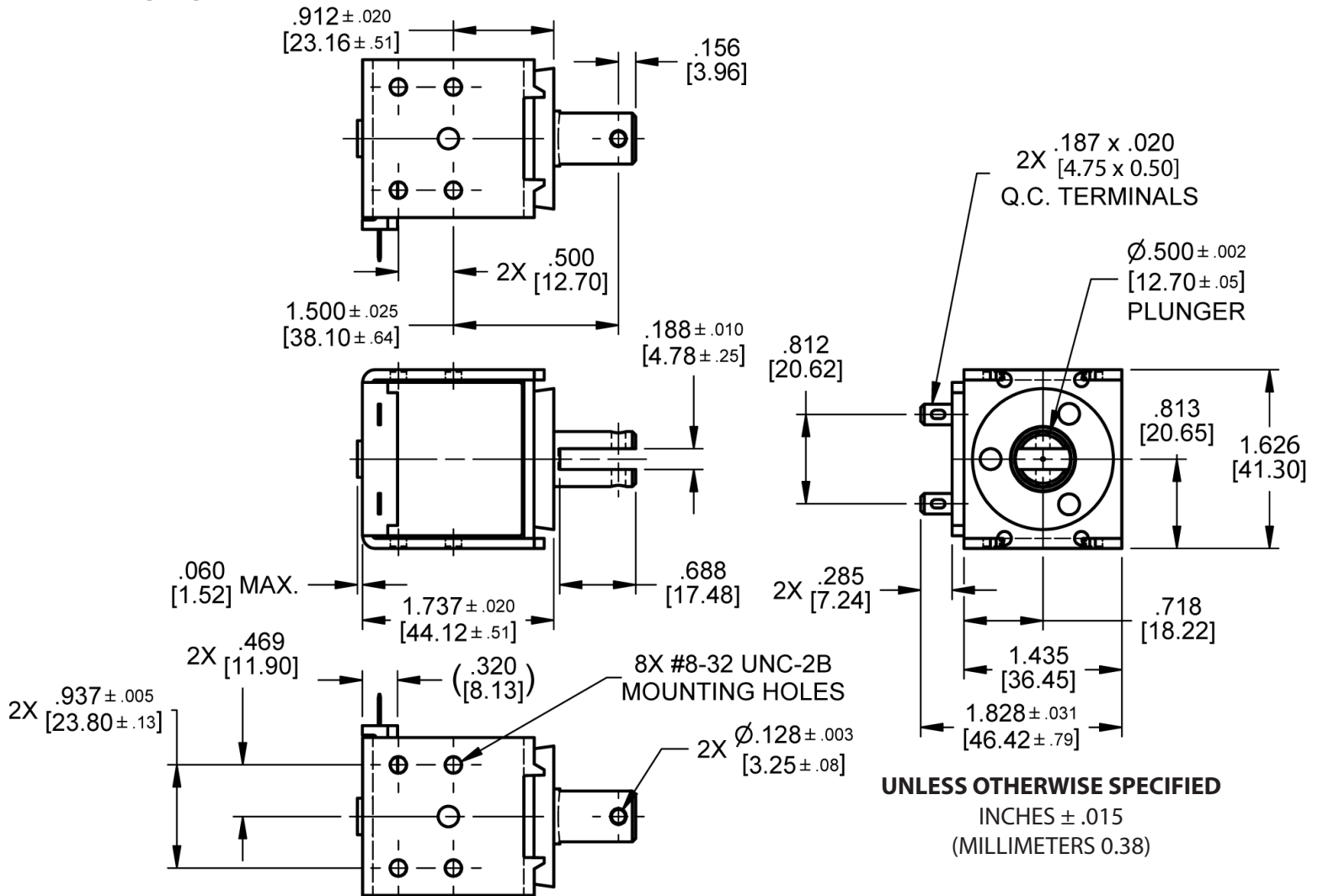
Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	21 VA Continuous, 120 VA Intermittent, 210 VA Pulse, 11 Watts Continuous, 27 Watts Intermittent, 110 Watts Pulse
Coil Termination	.187" Quick Connect Terminals (standard) .250" Quick Connect Terminals (optional) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrap optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.737" (L) x 1.437" (W) x 1.626" (H) (See dimensional drawing on page 2)
Forces	See page 3 for force curves
Plunger Diameter	0.500"
Plunger Guide Material	Plastic
Mounting	8X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.76 oz., Total - 11 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D

All dimensions in Inches

D-3HD

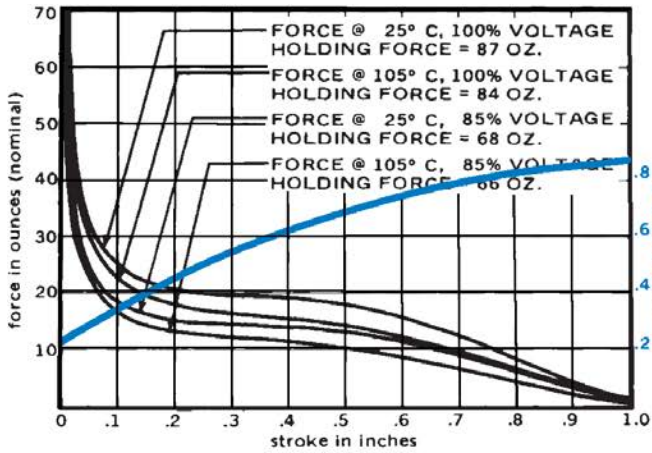
Dimensional View

Units: Inches [mm]

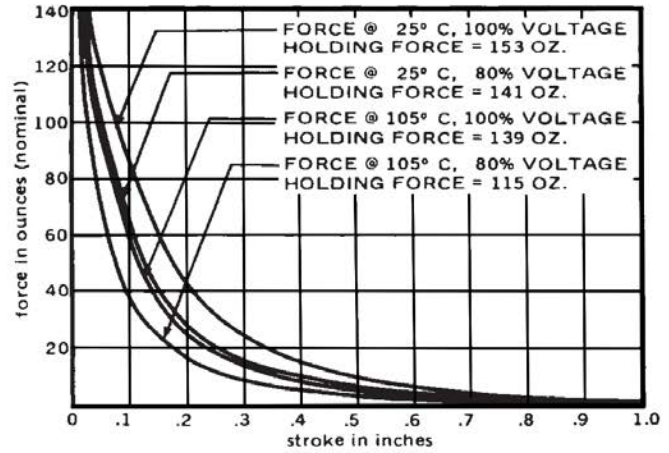


Force Curves

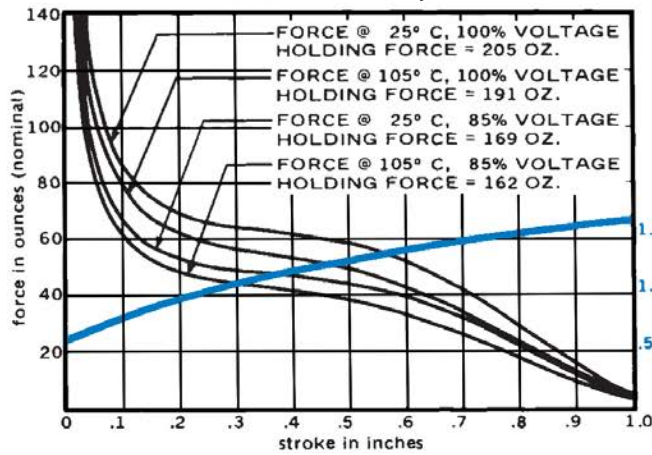
AC Continuous Duty - 21 VA



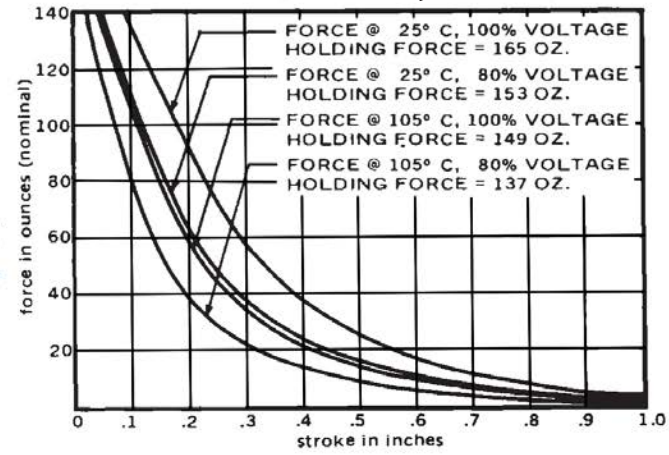
DC Continuous Duty - 11 Watts



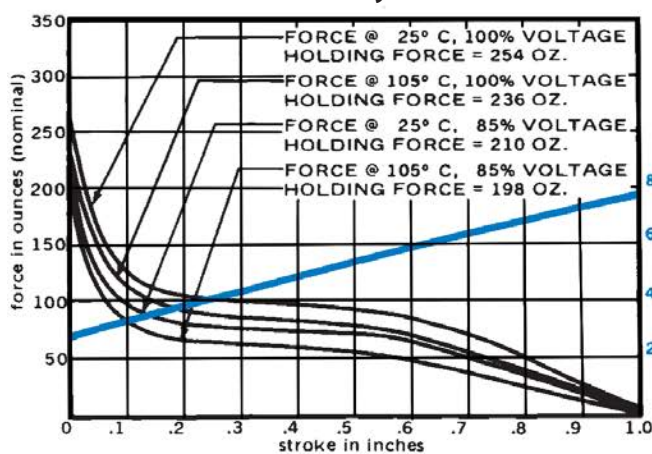
AC Intermittent Duty - 120 VA



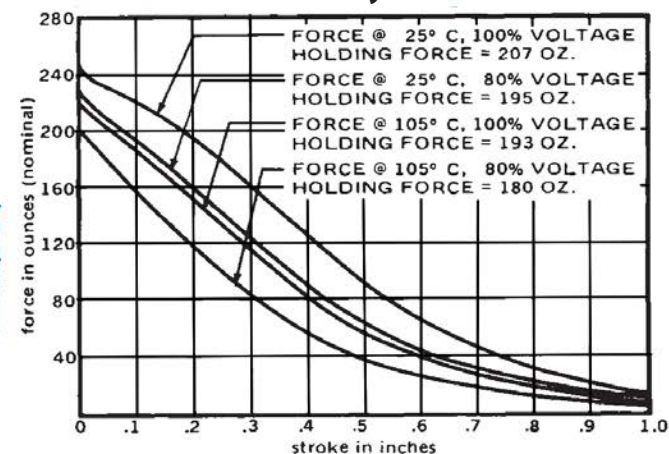
DC Intermittent Duty - 27 Watts



AC Pulse Duty - 210 VA



DC Pulse Duty - 110 Watts



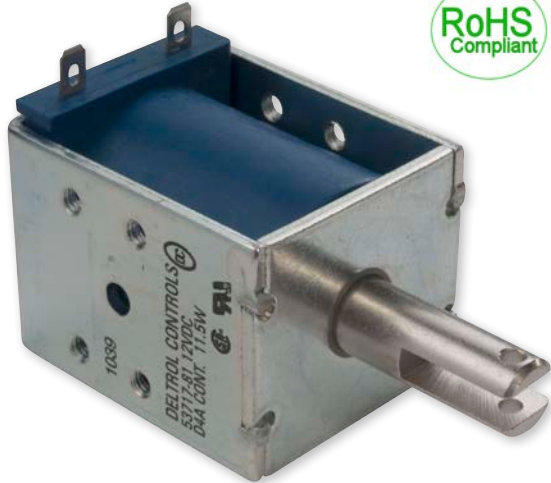
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53733-80	6 VAC	Continuous	21 VA	0.26	Pull	87	23	20	18	10
53733-81	12 VAC			1.05						
53733-82	24 VAC			4.21						
53733-84*	120 VAC			109						
53733-85	240 VAC			446						
53733-87	12 VAC	Intermittent	120 VA	0.26	Pull	205	79	65	58	34
53733-88	24 VAC			1.05						
53733-90*	120 VAC			27.6						
53733-91	240 VAC			109						
53733-94	24 VAC	Pulse	210 VA	0.70	Pull	254	115	100	90	63
53733-96	120 VAC			18.0						
53733-97	240 VAC			73.8						
53732-80	6 VDC	Continuous	11 Watts	3.13	Pull	153	74	30	10	4
53732-81*	12 VDC			12.8						
53732-82*	24 VDC			51.5						
53732-84	110 VDC			1100						
53732-86	6 VDC	Intermittent	27 Watts	1.31	Pull	165	134	70	26	10
53732-87*	12 VDC			5.27						
53732-88*	24 VDC			21.4						
53732-90	110 VDC			463						
53732-92	6 VDC	Pulse	110 Watts	.323	Pull	207	215	180	90	40
53732-93	12 VDC			1.31						
53732-94	24 VDC			5.27						
53732-96	110 VDC			109						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

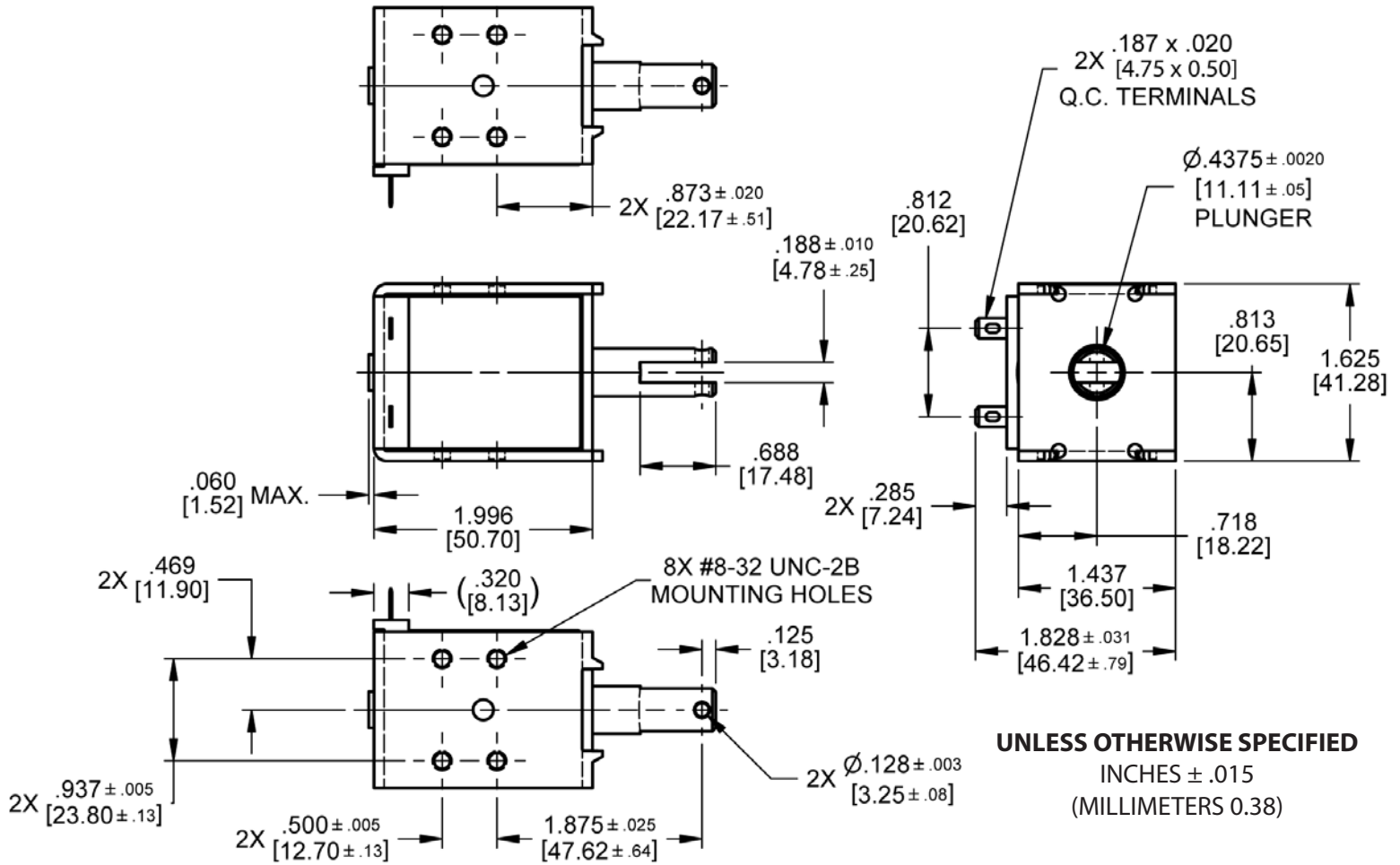


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	10 VA Continuous, 59 VA Intermittent, 100 VA Pulse, 11.5 Watts Continuous, 47 Watts Intermittent, 105 Watts Pulse
Coil Termination	.187" Quick Connect Terminals (standard) .250" Quick Connect Terminals (optional) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, Intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrap optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.996" (L) x 1.437" (W) x 1.625" (H) (See dimensional drawing on page 2)
Forces	See page 3 for force curves
Plunger Diameter	0.4375"
Plunger Guide Material	Plastic
Mounting	8X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.63 oz., Total - 12 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D

All dimensions in Inches

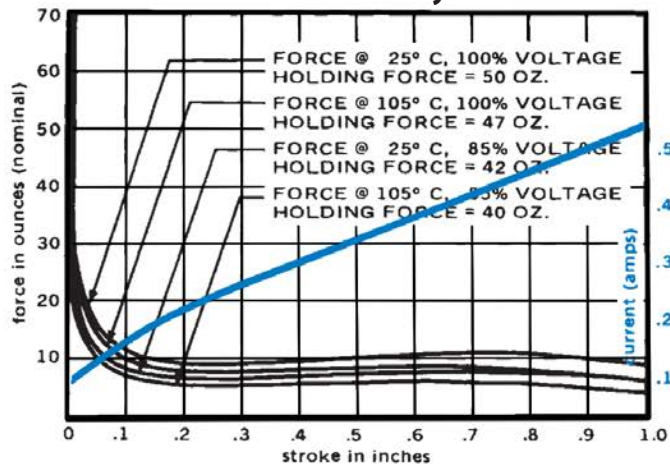
Dimensional View

Units: Inches [mm]

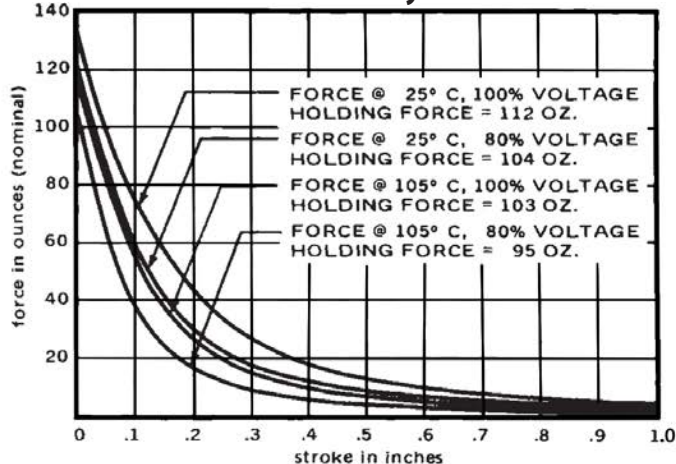


Force Curves

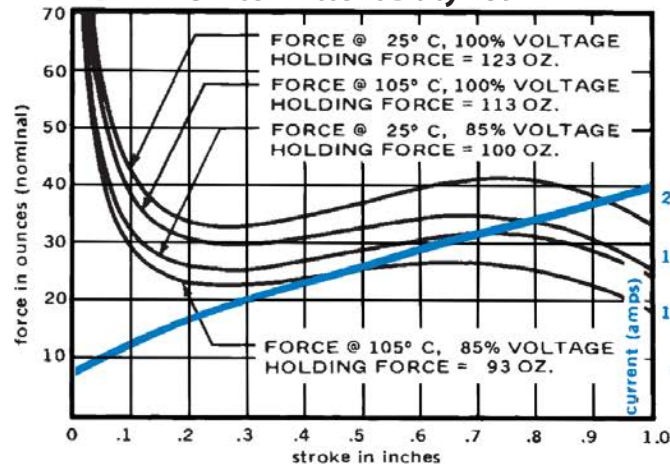
AC Continuous Duty - 10 VA



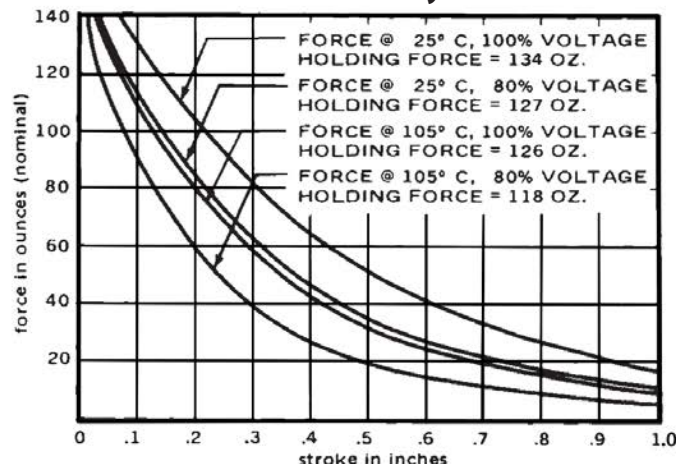
DC Continuous Duty - 11.5 Watts



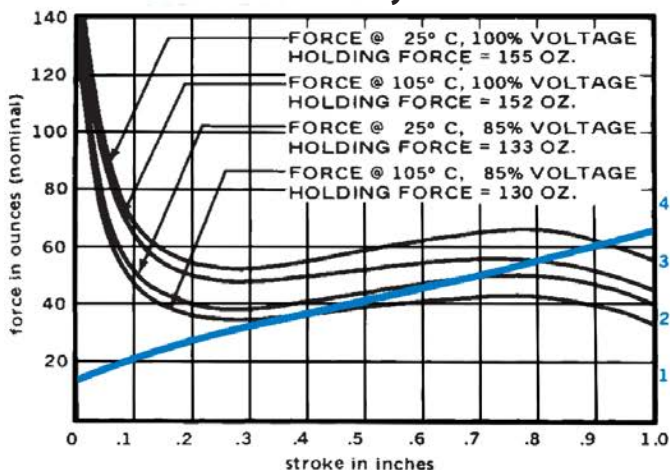
AC Intermittent Duty - 59 VA



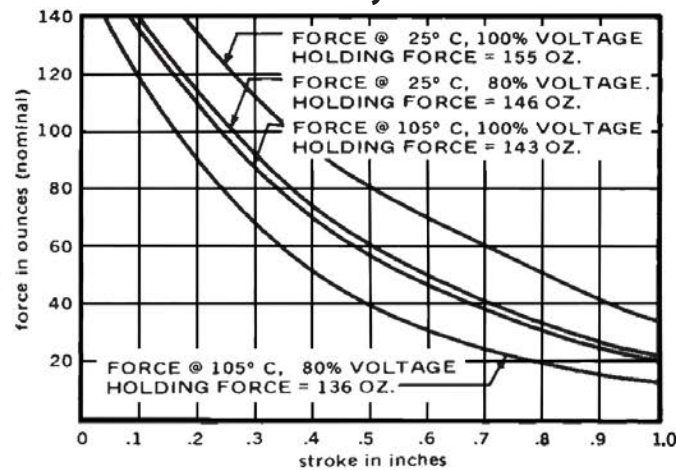
DC Intermittent Duty - 47 Watts



AC Pulse Duty - 100 VA



DC Pulse Duty - 105 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53718-80	6 VAC	Continuous	10 VA	0.384	Pull	50	10	9	10	11
53718-81	12 VAC			1.55						
53718-82	24 VAC			6.25						
53718-84*	120 VAC			163						
53718-85	240 VAC			665						
53718-87	12 VAC	Intermittent	59 VA	.384	Pull	123	38	33	36	41
53718-88	24 VAC			1.55						
53718-90*	120 VAC			41.0						
53718-91	240 VAC			163						
53718-94	24 VAC	Pulse	100 VA	1.01	Pull	155	62	52	59	65
53718-96	120 VAC			26.1						
53718-97	240 VAC			107						
53717-80	6 VDC	Continuous	11.5 Watts	3.01	Pull	112	65	32	12	8
53717-81*	12 VDC			12.3						
53717-82*	24 VDC			50.0						
53717-84	110 VDC			1070						
53717-86	6 VDC	Intermittent	47 Watts	0.744	Pull	134	123	90	50	30
53717-87*	12 VDC			3.01						
53717-88*	24 VDC			12.3						
53717-90	110 VDC			261						
53717-92	6 VDC	Pulse	105 Watts	0.337	Pull	155	157	122	80	55
53717-93	12 VDC			1.36						
53717-94	24 VDC			5.48						
53717-96	110 VDC			107						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models



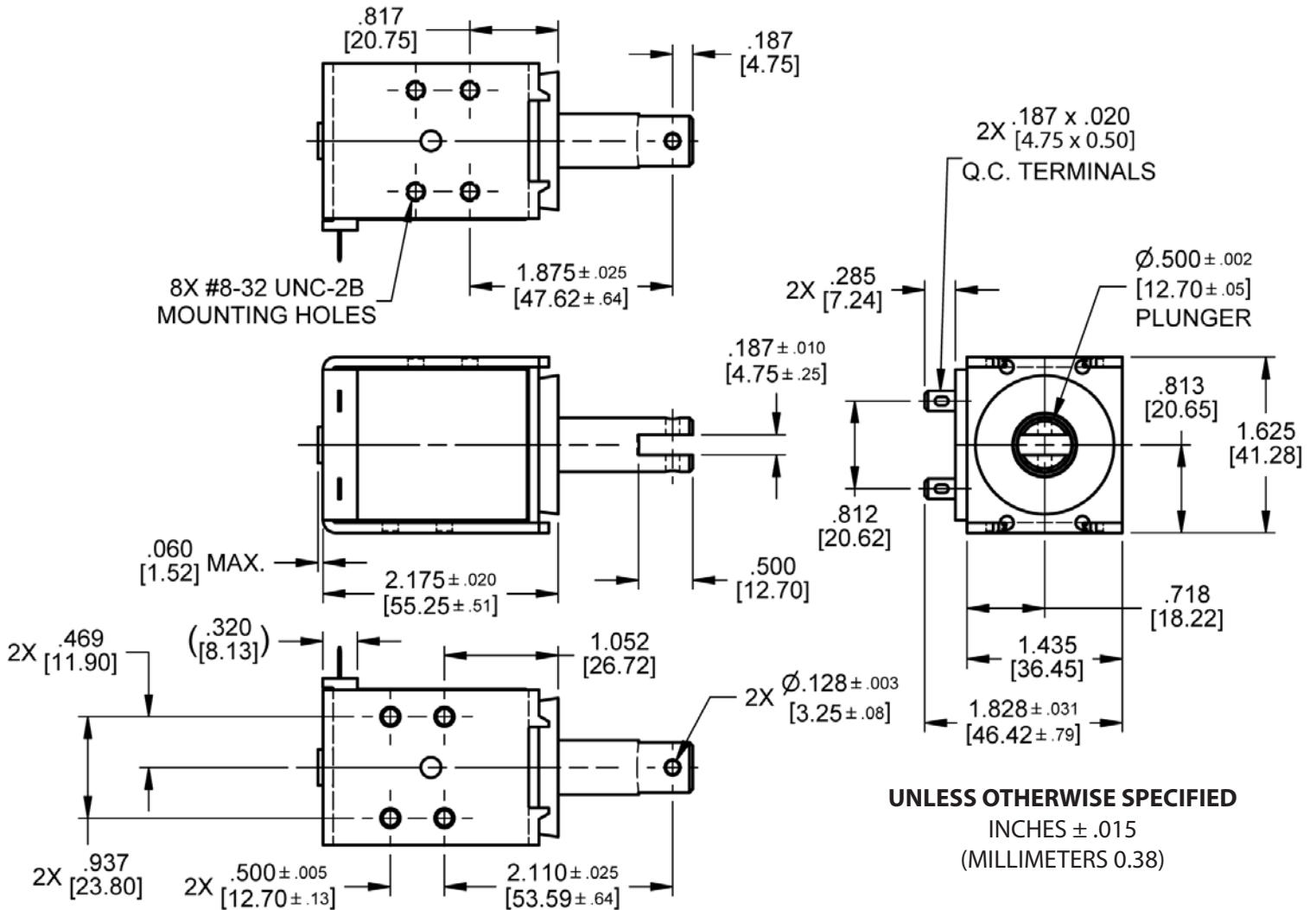
Electrical Specifications	
Coil Voltages	12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	31 VA Continuous, 145 VA Intermittent, 310 VA Pulse 11.5 Watts Continuous, 38 Watts Intermittent, 115 Watts Pulse
Coil Termination	0.187" Quick Connect Terminals (standard) 0.250" Quick Connect Terminals (optional) Wire Leads (optional with tape wrapped coil)
Duty Cycle	Continuous, intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105° C Max. (221°F) (standard) Class F Rating - 155° C Max. (311°F) (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.175" (L) x 1.437" (W) x 1.625" (H) (See dimensional drawing on page 2)
Forces	See force curves on page 3
Plunger Diameter	0.500"
Plunger Guide Material	Plastic
Mounting	8X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 2.5 oz., Total - 13.3 oz
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, & S155D

All dimensions in Inches

D-4HD

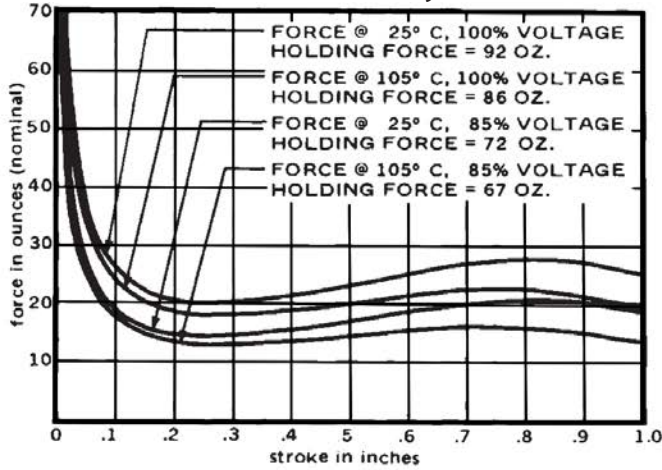
Dimensional View

Units: Inches [mm]

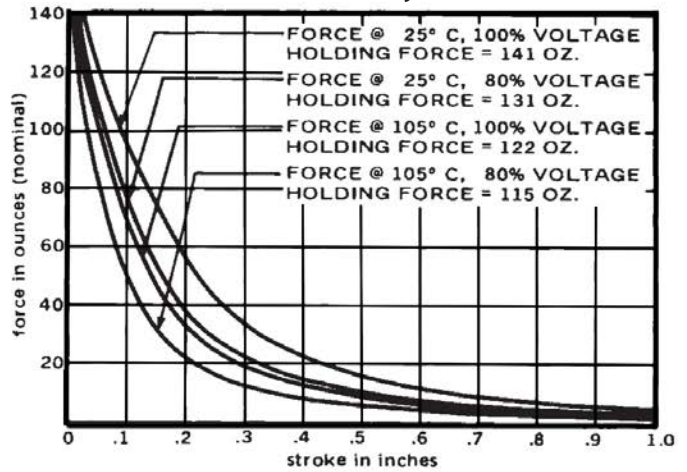


Force Curves

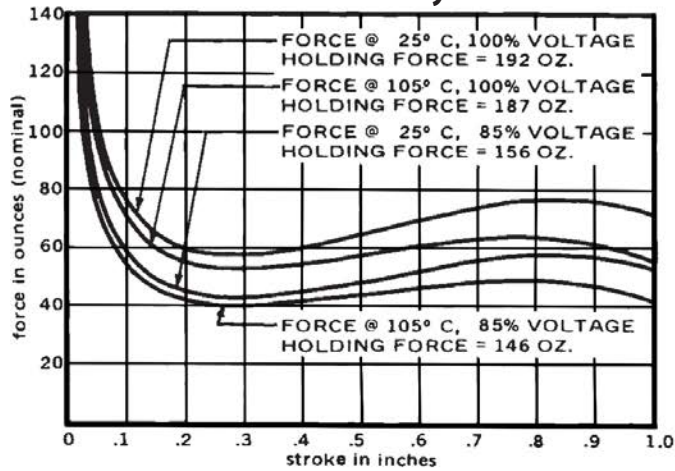
AC Continuous Duty - 31 VA



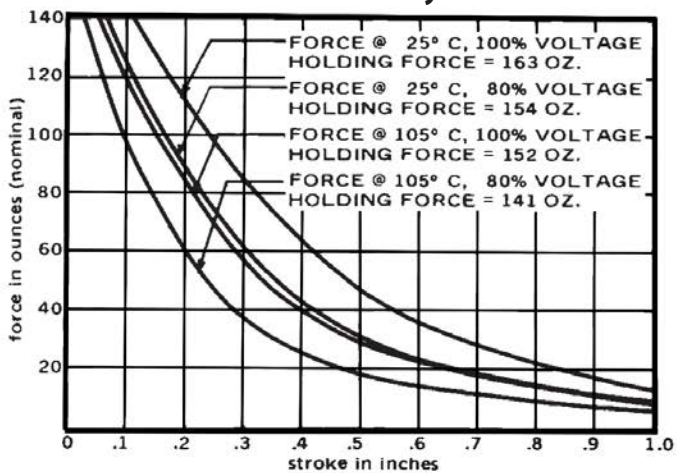
DC Continuous Duty - 11.5 Watts



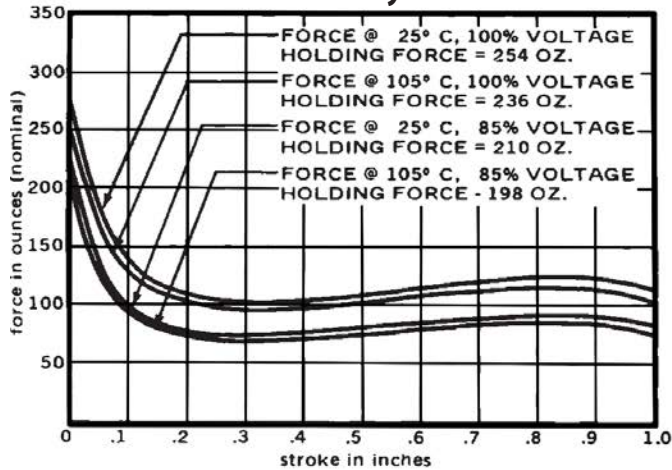
AC Intermittent Duty - 145 VA



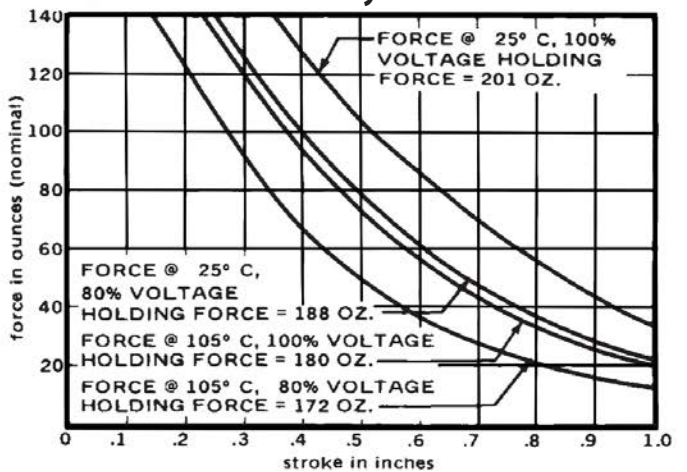
DC Intermittent Duty - 38 Watts



AC Pulse Duty - 310 VA



DC Pulse Duty - 115 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53720-81	12 VAC	Continuous	31 VA	0.588	Pull	92	23	20	23	27
53720-82	24 VAC			2.38						
53720-84*	120 VAC			61.1						
53720-85	240 VAC			247						
53720-88	24 VAC	Intermittent	145 VA	0.689	Pull	192	70	58	65	75
53720-90*	120 VAC			17.7						
53720-91	240 VAC			71.8						
53720-94	12 VAC	Pulse	310 VA	0.453	Pull	254	125	105	108	125
53720-96	120 VAC			11.7						
53720-97	240 VAC			48.2						
53719-80	6 VDC	Continuous	11.5 Watts	2.88	Pull	141	85	41	15	9
53719-81*	12 VDC			11.7						
53719-82*	24 VDC			48.2						
53719-84	110 VDC			1033						
53719-86	6 VDC	Intermittent	38 Watts	0.924	Pull	163	135	95	48	25
53719-87*	12 VDC			3.75						
53719-88*	24 VDC			15.2						
53719-90	110 VDC			328						
53719-92	6 VDC	Pulse	115 Watts	0.316	Pull	201	210	175	105	62
53719-93	12 VDC			1.25						
53719-94	24 VDC			5.10						
53719-96	110 VDC			105						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models



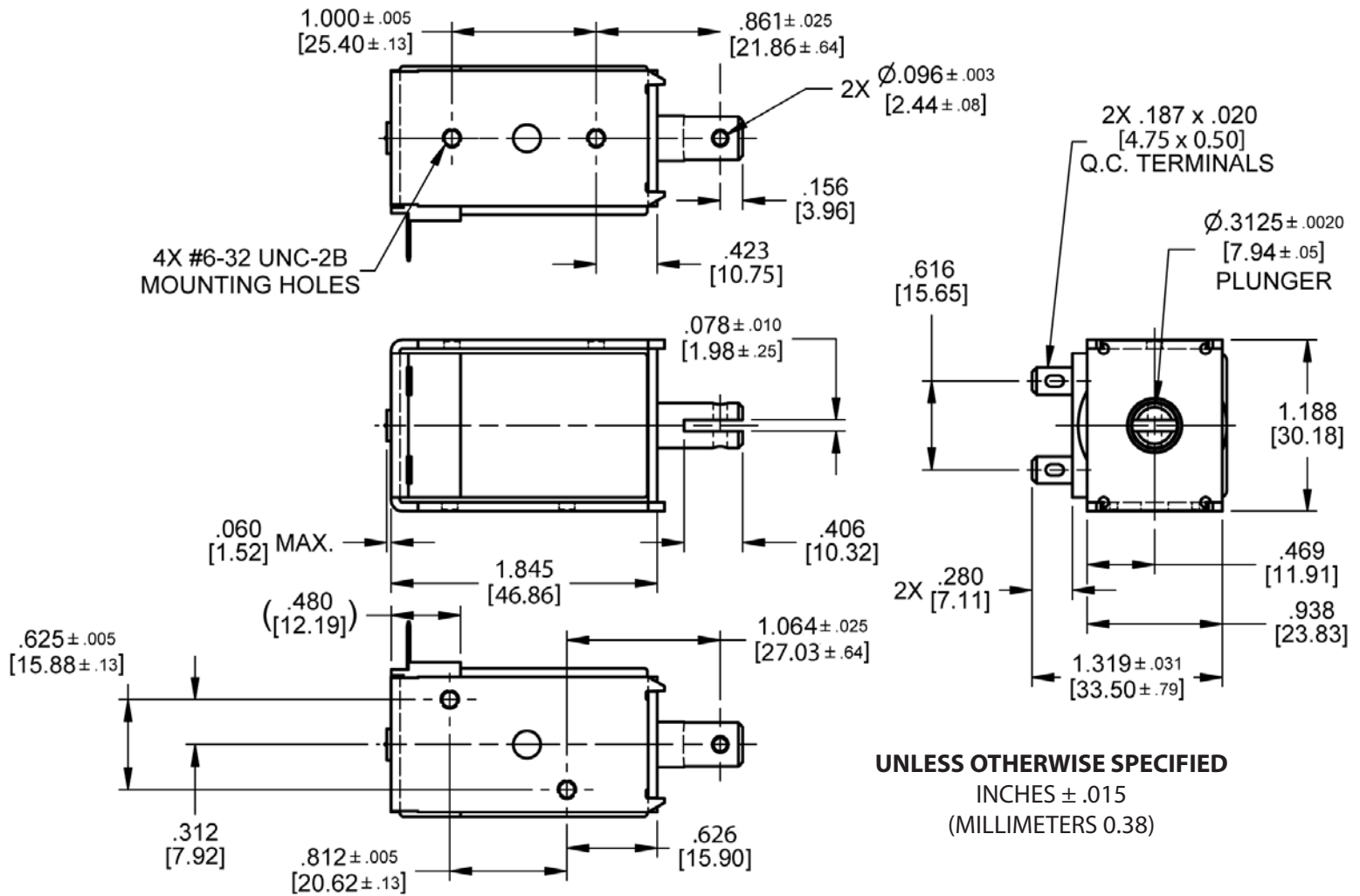
Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	12.5 VA Continuous, 39 VA Intermittent, 125 VA Pulse 8 Watts Continuous, 19 Watts Intermittent, 80 Watts Pulse
Coil Termination	.187" Quick Connect Terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard parts on page 4)
Coil Treatment	Encapsulated (tape wrap optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.851" (L) x 0.938" (W) x 1.190" (H) (See dimensional drawing on page 2)
Forces	See force curve tables on page 3
Plunger Diameter	0.3125"
Plunger Guide Material	Plastic
Mounting	4X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.65 oz., Total - 5.0 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D	

All dimensions in Inches

D-11

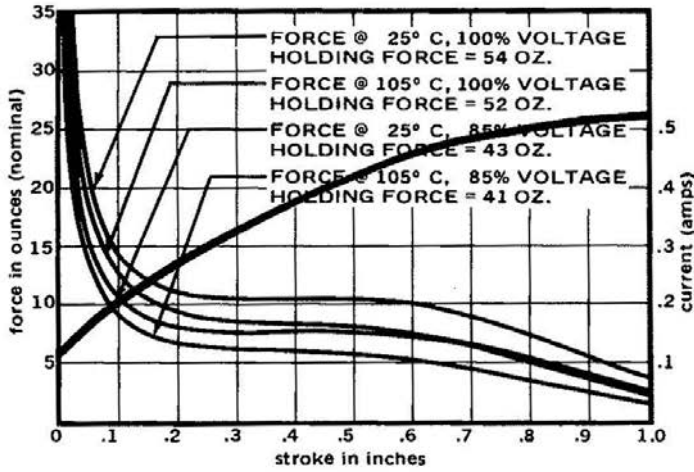
Dimensional View

Units: Inches [mm]

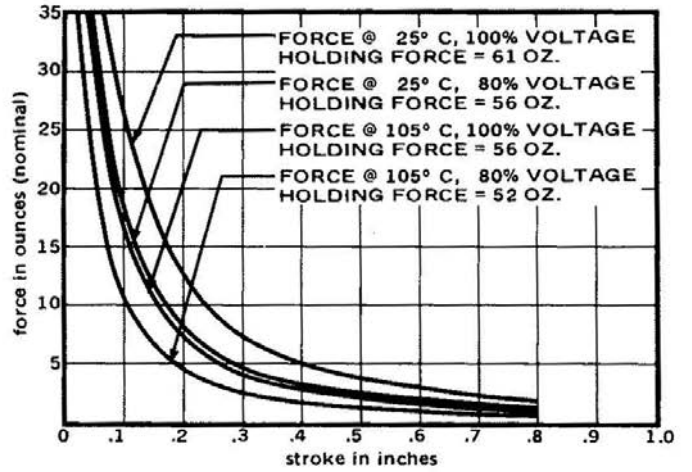


Force Curves

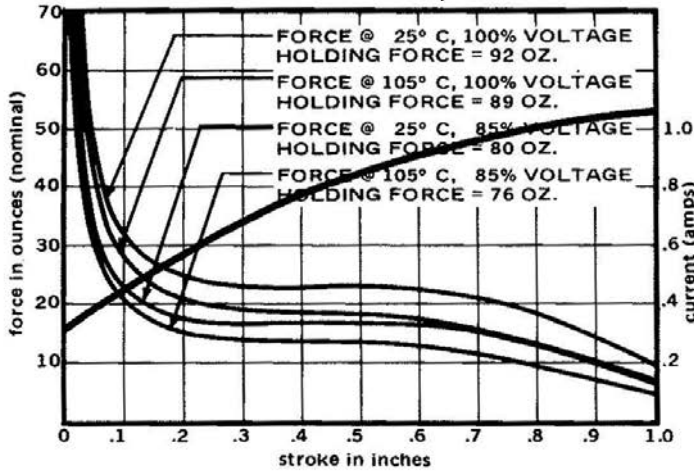
AC Continuous Duty - 12.5 VA



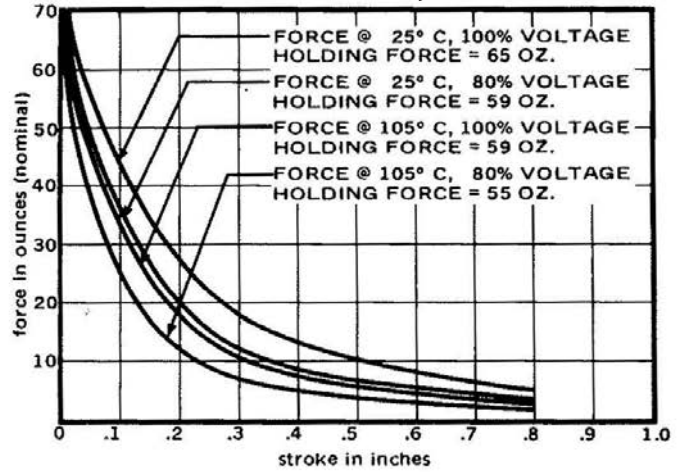
DC Continuous Duty - 8 Watts



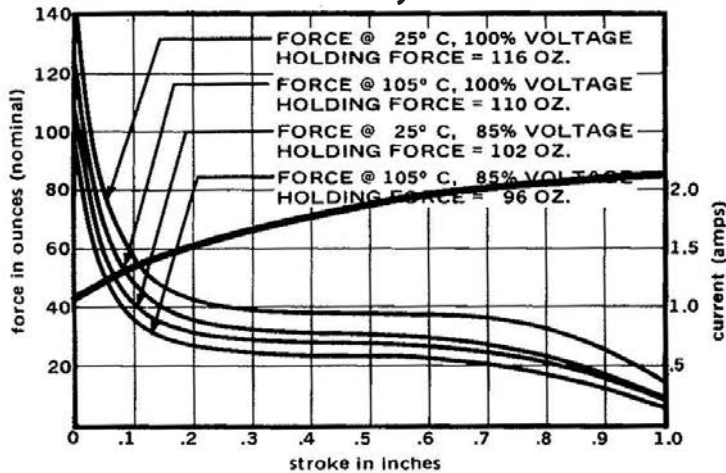
AC Intermittent Duty - 39 VA



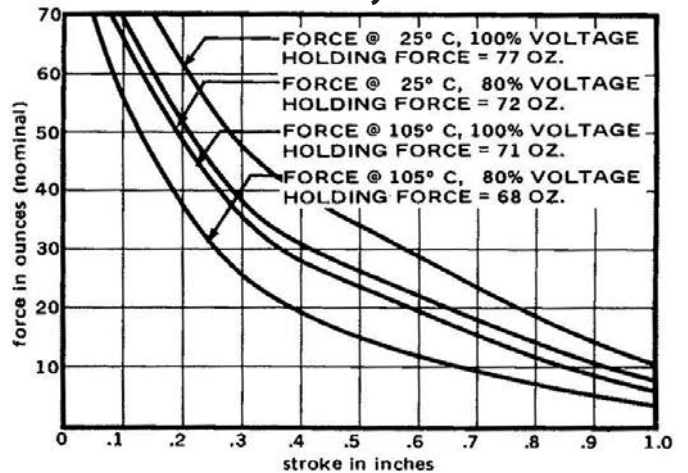
DC Intermittent Duty - 19 Watts



AC Pulse Duty - 125 VA



DC Pulse Duty - 80 Watts



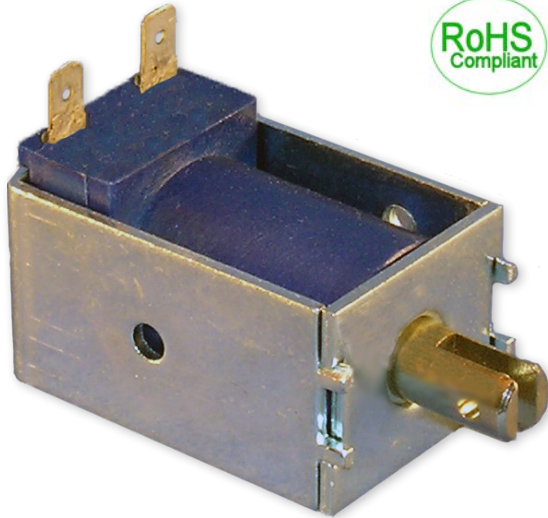
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53738-80	6 VAC	Continuous	12.5 VA	0.47	Pull	54	13	11	10	8
53738-81	12 VAC			1.9						
53738-82	24 VAC			7.7						
53738-84*	120 VAC			200						
53738-85	240 VAC			813						
53738-86	6 VAC	Intermittent	39 VA	0.21	Pull	92	28	23	23	20
53738-87	12 VAC			0.86						
53738-88	24 VAC			3.5						
53738-90*	120 VAC			85						
53738-91	240 VAC			342						
53738-92	6 VAC	Pulse	125 VA	0.11	Pull	116	51	40	38	34
53738-93	12 VAC			0.43						
53738-94	24 VAC			1.73						
53738-96	120 VAC			45.5						
53738-97	240 VAC			182						
53736-80	6 VDC	Continuous	8 Watts	4.5	Pull	61	22.5	8	4	2
53736-81*	12 VDC			18.6						
53736-82*	24 VDC			73.9						
53736-84	110 VDC			1550						
53736-86	6 VDC	Intermittent	19 Watts	1.9	Pull	65	40	22	10	5
53736-87*	12 VDC			7.7						
53736-88*	24 VDC			31						
53736-90	110 VDC			634						
53736-92	6 VDC	Pulse	80 Watts	0.47	Pull	77	74	53	34	21
53736-93	12 VDC			1.9						
53736-94	24 VDC			7.7						
53736-96	110 VDC			151						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

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- Encapsulated coils on most models
- UL approval on many models

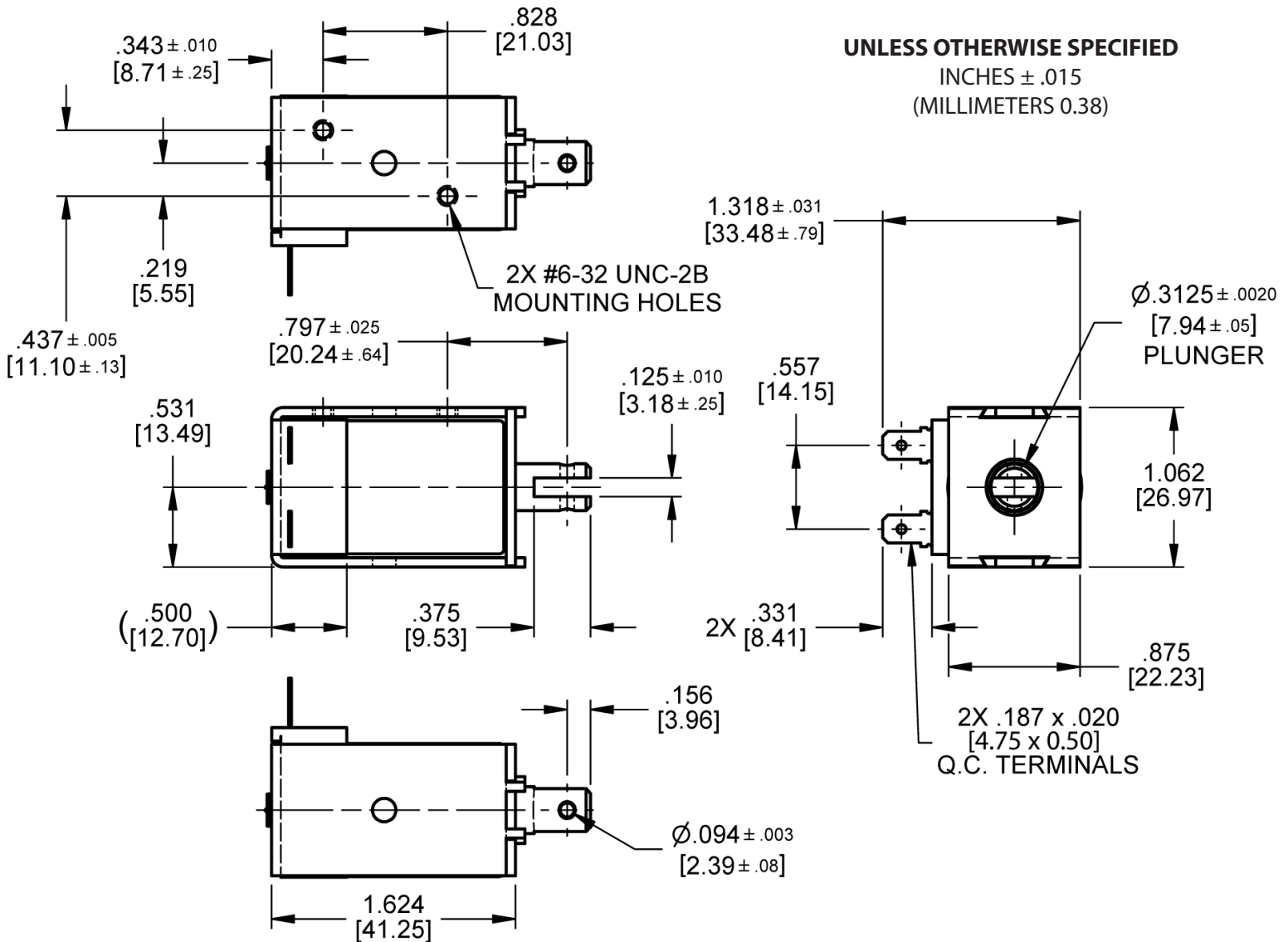


Electrical Specifications	
Coil Voltages	6, 12, 24 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	9.4 VA Continuous, 23 VA Intermittent, 93 VA Pulse 6 Watts Continuous, 14.5 Watts Intermittent, 60 Watts Pulse
Coil Termination	.187" Quick Connect Terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.624" (L) x 0.875" (W) x 1.062" (H) (See page 2 for dimensional drawing)
Forces	See page 3 for force curves
Plunger Diameter	0.3125"
Plunger Guide Material	Plastic
Mounting	2X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.50 oz., Total - 4 oz
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105

All dimensions in Inches

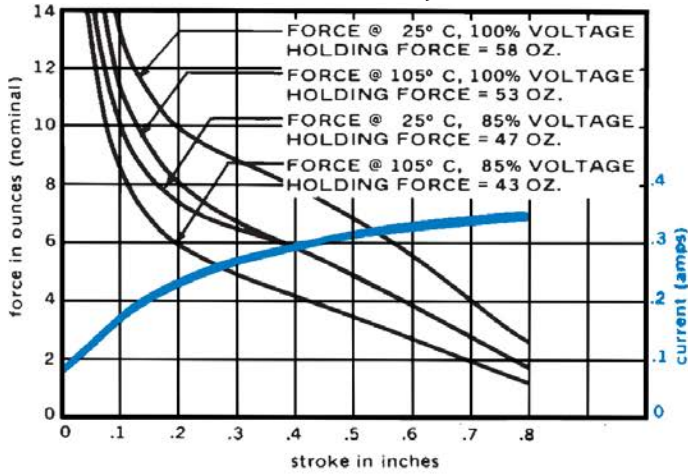
Dimensional View

Units: Inches [mm]

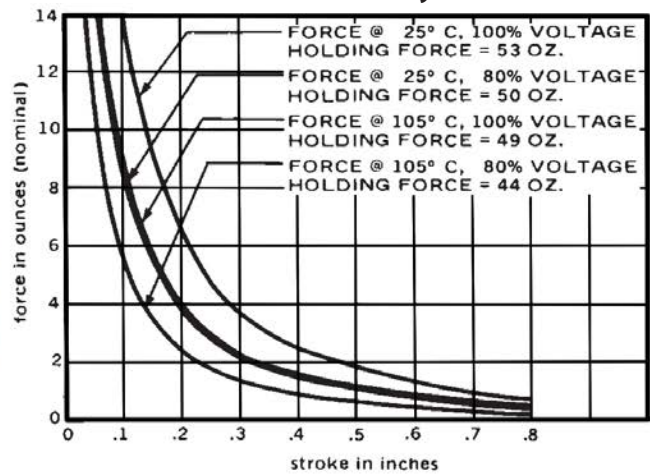


Force Curves

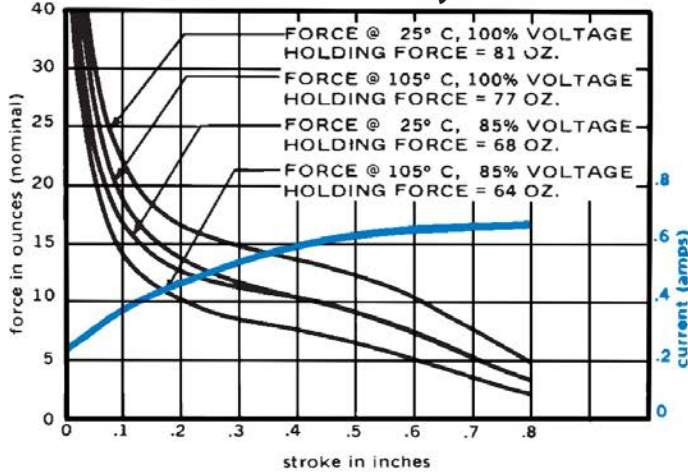
AC Continuous Duty - 9.4 VA



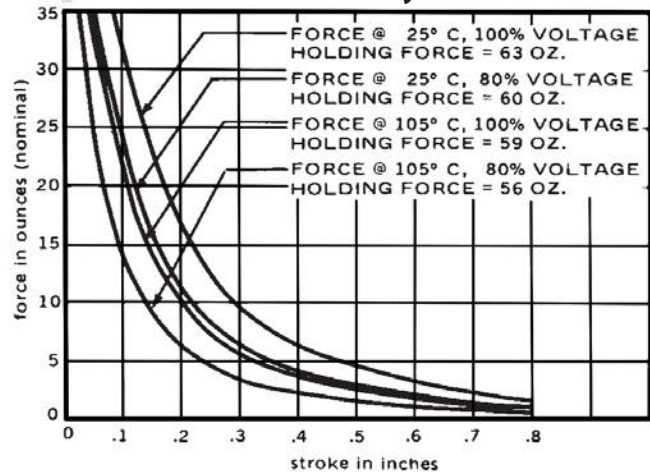
DC Continuous Duty - 6 Watts



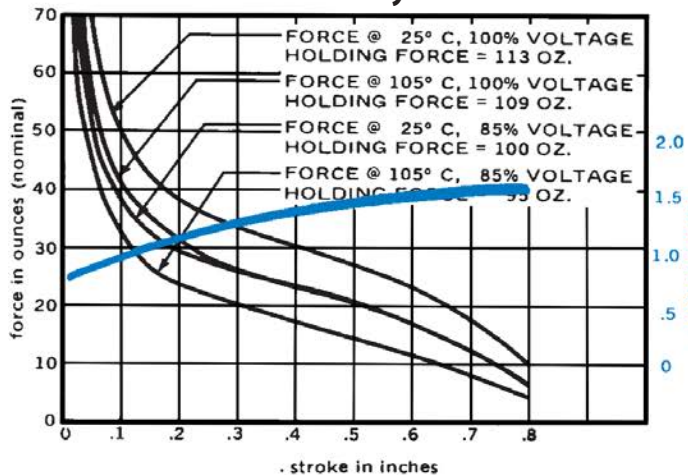
AC Intermittent Duty - 23 VA



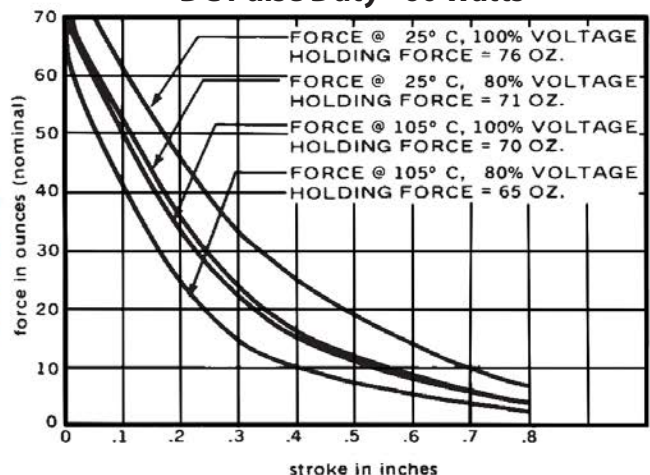
DC Intermittent Duty - 14.5 Watts



AC Pulse Duty - 93 VA



DC Pulse Duty - 60 Watts



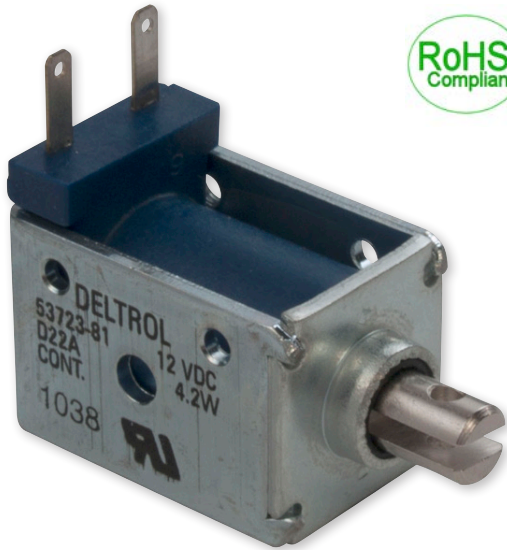
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53701-80	6 VAC	Continuous	9.4 VA	0.733	Pull	58	12	9	7	3
53701-81	12 VAC			2.95						
53701-82	24 VAC			12.1						
53701-84	120 VAC			303						
53701-85	240 VAC			1220						
53701-86	6 VAC	Intermittent	23 VA	0.41	Pull	81	20	16	12	7
53701-87	12 VAC			1.62						
53701-88	24 VAC			6.5						
53701-90	120 VAC			169						
53701-91	240 VAC			673						
53701-92	6 VAC	Pulse	93 VA	0.183	Pull	113	46	36	27	14
53701-93	12 VAC			0.733						
53701-94	24 VAC			2.95						
53701-96	120 VAC			74.2						
53701-97	240 VAC			303						
53700-80	6 VDC	Continuous	6 Watts	6.1	Pull	53	12	5	1.8	0.8
53700-81	12 VDC			24.4						
53700-82	24 VDC			98.4						
53700-84	110 VDC			1990						
53700-86	6 VDC	Intermittent	14.5 Watts	2.45	Pull	63	27	12	4.5	2
53700-87	12 VDC			9.9						
53700-88	24 VDC			39.2						
53700-90	110 VDC			839						
53700-92	6 VDC	Pulse	60 Watts	.60	Pull	76	57	38	19	7
53700-93	12 VDC			2.45						
53700-94	24 VDC			9.9						
53700-96	110 VDC			211						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

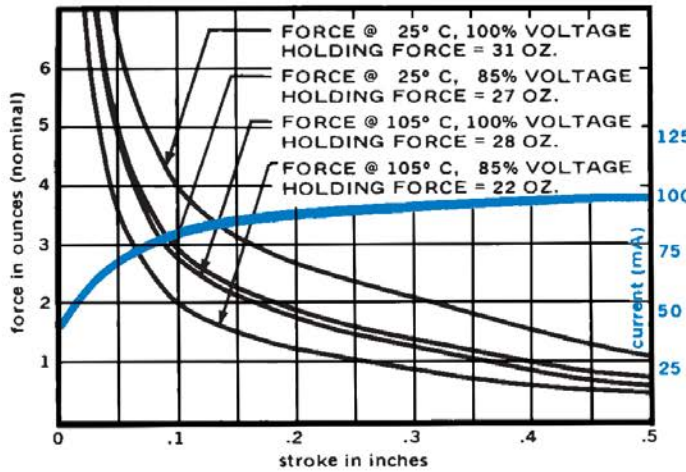


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	6.5 VA Continuous, 8.5 VA Intermittent, 60 VA Pulse 4.2 Watts Continuous, 9.6 Watts Intermittent, 40 Watts Pulse
Coil Termination	.110" quick connect terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.130" (L) x 0.750" (W) x 0.750" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 3
Plunger Diameter	0.250"
Plunger Guide Material	Plastic
Mounting	2X #4-40 UNC-2B Mounting Holes
Weight	Plunger - 0.25 oz., Total - 1.50 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105

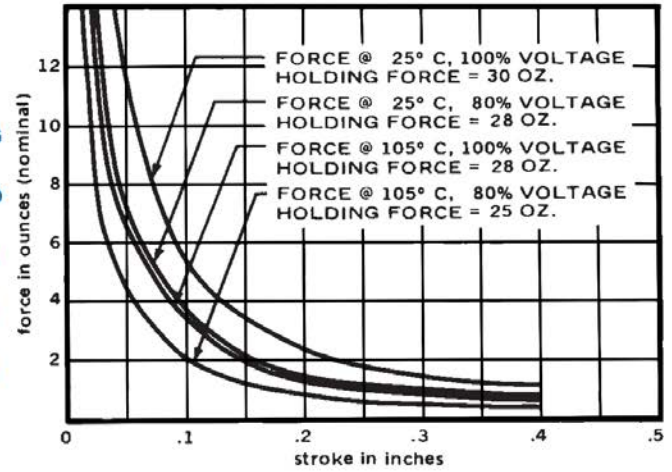
All dimensions in Inches

Force Curves

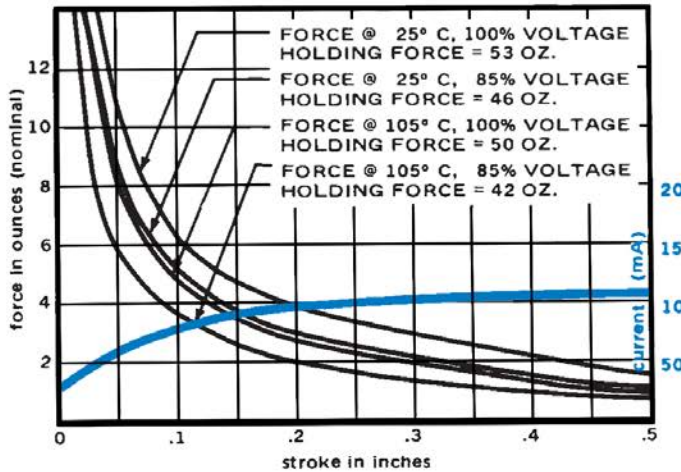
AC Continuous Duty - 6.5 VA



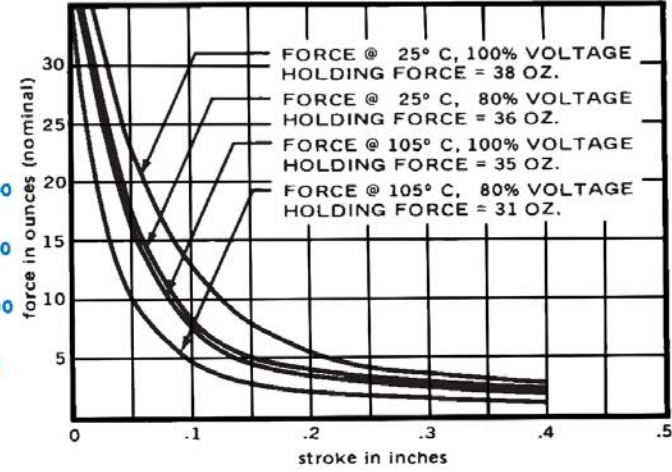
DC Continuous Duty - 4.2 Watts



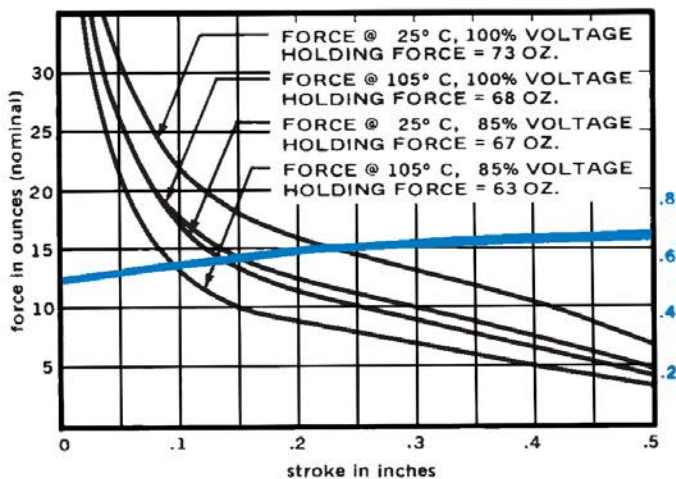
AC Intermittent Duty - 8.5 VA



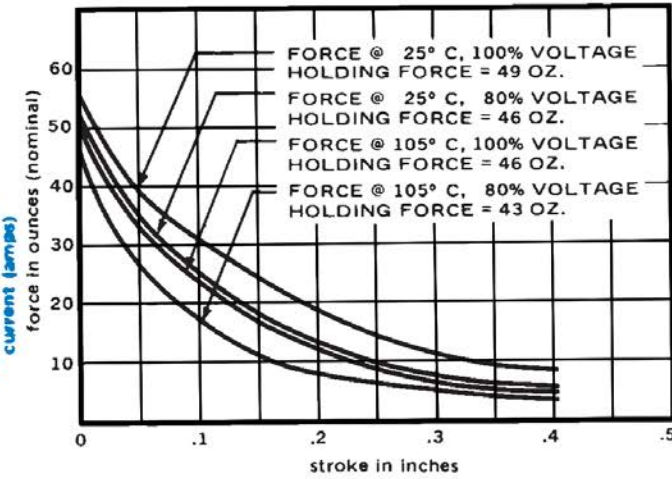
DC Intermittent Duty - 9.6 Watts



AC Pulse Duty - 60 VA



DC Pulse Duty - 40 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53724-80	6 VAC	Continuous	6.5 VA	2.75	Pull	31	3.5	2.4	1	0
53724-81	12 VAC			10.9						
53724-82	24 VAC			43.4						
53724-84	120 VAC			1090						
53724-85	240 VAC			4300						
53724-86	6 VAC	Intermittent	8.5 VA	1.7	Pull	53	5.2	3.3	1.5	0
53724-87	12 VAC			7.0						
53724-88	24 VAC			27.4						
53724-90	120 VAC			724						
53724-91	240 VAC			2880						
53724-92	6 VAC	Pulse	60 VA	0.420	Pull	73	19	14	7	0
53724-93	12 VAC			1.7						
53724-94	24 VAC			27.4						
53724-96	120 VAC			173						
53724-97	240 VAC			724						
53723-80	6 VDC	Continuous	4.2 Watts	8.7	Pull	30	4	1.8	0	0
53723-81*	12 VDC			35.0						
53723-82*	24 VDC			141						
53723-84	110 VDC			2880						
53723-86	6 VDC	Intermittent	9.6 Watts	3.8	Pull	38	10	4	0	0
53723-87	12 VDC			14.8						
53723-88	24 VDC			60						
53723-90	110 VDC			1274						
53723-92	6 VDC	Pulse	40 Watts	0.91	Pull	49	27	15	0	0
53723-93	12 VDC			3.8						
53723-94	24 VDC			14.8						
53723-96	110 VDC			302						

(*) Normally Stocked
 Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models

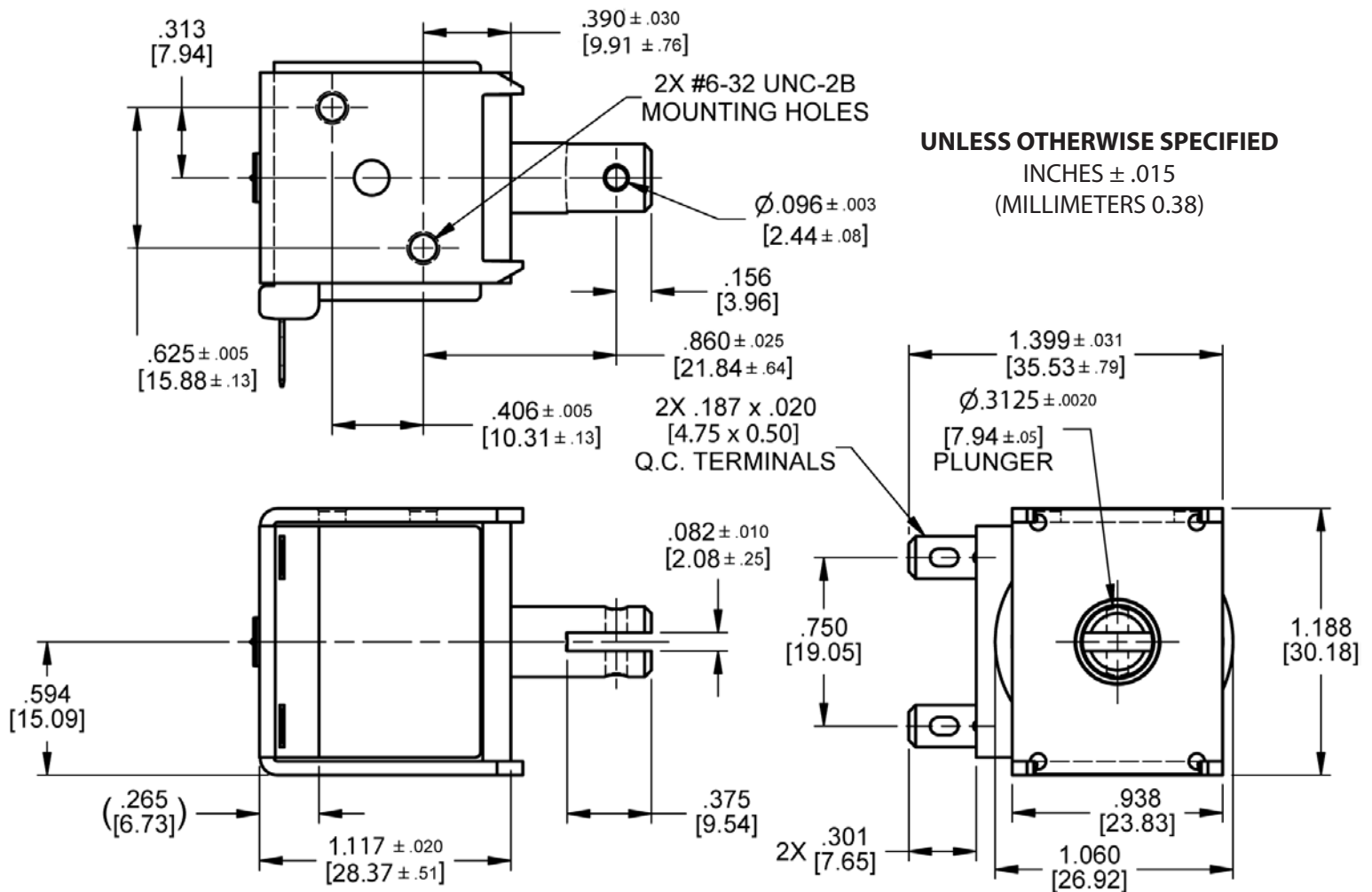


Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	8 VA Continuous, 21 VA Intermittent, 80 VA Pulse 5.5 Watts Continuous, 11.5 Watts Intermittent, 55 Watts Pulse
Coil Termination	.187" quick connect terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.125" (H) x 0.938" (W) x 1.188" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 3
Plunger Diameter	0.3125"
Plunger Guide Material	Plastic
Mounting	2X #6-32 UNC-2B Mounting Holes
Weight	Plunger - 0.48 oz., Total - 3.13 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D

All dimensions in Inches

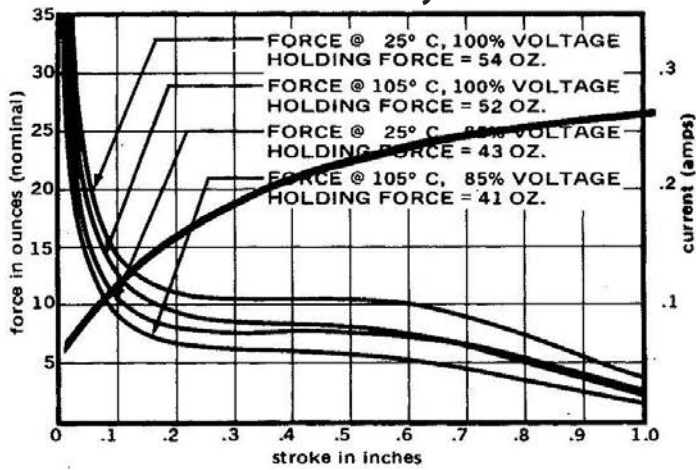
Dimensional View

Units: Inches [mm]

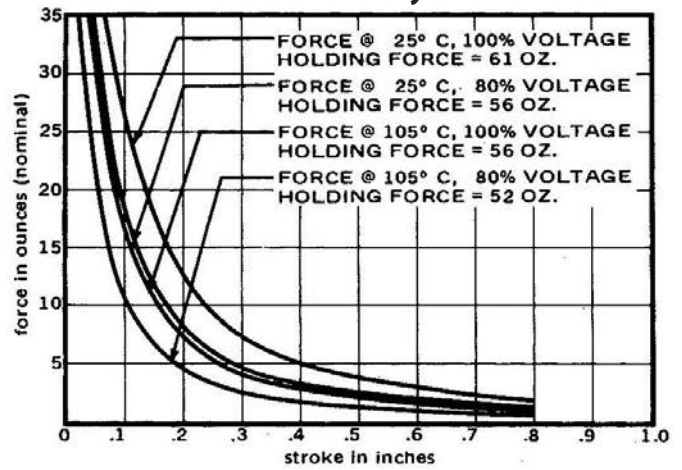


Force Curves

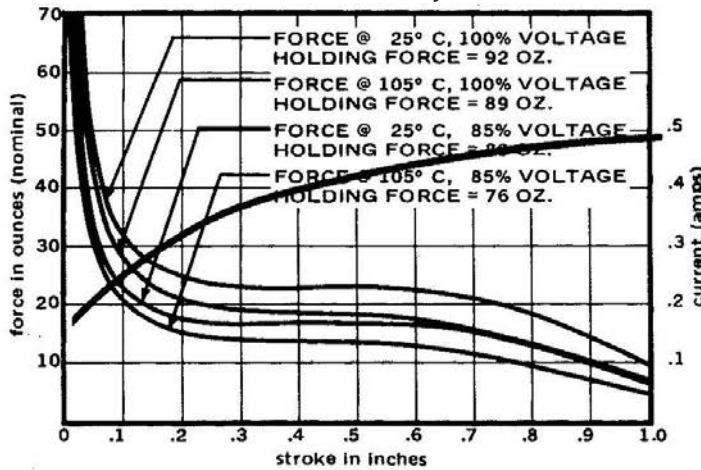
AC Continuous Duty - 8 VA



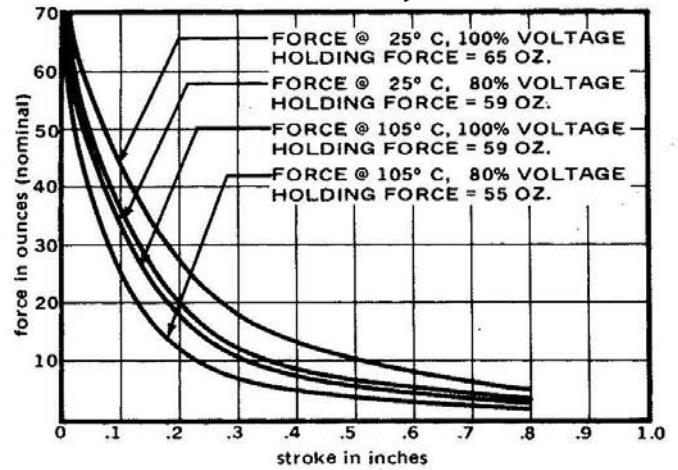
DC Continuous Duty - 5.5 Watts



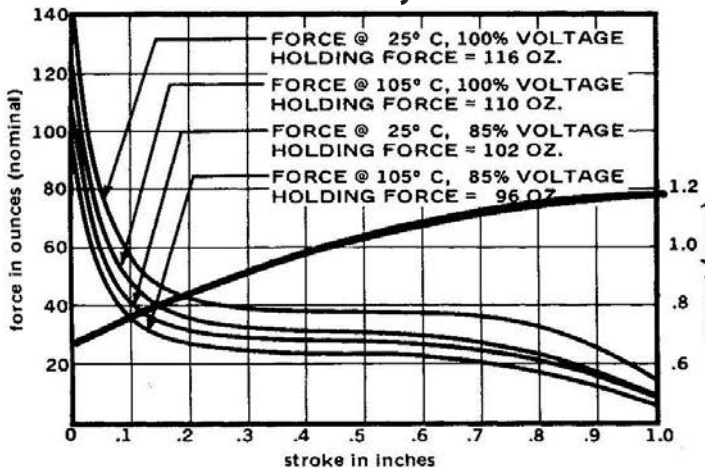
AC Intermittent Duty - 21 VA



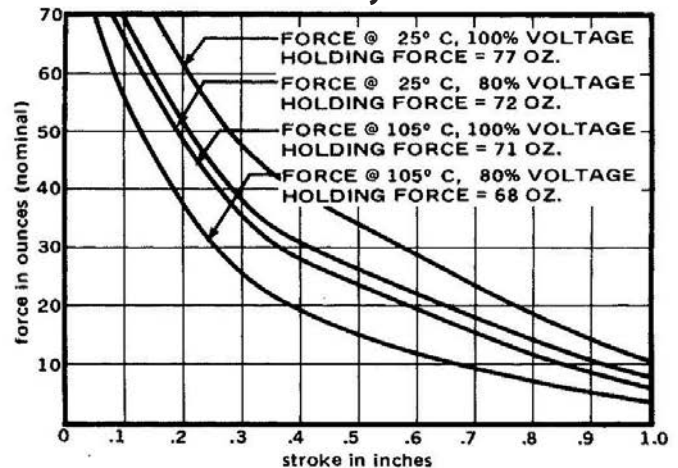
DC Intermittent Duty - 11.5 Watts



AC Pulse Duty - 80 VA



DC Pulse Duty - 55 Watts



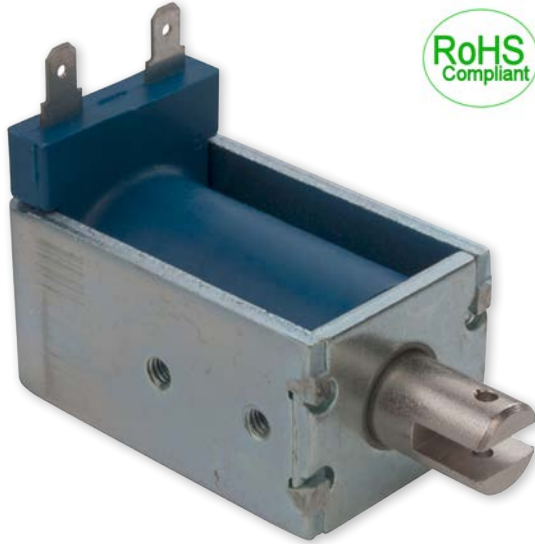
Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53706-80	6 VAC	Continuous	8 VA	1.00	Pull	54	13	11	11	8
53706-81	12 VAC			4.05						
53706-82	24 VAC			16.2						
53706-84*	120 VAC			420						
53706-85	240 VAC			1700						
53706-86	6 VAC	Intermittent	21 VA	0.54	Pull	92	28	23	23	20
53706-87	12 VAC			2.13						
53706-88	24 VAC			8.9						
53706-90*	120 VAC			220						
53706-91	240 VAC			890						
53706-92	6 VAC	Pulse	80 VA	.22	Pull	116	51	40	38	35
53706-93	12 VAC			.90						
53706-94	24 VAC			3.7						
53706-96	120 VAC			94.4						
53706-97	240 VAC			381						
53708-80	6 VDC	Continuous	5.5 Watts	6.6	Pull	61	22	8	4	2.5
53708-81*	12 VDC			27.1						
53708-82*	24 VDC			108						
53708-84	110 VDC			2250						
53708-86	6 VDC	Intermittent	11.5 Watts	3.2	Pull	65	38	22	10	6
53708-87*	12 VDC			12.7						
53708-88*	24 VDC			51						
53708-90	110 VDC			1040						
53708-92	6 VDC	Pulse	55 Watts	0.67	Pull	77	75	54	34	21
53708-93	12 VDC			2.7						
53708-94	24 VDC			11						
53708-96	110 VDC			220						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- Encapsulated coils on most models
- UL approval on many models



Electrical Specifications	
Coil Voltages	6, 12, 24, 120, 240 VAC 6, 12, 24, 110 VDC
Coil Power	13 VA Continuous, 37 VA Intermittent, 120 VA Pulse 8.5 Watts Continuous, 21 Watts Intermittent, 85 Watts Pulse
Coil Termination	.187" quick connect terminals (standard) Wire leads optional with tape wrapped coil
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class F Rating - 155°C (311°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.015" (L) x 1.000" (W) x 1.218" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 3
Plunger Diameter	0.4375"
Plunger Guide Material	Plastic
Mounting	2X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.06 oz., Total - 7 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D	

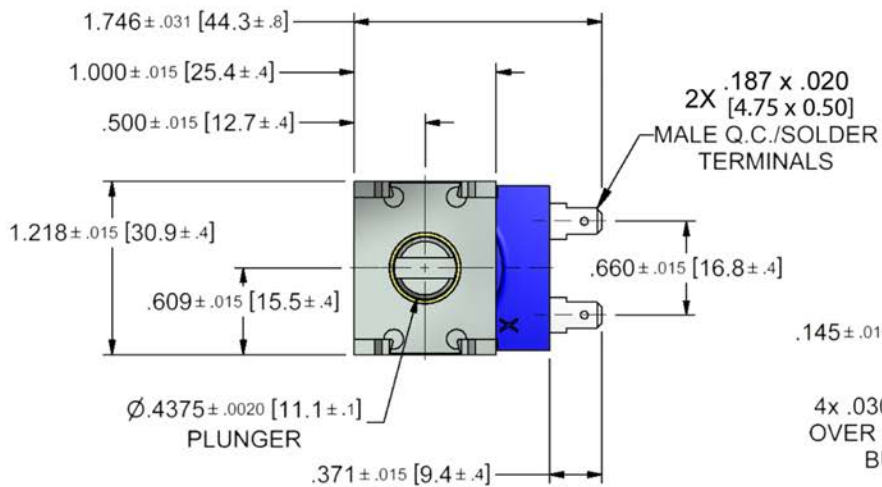
All dimensions in Inches

D-30

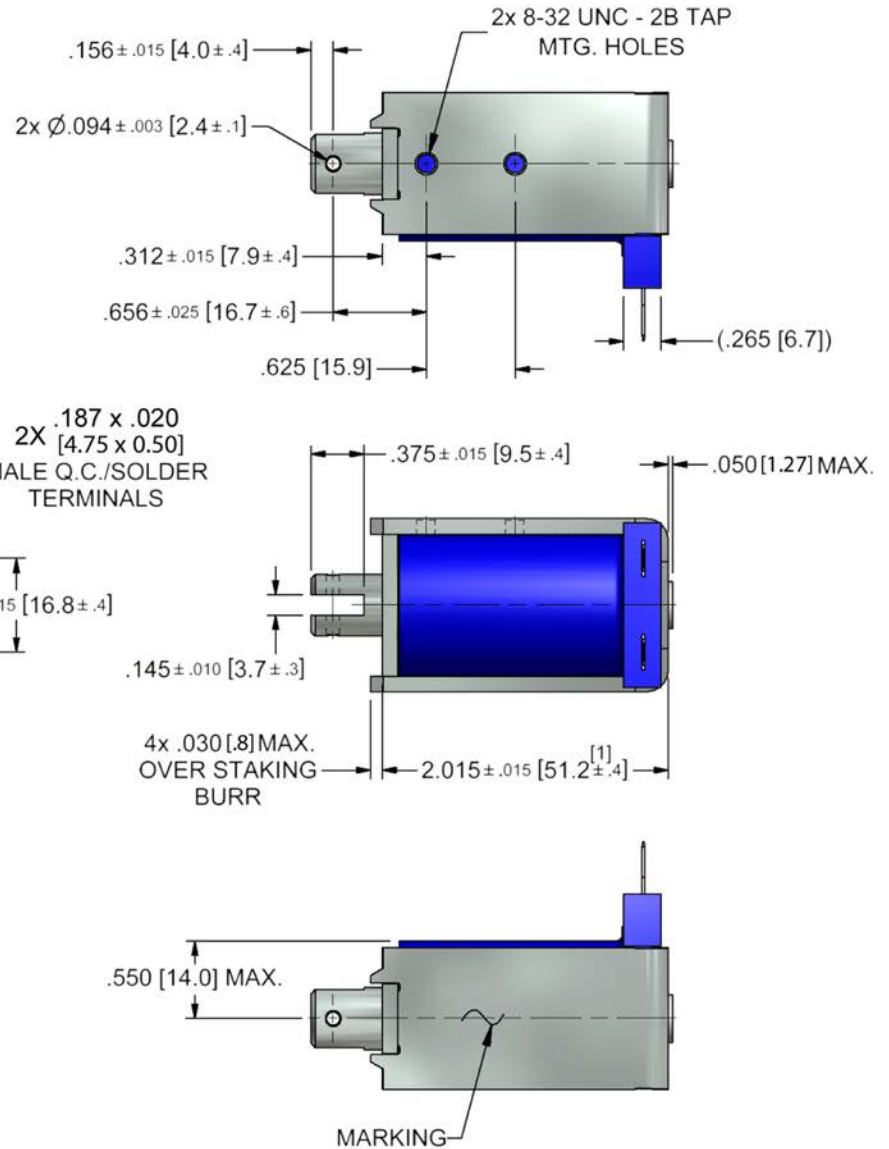
Dimensional View

Units: Inches [mm]

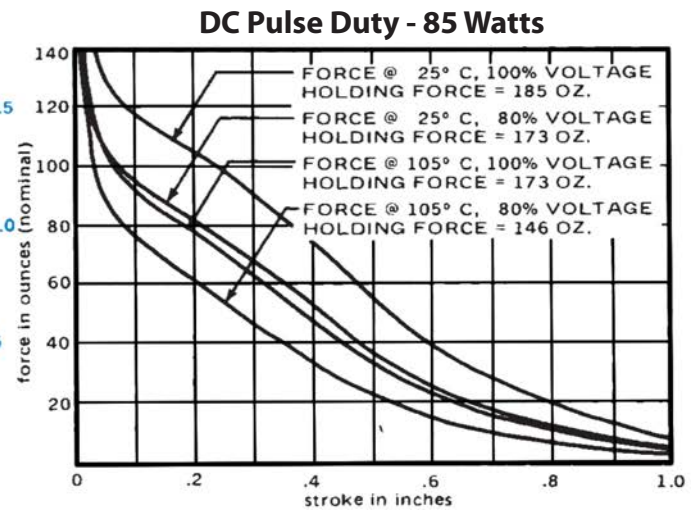
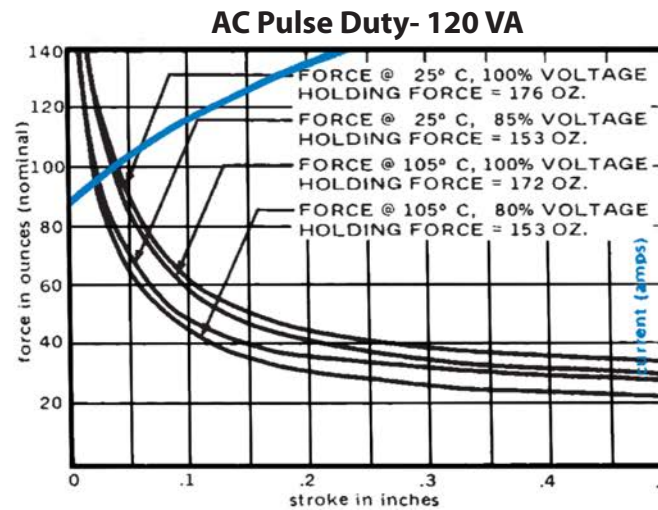
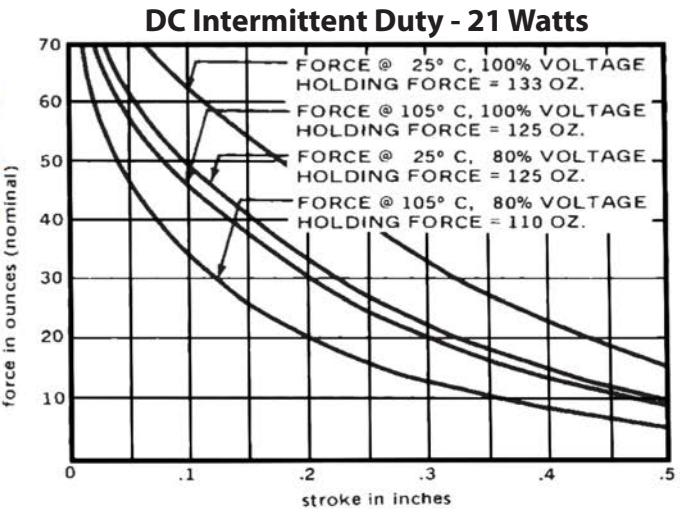
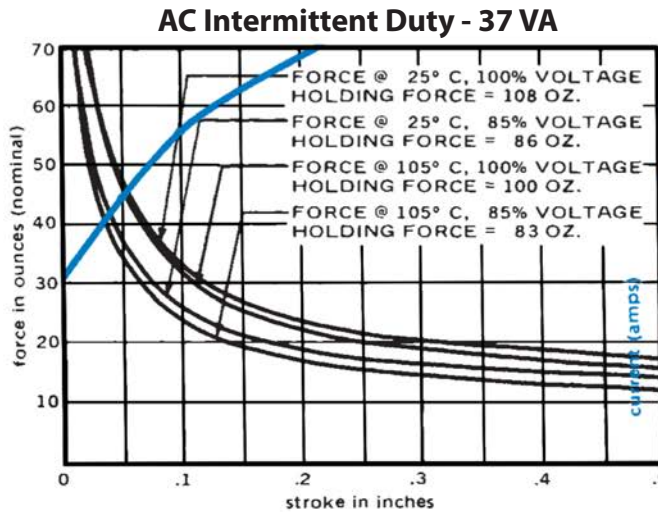
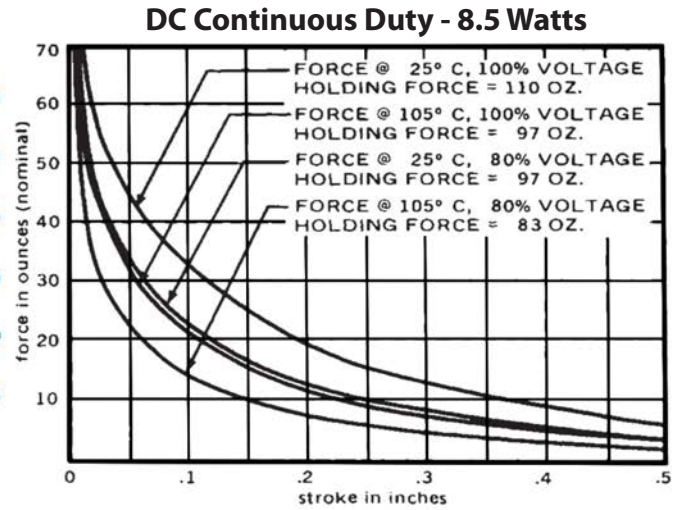
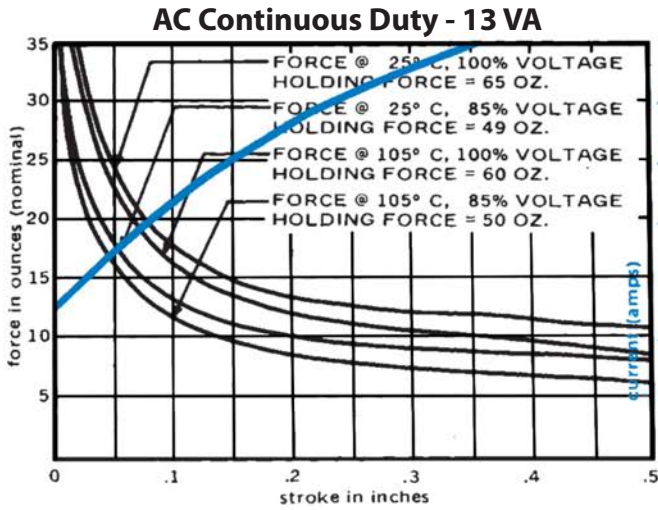
UNLESS OTHERWISE SPECIFIED
INCHES $\pm .015$
(MILLIMETERS 0.38)



UNLESS OTHERWISE SPECIFIED
INCHES $\pm .015$
(MILLIMETERS 0.38)



Force Curves



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53748-80	6 VAC	Continuous	13 VA	0.41	Pull	65	16.5	13	11	0
53748-81	12 VAC			1.65						
53748-82	24 VAC			6.71						
53748-84	120 VAC			172						
53748-85	240 VAC			700						
53748-87	12 VAC	Intermittent	37 VA	0.871	Pull	108	29	21	17	0
53748-88	24 VAC			3.78						
53748-90	120 VAC			86.2						
53748-91	240 VAC			353						
53748-93	12 VAC	Pulse	120 VA	0.43	Pull	176	55	40	33	0
53748-94	24 VAC			1.73						
53748-96	120 VAC			45.5						
53748-97	240 VAC			182						
53749-80	6 VDC	Continuous	8.5 Watts	4.27	Pull	110	28	15	6	0
53749-81*	12 VDC			17.7						
53749-82*	24 VDC			69.8						
53749-84	110 VDC			1470						
53749-86	6 VDC	Intermittent	21 Watts	1.65	Pull	133	58	40	16	0
53749-87*	12 VDC			6.71						
53749-88*	24 VDC			26.8						
53749-90	110 VDC			538						
53749-92	6 VDC	Pulse	85 Watts	0.41	Pull	185	115	97	55	23
53749-93	12 VDC			1.65						
53749-94	24 VDC			6.71						
53749-96	110 VDC			148						

(*) Normally Stocked

Non stocked items require a minimum order

D-FRAME SOLENOID



Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- UL approval on many models



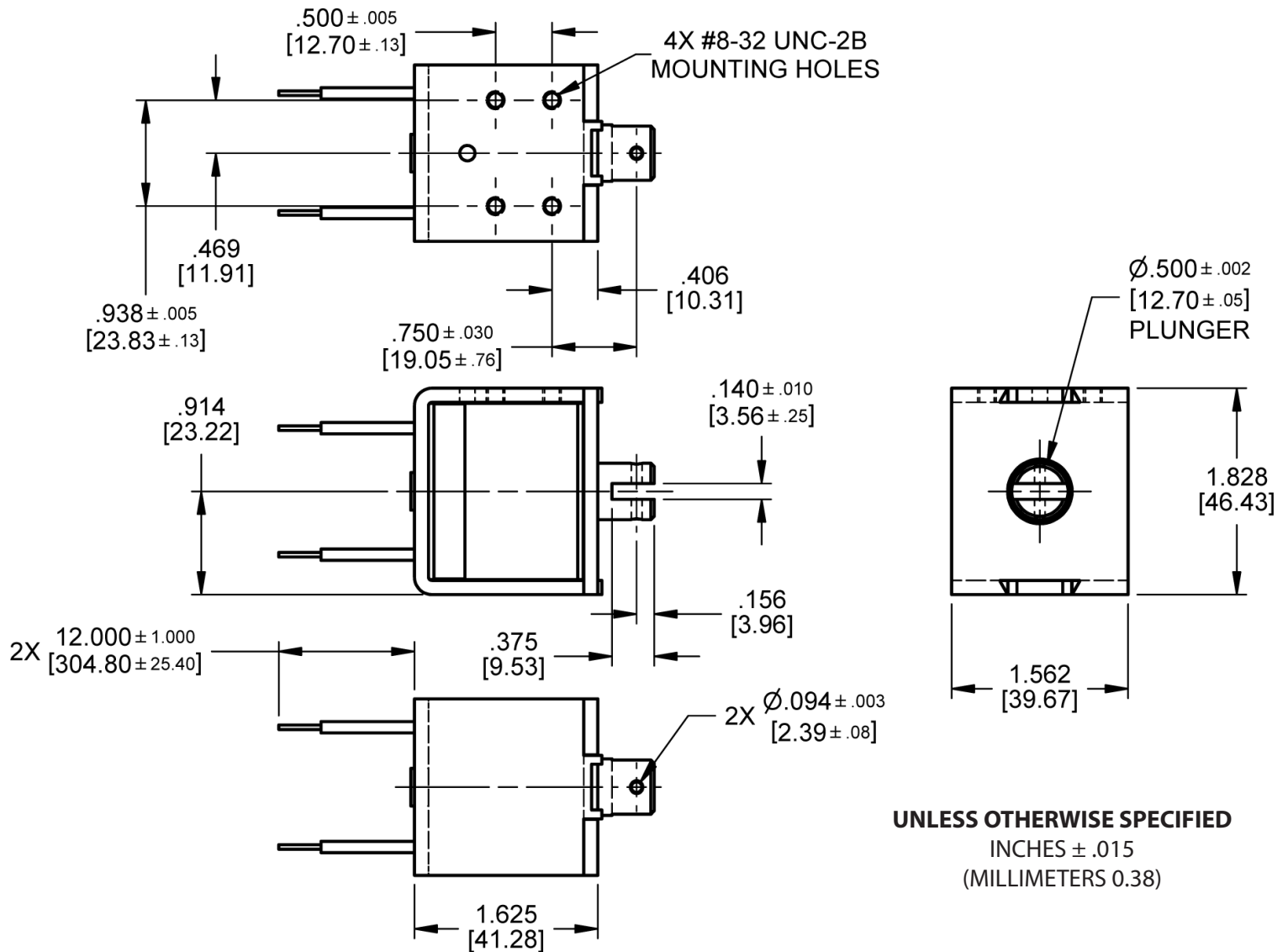
Electrical Specifications	
Coil Voltages	12, 24, 120, 240 VAC, 6, 12, 24, 110 VDC
Coil Power	14 VAC Continuous, 53 VA Intermittent, 140 VA Pulse 10 Watts Continuous, 25 Watts Intermittent, 100 Watts Pulse
Coil Termination	Wire leads (standard)
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class B Rating - 130°C (266°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.625" (L) x 1.562" (W) x 1.828" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 3
Plunger Diameter	0.500"
Plunger Guide Material	Plastic
Mounting	4X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.27 oz., Total - 12 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130

All dimensions in Inches

D-50

Dimensional View

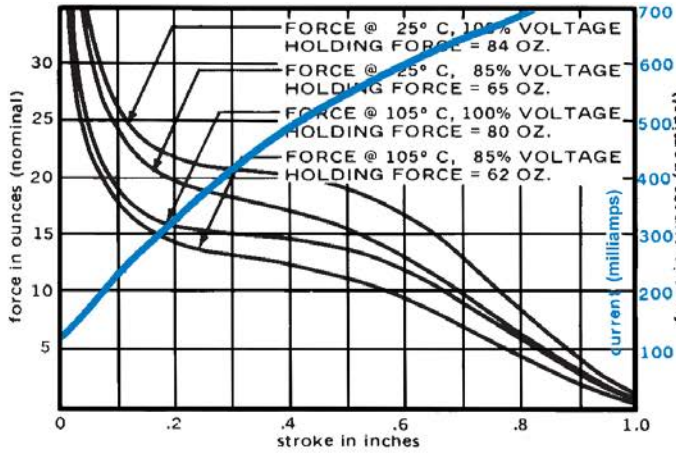
Units: Inches [mm]



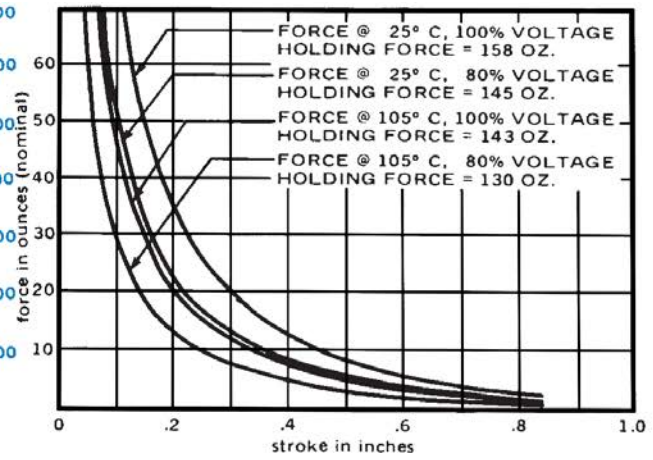
UNLESS OTHERWISE SPECIFIED
INCHES ± .015
(MILLIMETERS 0.38)

Force Curves

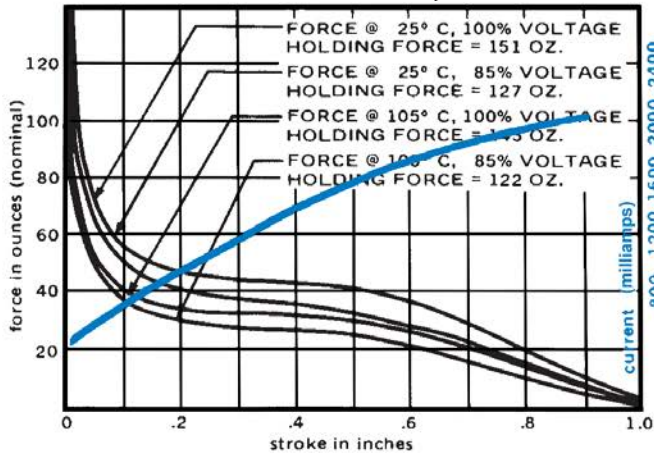
AC Continuous Duty - 14 VA



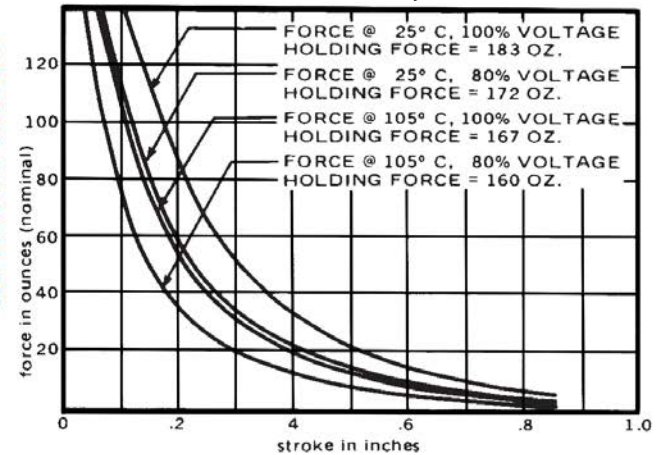
DC Continuous Duty - 10 Watts



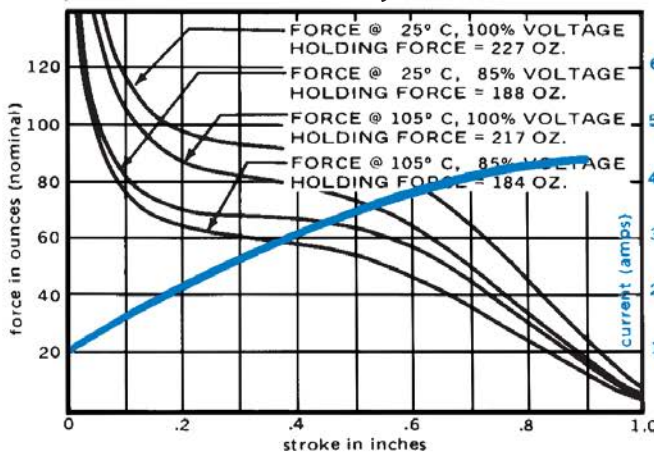
AC Intermittent Duty - 53 VA



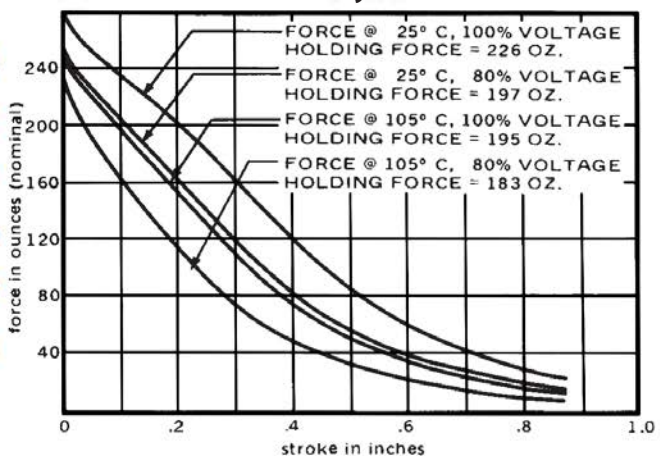
DC Intermittent Duty - 25 Watts



AC Pulse Duty - 140 VA



DC Pulse Duty - 100 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
51053-81	12 VAC	Continuous	14 VA	.95	Pull	84	24	21	19	10
51053-83	24 VAC			3.8						
51053-94	120 VAC			97.4						
51053-97	240 VAC			392						
51014-83	24 VAC	Intermittent	53 VA	1.55	Pull	151	52	46	40	24
51014-94	120 VAC			40.7						
50014-97	240 VAC			162						
53699-83	24 VAC	Pulse	140 VA	0.70	Pull	227	10	994	90	54
53699-94	120 VAC			18.1						
53699-97	240 VAC			72.7						
51051-80	6 VDC	Continuous	10 Watts	3.77	Pull	158	60	25	8	4
51051-81	12 VDC			14.5						
51051-83	24 VDC			58.2						
51051-93	110 VDC			1210						
50029-80	6 VDC	Intermittent	25 Watts	1.42	Pull	183	128	65	21	9
50029-81	12 VDC			5.7						
50029-83	24 VDC			23						
50029-93	110 VDC			486						
53744-80	6 VDC	Pulse	100 Watts	0.35	Pull	226	225	180	82	35
53744-81	12 VDC			1.42						
53744-82	24 VDC			5.7						
53744-84	110 VDC			121						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- AC solenoids and DC solenoids available
- UL approval on many models



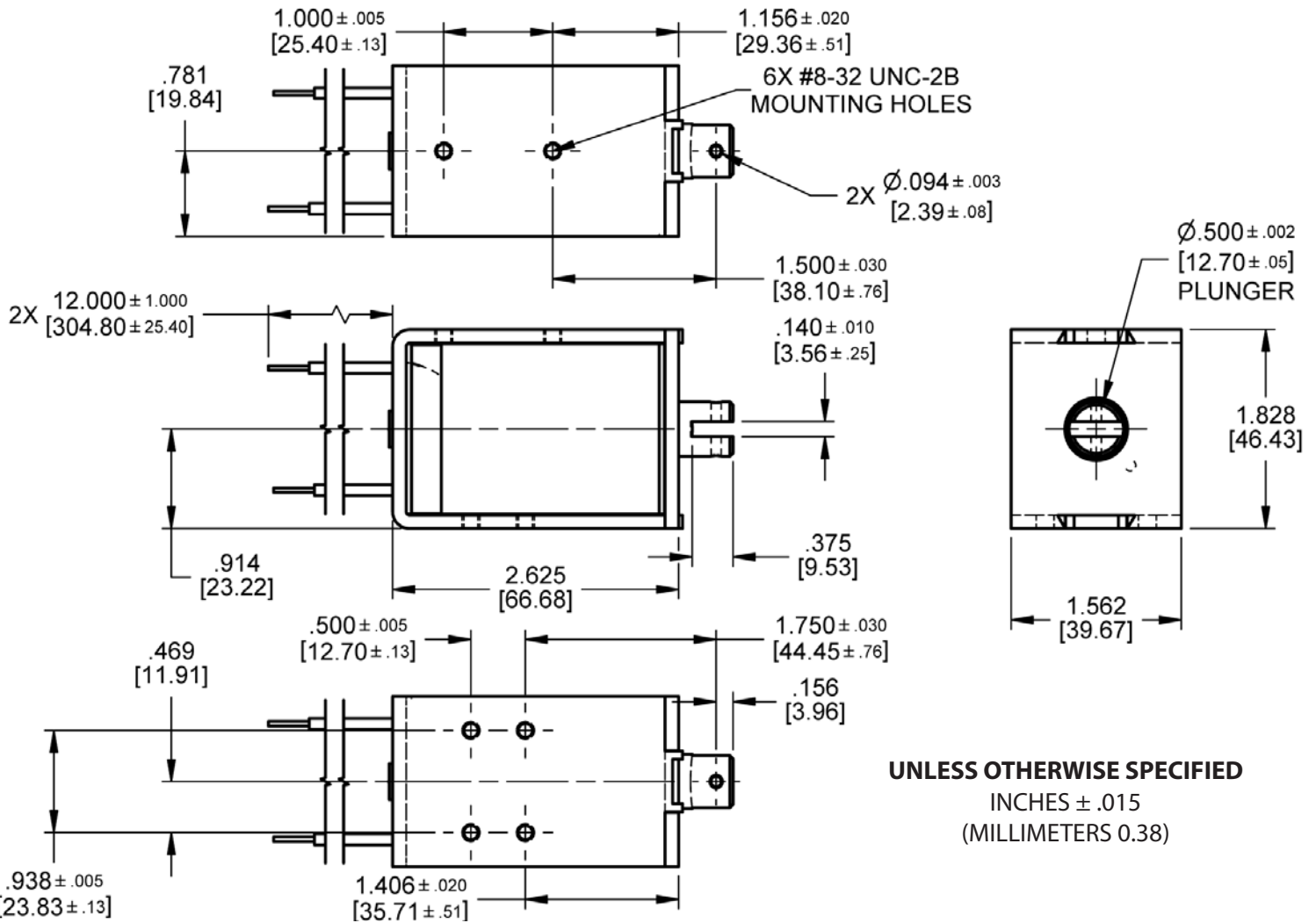
Electrical Specifications	
Coil Voltages	6, 12, 24, 110 VDC
Coil Power	13 Watts Continuous, 48 Watts Intermittent, 130 Watts Pulse
Coil Termination	Wire leads (standard)
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Tape wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class B Rating - 130°C (266°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.625" (L) x 1.562" (W) x 1.828" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 3
Plunger Diameter	0.500"
Plunger Guide Material	Plastic
Mounting	6X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.92 oz., Total - 19 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130

All dimensions in Inches

D-70

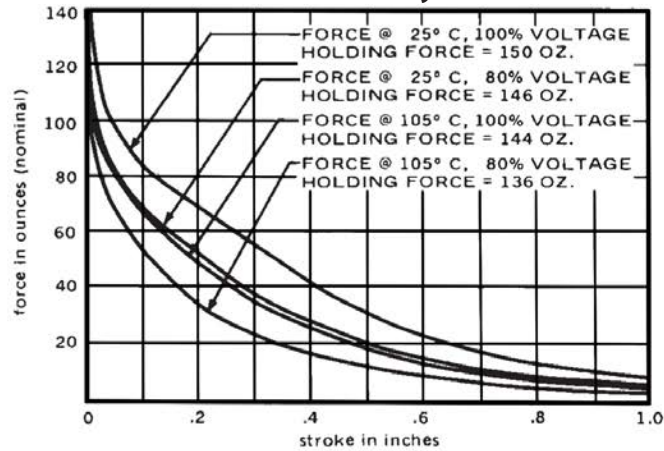
Dimensional View

Units: Inches [mm]

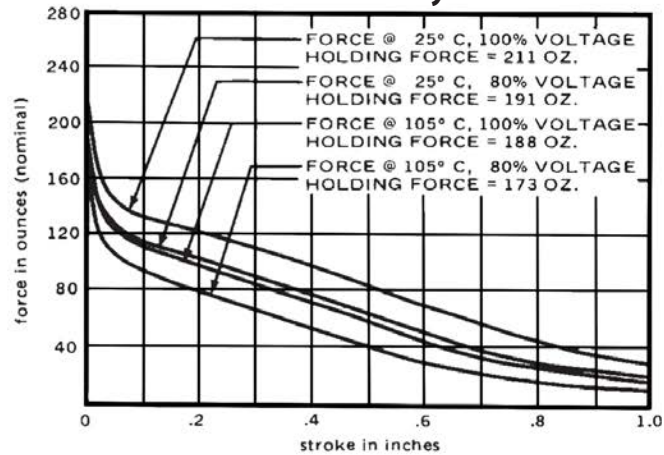


Force Curves

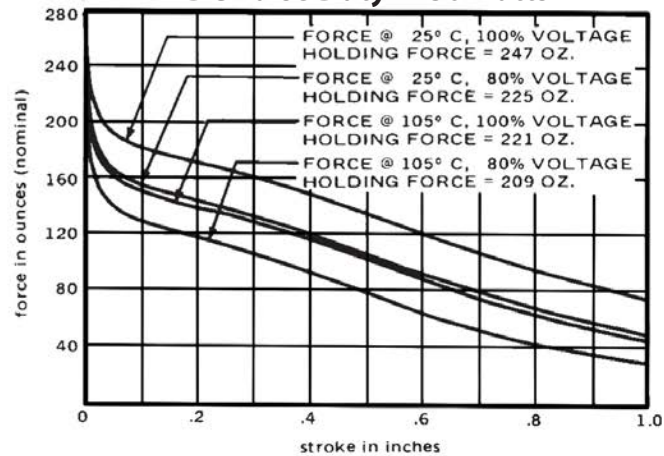
DC Continuous Duty - 13 Watts



DC Intermittent Duty - 48 Watts



DC Pulse Duty - 130 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".

NOTE: Approx 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
50046-80	6 VDC	Continuous	13 Watts	2.75	Pull	150	79	62	30	15
50046-81*	12 VDC			11						
50046-83*	24 VDC			44.3						
50046-93*	110 VDC			940						
50031-80	6 VDC	Intermittent	48 Watts	0.75	Pull	211	130	112	82	50
50031-81*	12 VDC			3.0						
50031-83*	24 VDC			12.0						
50031-93*	110 VDC			254						
53714-81	12 VDC	Pulse	130 Watts	1.1	Pull	247	180	165	135	100
53714-83	24 VDC			4.5						
53714-93	110 VDC			92						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- DC solenoids available
- UL approval on many models

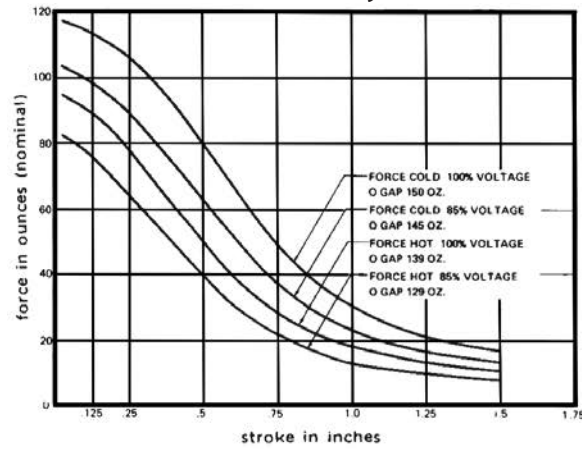


Electrical Specifications	
Coil Voltages	6, 12, 24, 110 VDC
Coil Power	23 Watts Continuous, 58 Watts Intermittent, 230 Watts Pulse
Coil Termination	Wire leads (standard)
Duty Cycle	Continuous, intermittent and pulse duty available (see standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard) Class B Rating - 130°C (266°F) Max. (optional)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	3.540" (L) x 1.750" (W) x 1.940" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 3
Plunger Diameter	0.625"
Plunger Guide Material	Plastic
Mounting	12X #8-32 UNC-2B
Weight	Plunger - 4.3 oz., Total - 34 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105, S130	

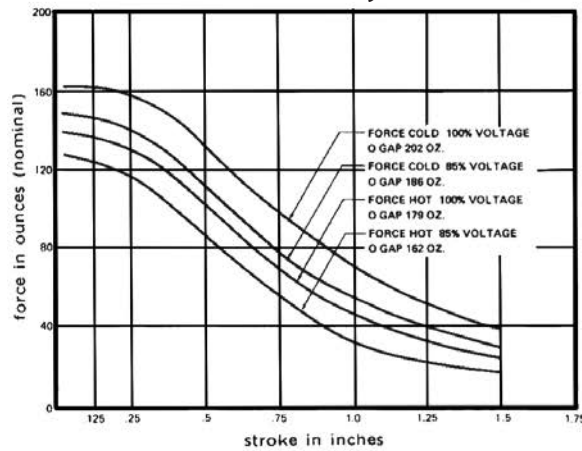
All dimensions in Inches

Force Curves

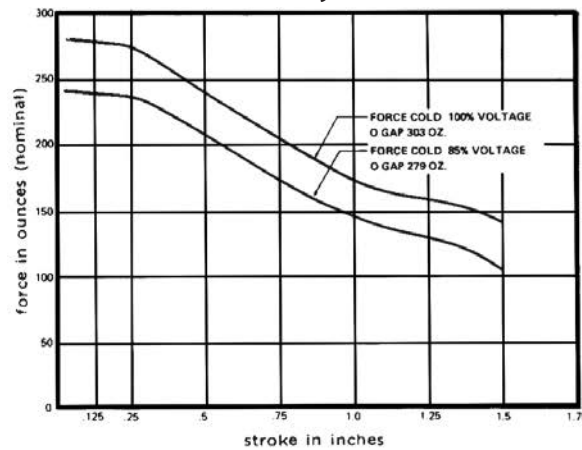
DC Continuous Duty - 23 Watts



DC Intermittent Duty - 58 Watts



DC Pulse Duty - 230 Watts



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine (9) minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".

NOTE: Approx 100 sq. in. Heat Sink Required

NOTE: Cold Force @ 25° C (77°F) Coil Temperature

Hot Force @ 110°C (230°F) Coil Temperature

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53654-80	6 VDC	Continuous	23 Watts	1.58	Pull	150	115	108	80	50
53654-81	12 VDC			6.3						
53654-83	24 VDC			25						
53654-93	110 VDC			506						
53655-81	12 VDC	Intermittent	58 Watts	2.2	Pull	202	162	158	133	100
53655-83	24 VDC			10.2						
53655-93	110 VDC			204						
53656-81	12 VDC	Pulse	230 Watts	0.6	Pull	303	280	275	235	205
53656-83	24 VDC			2.2						
53656-96	110 VDC			51						

(*) Normally Stocked

Non stocked items require a minimum order



D-FRAME SOLENOID

Two position linear solenoid with D-frame construction.

Features

- Balance of cost and performance
- DC solenoids available

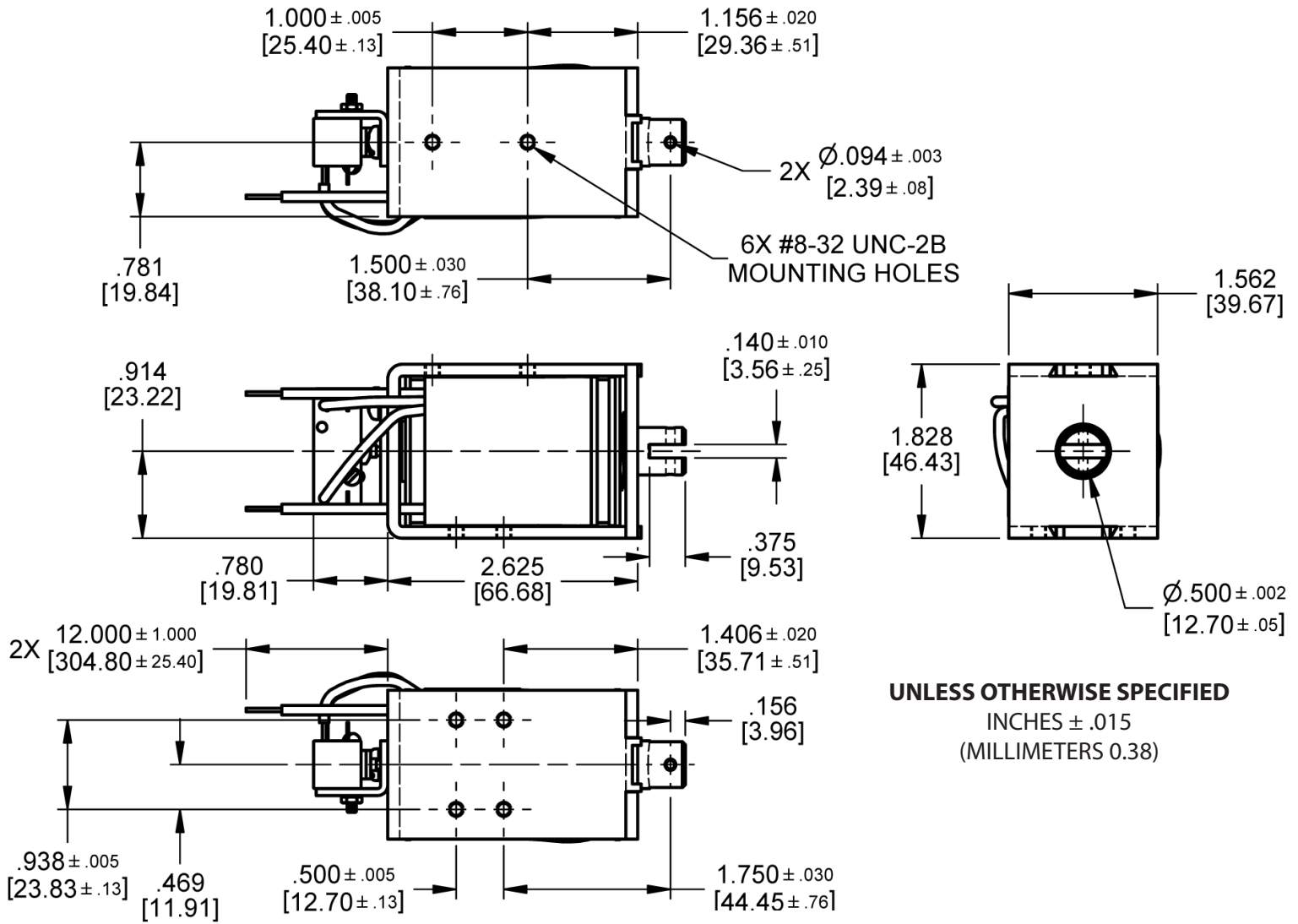
Electrical Specifications	
Coil Voltages	6, 12, 24, 28, 32, 36, 48, 90, 115 VDC
Coil Power	150 Watts Continuous
Coil Termination	Wire leads (standard)
Duty Cycle	Continuous
Coil Treatment	Tape Wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max. (standard)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.625" (L) x 1.562" (W) x 1.828" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 2
Plunger Diameter	0.500"
Plunger Guide Material	Brass
Mounting	6X #8-32 UNC-2B Mount Holes
Weight	Plunger - 1.91 oz., Total - 19 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approval	

All dimensions in Inches

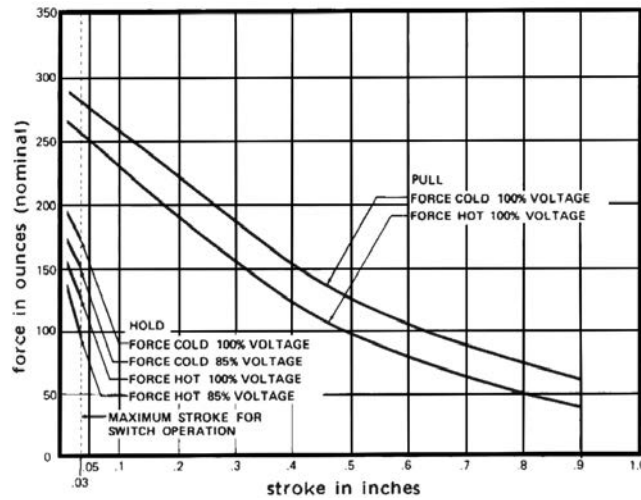
PS-75

Dimensional View

Units: Inches [mm]

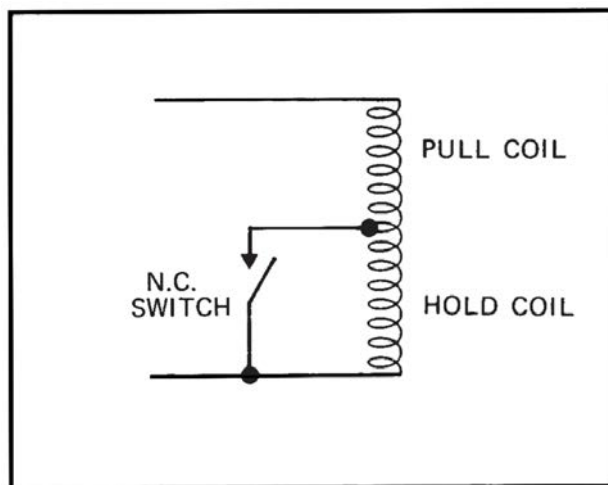


Force Curve



Schematic

(With plunger at 0 stroke)



Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
51073-80	6 VDC	Continuous	150 Watt	0.24 Pull 2.75 Hold	Pull	200	250	205	125	80
51073-81*	12 VDC			0.96 Pull 11 Hold						
51073-83*	24 VDC			3.84 Pull 44.2 Hold						
51073-85	28 VDC			5.2 Pull 60 Hold						
51073-87	32 VDC			6.8 Pull 78.6 Hold						
51073-88	36 VDC			8.6 Pull 99 Hold						
51073-89	48 VDC			15.4 Pull 176.6 Hold						
51073-90	90 VDC			54 Pull 620 Hold						
51073-93	115 VDC			88 Pull 1020 Hold						

(*) Normally Stocked

Non stocked items require a minimum order

MED 12x1.500



TUBULAR FRAME SOLENOID

Two position linear solenoid with tubular construction.



Features

- High performance construction
- DC solenoids applications only
- Standard push and pull versions available
- UL approval on many models



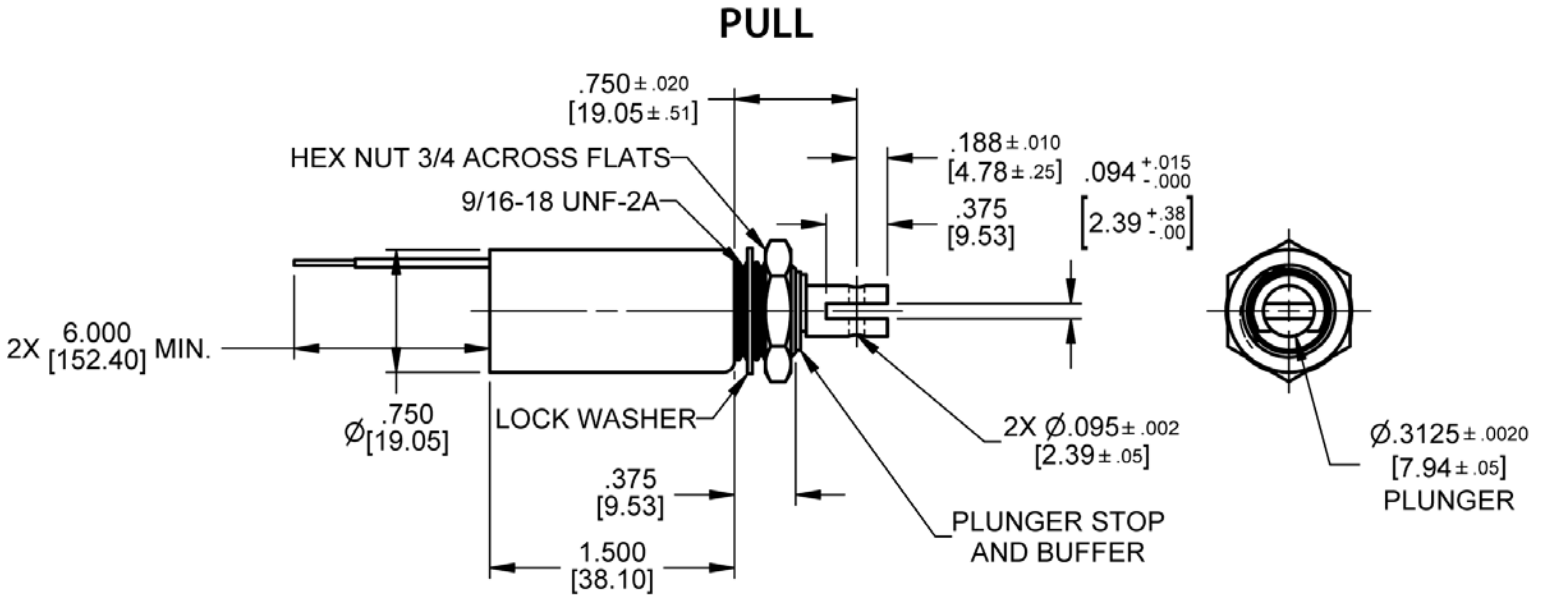
Electrical Specifications	
Coil Voltages	6, 12, 24, 115 VDC
Coil Power	6 Watts Continuous, 15 Watts Intermittent, 58 Watts Pulse
Coil Termination	Wire leads 24 AWG (standard)
Duty Cycle	Continuous, intermittent, pulse (see standard part numbers on page 4)
Coil Treatment	Tape wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.500" (L) x Ø0.750" (D)
Forces	See force curves on page 3
Plunger Diameter	Ø.3125"
Plunger Guide Material	Plastic
Mounting	0.750" Hex Nut
Weight	Plunger - 0.75 oz., Total - 2.56 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105

All dimensions in Inches

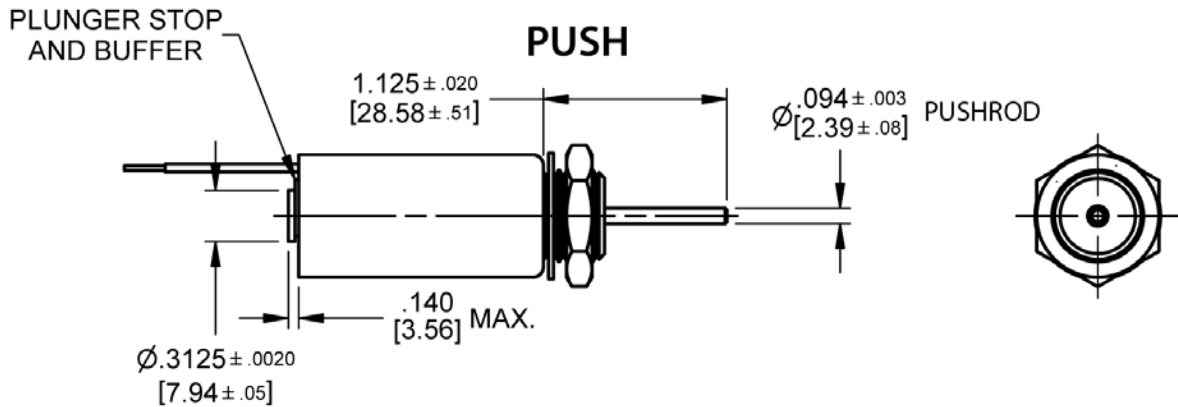
MED 12x1.500

Dimensional View

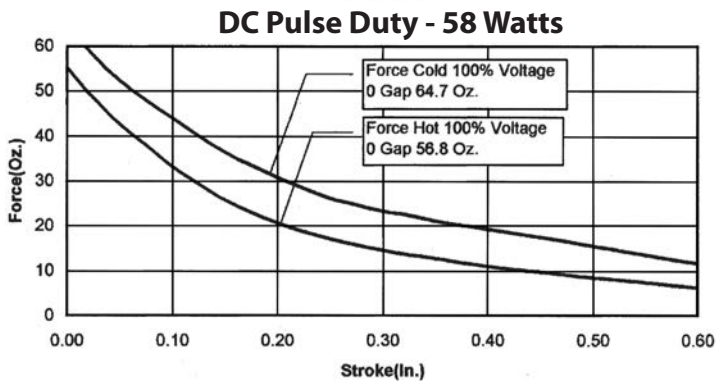
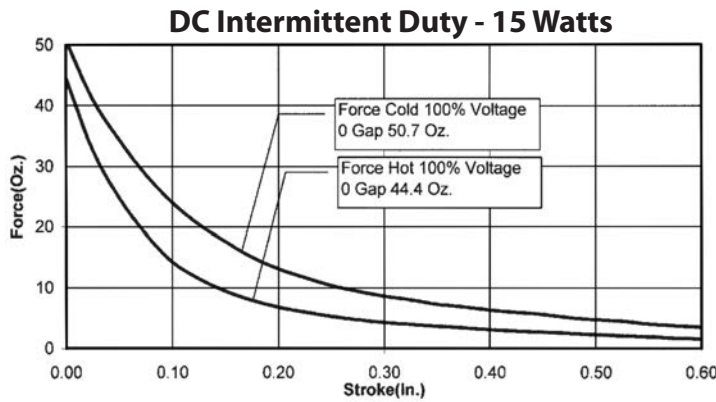
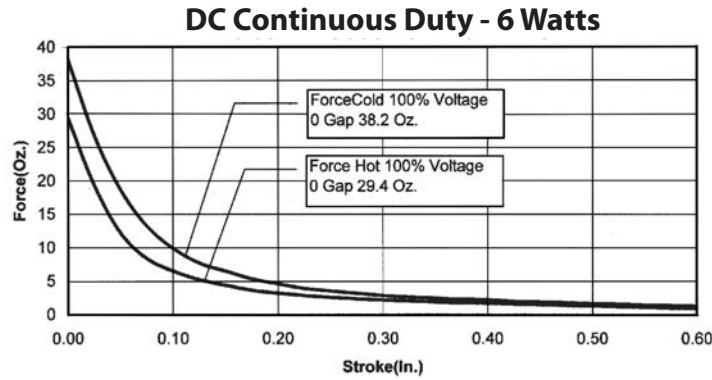
Units: Inches [mm]



UNLESS OTHERWISE SPECIFIED
INCHES ± .015
(MILLIMETERS 0.38)



Force Curves



Standard intermittent duty cycle at nominal voltage is one (1) minute "ON" and three (3) minutes "OFF". Standard pulse duty cycle is 100 milliseconds "ON" and 900 milliseconds "OFF".

Note:

Cold Force @ 25°C (77°F) Cold Temperature
Hot Force @ 130°C (266°F) Coil Temperature
Approx. 16 sq. in. Heat Sink Required

MED 12x1.500



Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53751-80	6 VDC	Continuous	6 Watts	6.2	Pull	38	7.5	3	1.5	0
53761-80	6 VDC			6.2	Push					
53751-81*	12 VDC			25	Pull					
53761-81*	12 VDC			25	Push					
53751-82*	24 VDC			100	Pull					
53761-82*	24 VDC			100	Push					
53751-84	115 VDC			2500	Pull					
53761-84	115 VDC			2500	Push					
53751-86	6 VDC	Intermittent	15 Watts	2.5	Pull	50	20	10	4	0
53761-86	6 VDC			2.5	Push					
53751-87*	12 VDC			10	Pull					
53761-87*	12 VDC			10	Push					
53751-88*	24 VDC			40	Pull					
53761-88*	24 VDC			40	Push					
53751-90	115 VDC			1000	Pull					
53761-90	115 VDC			1000	Push					
53751-92	6 VDC	Pulse	58 Watts	0.62	Pull	64	40	26	16	0
53761-92	6 VDC			0.62	Push					
53751-93	12 VDC			2.5	Pull					
53761-93	12 VDC			2.5	Push					
53751-94	24 VDC			10	Pull					
53761-94	24 VDC			10	Push					
53751-96	115 VDC			250	Pull					
53761-96	115 VDC			250	Push					

(*) Normally Stocked

Non stocked items require a minimum order

MED 16x1.125

TUBULAR FRAME SOLENOID



Two position linear solenoid with tubular frame construction.

Features

- High performance construction
- DC solenoids applications only
- Standard push and pull versions available
- UL approval on many models



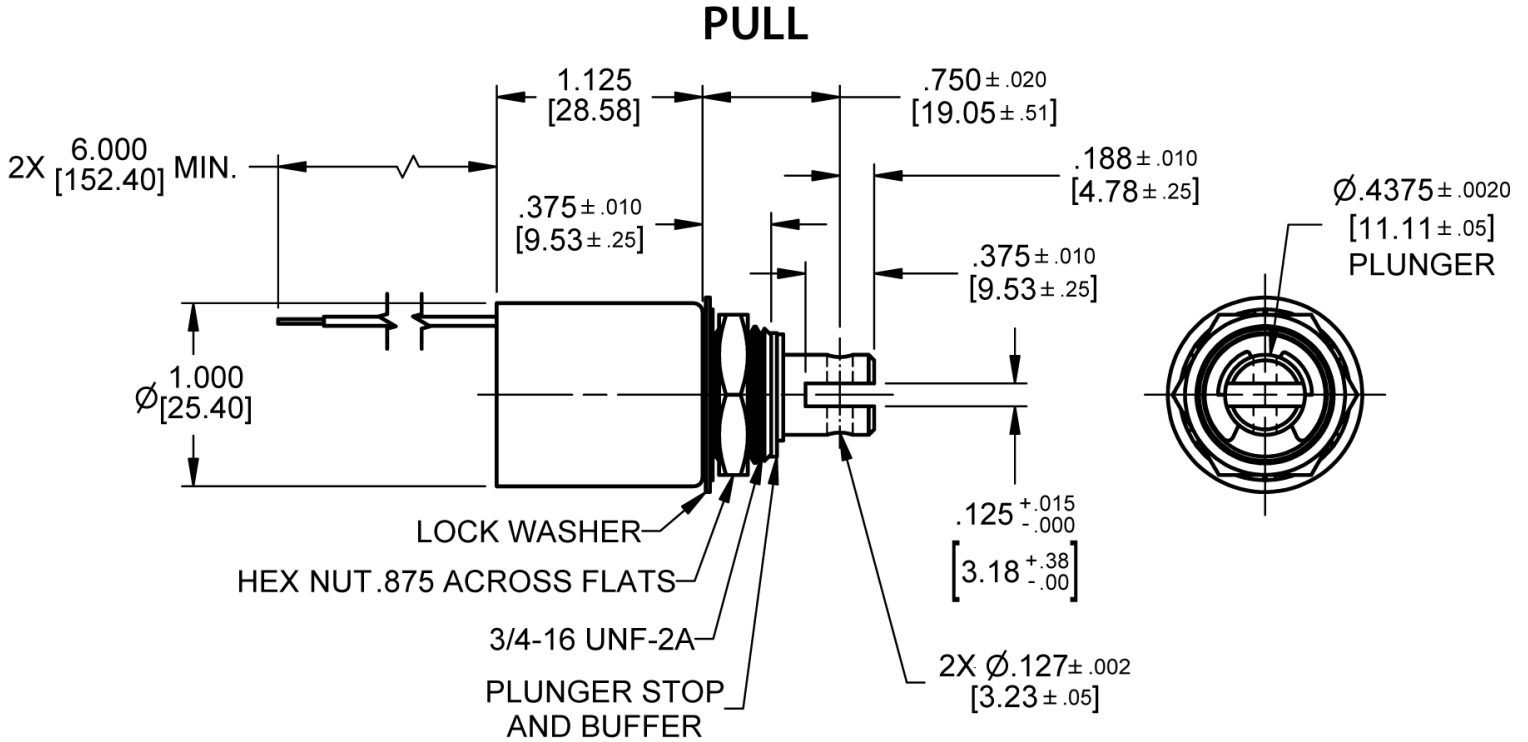
Electrical Specifications	
Coil Voltages	6, 12, 24, 115 VDC
Coil Power	8 Watts Continuous, 19 Watts Intermittent, 77 Watts Pulse
Coil Termination	Wire leads 24 AWG (standard)
Duty Cycle	Continuous, intermittent and pulse (See standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.125" (L) x Ø1.000" (D)
Forces	See force curves on page 3
Plunger Diameter	Ø.4375"
Plunger Guide Material	Plastic
Mounting	0.875" Hex Nut
Weight	Plunger - 1.05 oz, Total - 4.375 oz
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105	

All dimensions in Inches

MED 16x1.125

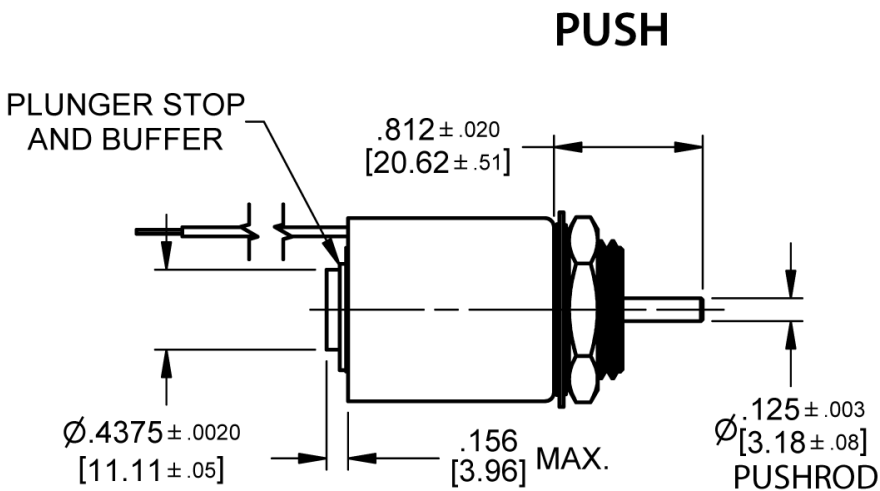
Dimensional View

Units: Inches [mm]

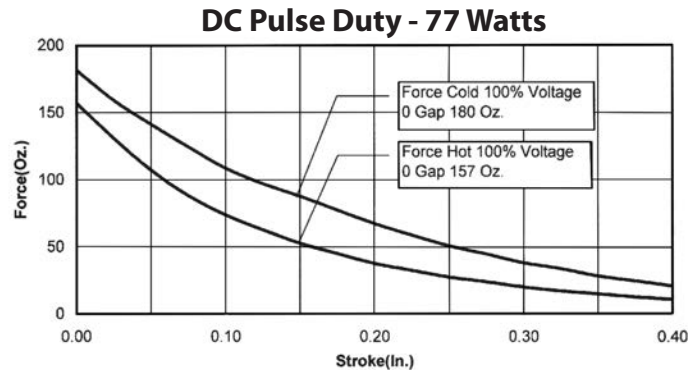
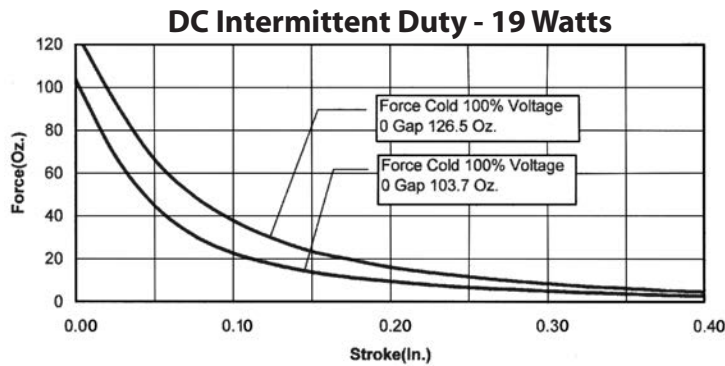
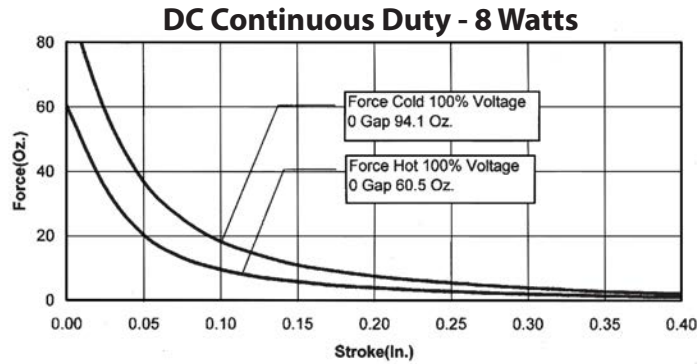


UNLESS OTHERWISE SPECIFIED

INCHES ± .015
(MILLIMETERS 0.38)



Force Curves



Standard intermittent duty cycle at nominal voltage is one (1) minute "ON" and three (3) minutes "OFF". Standard pulse duty cycle is 100 milliseconds "ON" and 900 milliseconds "OFF".

Note:

Cold Force @ 25°C (77°F) Cold Temperature
Hot Force @ 130°C (266°F) Coil Temperature
Approx. 36 sq. in. Heat Sink Required

MED 16x1.125



Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53754-80	6 VDC	Continuous	8 Watts	4.7	Pull	94	13	4	0	0
53759-80	6 VDC			4.7	Push					
53754-81*	12 VDC			19	Pull					
53759-81	12 VDC			19	Push					
53754-82*	24 VDC			75	Pull					
53759-82	24 VDC			75	Push					
53754-84	115 VDC			1900	Pull					
53759-84	115 VDC			1900	Push					
53754-86	6 VDC	Intermittent	19 Watts	1.9	Pull	126	30	10	0	0
53759-86	6 VDC			1.9	Push					
53754-87*	12 VDC			7.5	Pull					
53759-87	12 VDC			7.5	Push					
53754-88*	24 VDC			30	Pull					
53759-88	24 VDC			30	Push					
53754-90	115 VDC			750	Pull					
53759-90	115 VDC			750	Push					
53754-92	6 VDC	Pulse	77 Watts	0.47	Pull	180	93	50	0	0
53759-92	6 VDC			0.47	Push					
53754-93	12 VDC			1.9	Pull					
53759-93	12 VDC			1.9	Push					
53754-94	24 VDC			7.5	Pull					
53759-94	24 VDC			7.5	Push					
53754-96	115 VDC			190	Pull					
53759-96	115 VDC			190	Push					

(*) Normally Stocked

Non stocked items require a minimum order

MED 16x2.000



TUBULAR FRAME SOLENOID

Two position linear solenoid with tubular construction.



Features

- High performance construction
- DC solenoids applications only
- Standard push and pull versions available
- UL approval on many models



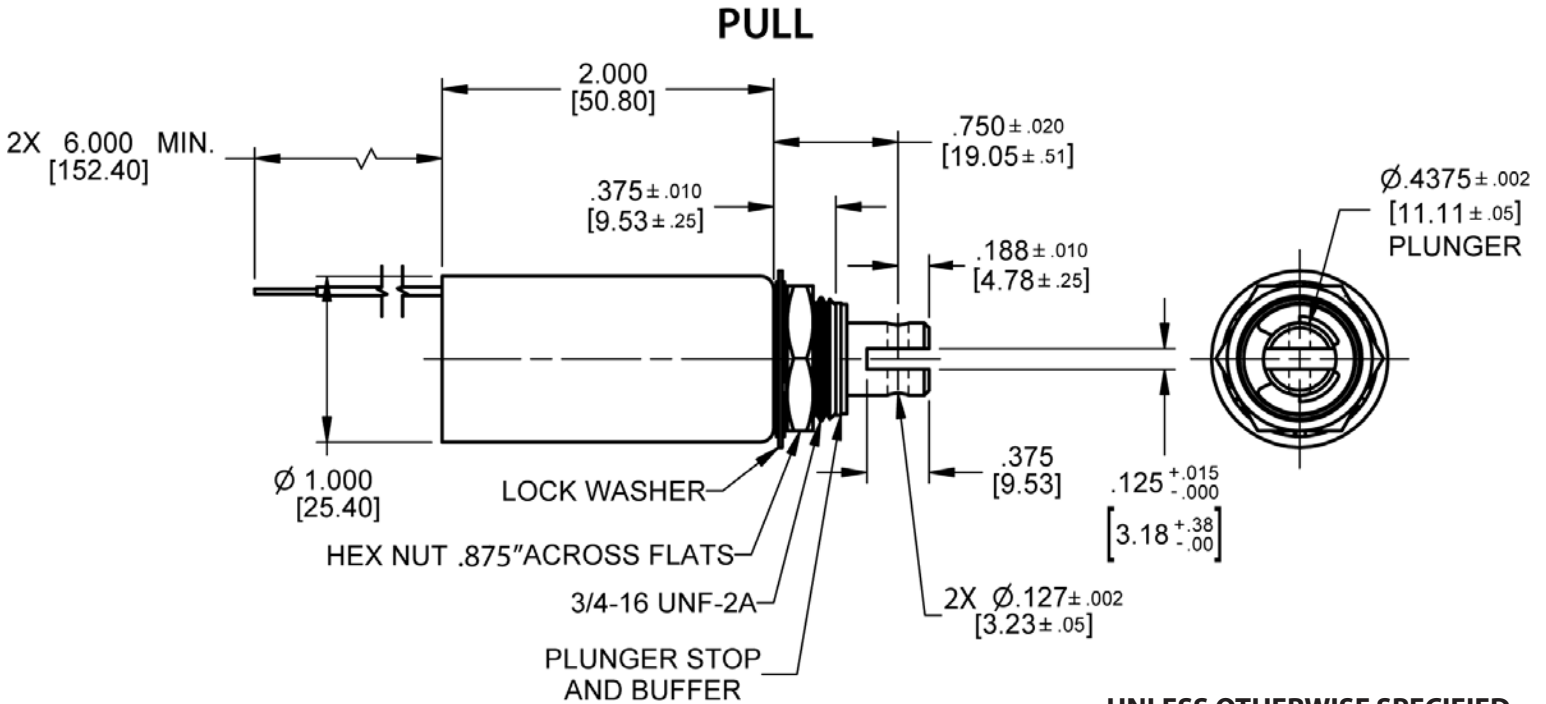
Electrical Specifications	
Coil Voltages	6, 12, 24, 115 VDC
Coil Power	10 Watts Continuous, 24 Watts Intermittent, 96 Watts Pulse
Coil Termination	Wire leads 24 AWG (standard)
Duty Cycle	Continuous, intermittent and pulse (see standard part numbers on page 4)
Coil Treatment	Tape wrapped
Insulation Class	Class A Rating - 105°C (221°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.000" (L) x Ø1.000" (D)
Forces	See force curves on page 3
Plunger Diameter	Ø.4375"
Plunger Guide Material	Plastic
Mounting	0.875" Hex Nut
Weight	Plunger - 1.53 oz., Total - 6.5 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
	UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S105

All dimensions in Inches

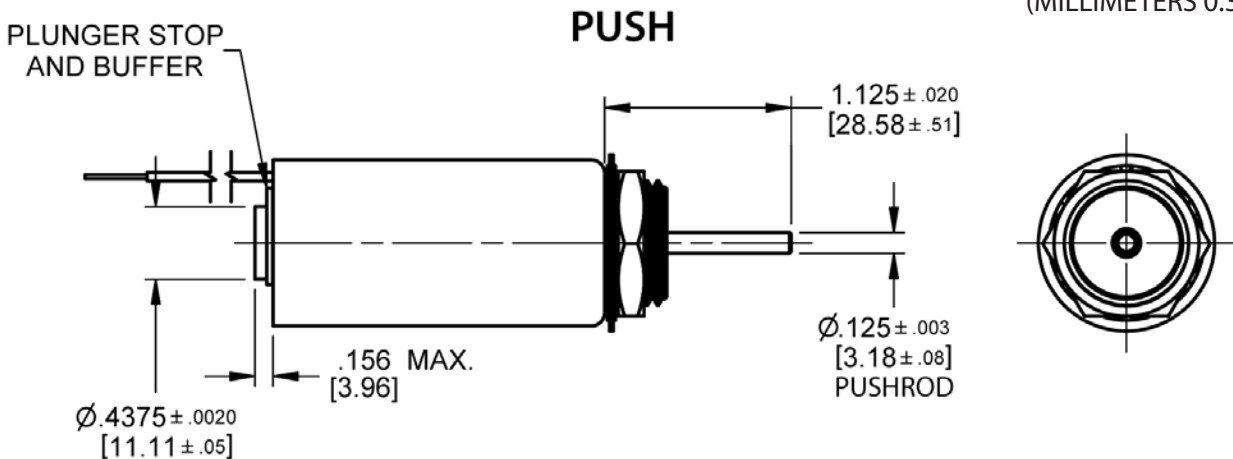
MED 16x2.000

Dimensional View

Units: Inches [mm]

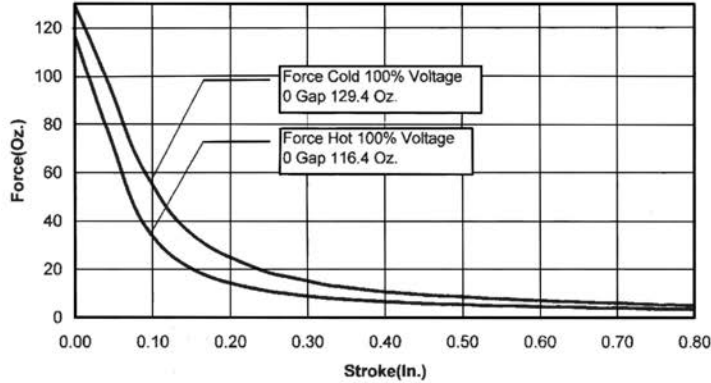


UNLESS OTHERWISE SPECIFIED
INCHES ± .015
(MILLIMETERS 0.38)

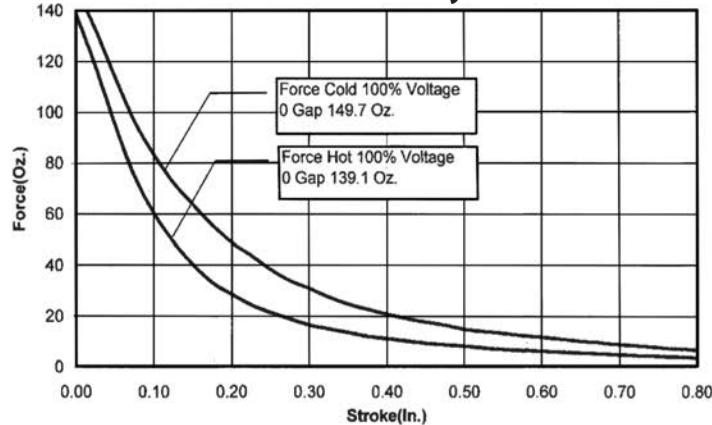


Force Curves

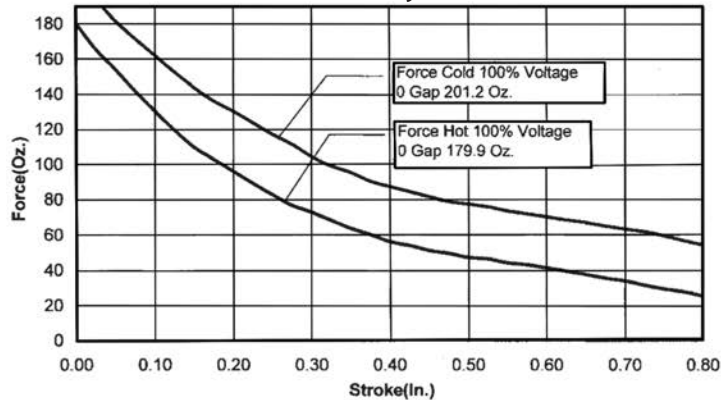
DC Continuous Duty - 10 Watts



DC Intermittent Duty - 24 Watts



DC Pulse Duty - 96 Watts



Standard intermittent duty cycle at nominal voltage is one (1) minute "ON" and three (3) minutes "OFF". Standard pulse duty cycle is 100 milliseconds "ON" and 900 milliseconds "OFF".

Note:

Cold Force @ 25°C (77°F) Cold Temperature

Hot Force @ 130°C (266°F) Coil Temperature

Approx. 36 sq. in. Heat Sink Required

MED 16x2.000



Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53753-80	6 VDC	Continuous	10 Watts	3.8	Pull	129	42	18	8	5
53757-80	6 VDC			3.8	Push					
53753-81*	12 VDC			15	Pull					
53757-81*	12 VDC			15	Push					
53753-82*	24 VDC			60	Pull					
53757-82*	24 VDC			60	Push					
53753-84	115 VDC			1500	Pull					
53757-84	115 VDC			1500	Push					
53753-86	6 VDC	Intermittent	24 Watts	1.5	Pull	149	72	36	15	8
53757-86	6 VDC			1.5	Push					
53753-87*	12 VDC			6	Pull					
53757-87*	12 VDC			6	Push					
53753-88*	24 VDC			24	Pull					
53757-88*	24 VDC			24	Push					
53753-90	115 VDC			600	Pull					
53757-90	115 VDC			600	Push					
53753-92	6 VDC	Pulse	96 Watts	0.37	Pull	201	150	115	77	90
53757-92	6 VDC			0.37	Push					
53753-93	12 VDC			1.5	Pull					
53757-93	12 VDC			1.5	Push					
53753-94	24 VDC			6	Pull					
53757-94	24 VDC			6	Push					
53753-96	115 VDC			150	Pull					
53757-96	115 VDC			150	Push					

(*) Normally Stocked

Non stocked items require a minimum order

MED 19x2.700



TUBULAR FRAME SOLENOID

Two position linear solenoid with tubular frame construction.



Features

- High performance construction
- DC solenoids applications only
- Standard pull versions available
- UL approval on many models



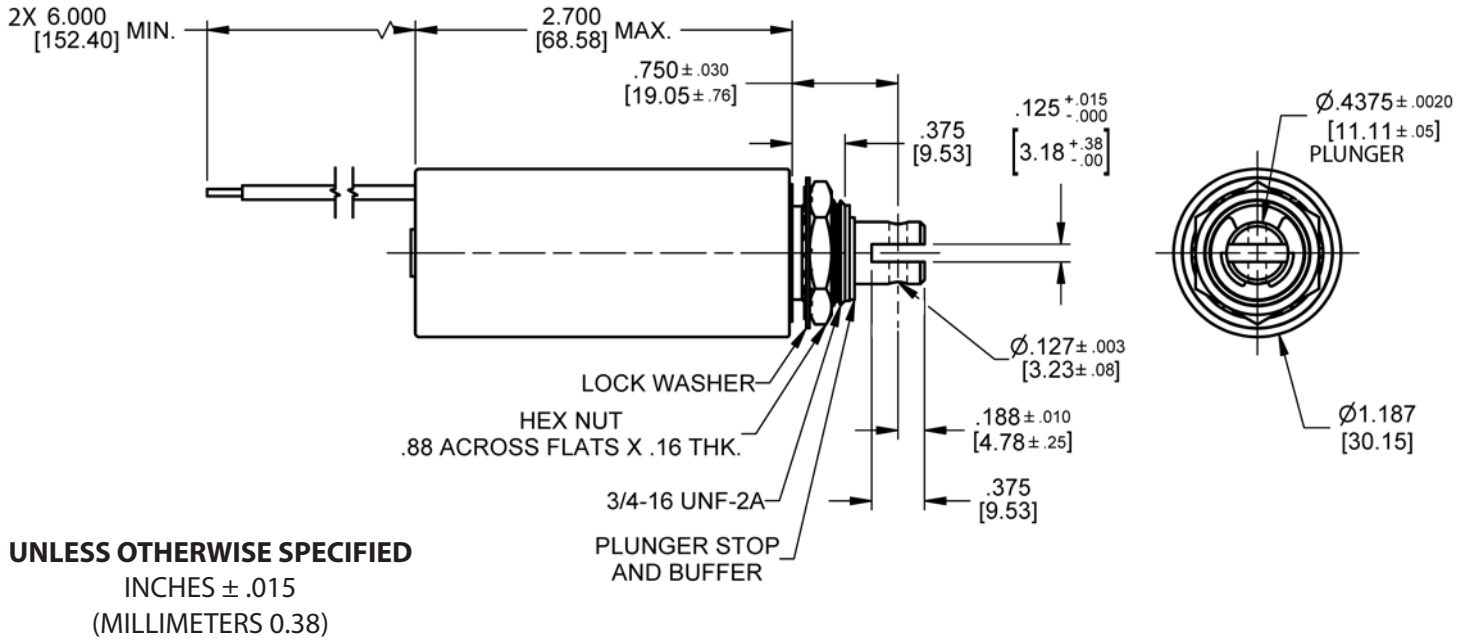
Electrical Specifications	
Coil Voltages	6, 12, 24, 115 VDC
Coil Power	12 Watts Continuous, 30 Watts Intermittent, 116 Watts Pulse
Coil Termination	Wire leads 20 AWG (standard)
Duty Cycle	Continuous, intermittent, pulse (see standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class F Rating - 155°C (311°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.700" (L) x Ø1.187" (D)
Forces	See force curves on page 3
Plunger Diameter	Ø.4375"
Plunger Guide Material	Plastic
Mounting	.88" x .16" Hex Nut
Weight	Plunger - 2.1 oz., Total - 10.4 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
	UL File No. E74443 For Insulation Systems S155

All dimensions in Inches

MED 19x2.700

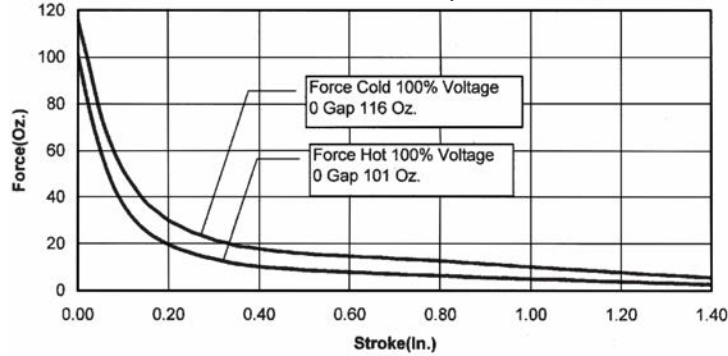
Dimensional View

Units: Inches [mm]

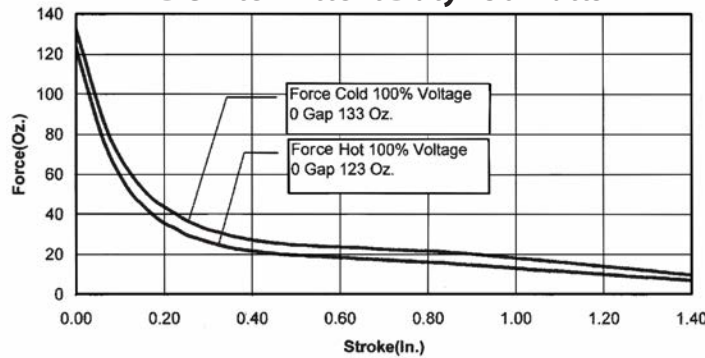


Force Curves

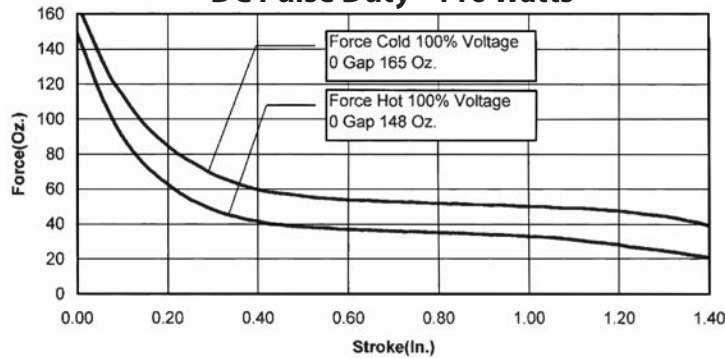
DC Continuous Duty - 12 Watts



DC Intermittent Duty - 30 Watts



DC Pulse Duty - 116 Watts



Standard intermittent duty cycle at nominal voltage is one (1) minute "ON" and three (3) minutes "OFF". Standard pulse duty cycle is 100 milliseconds "ON" and 900 milliseconds "OFF".

Note:

Cold Force @ 25°C (77°F) Cold Temperature
Hot Force @ 130°C (266°F) Coil Temperature
Approx. 36 sq. in. Heat Sink Required

MED 19x2.700



Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53792-80	6 VDC	Continuous	12 Watts	3	Pull	116	40	25	16	14
53792-81	12 VDC			12						
53792-82	24 VDC			48						
53792-84	115 VDC			1102						
53792-86	6 VDC	Intermittent	30 Watts	1.2	Pull	133	58	35	25	22
53792-87	12 VDC			4.8						
53792-88	24 VDC			19.2						
53792-90	115 VDC			441						
53792-92	6 VDC	Pulse	116 Watts	0.31	Pull	165	100	75	56	52
53792-93	12 VDC			1.24						
53792-94	24 VDC			4.97						
53792-96	115 VDC			114						

(*) Normally Stocked

Non stocked items require a minimum order

MED 24x1.700



TUBULAR FRAME SOLENOID

Two position linear solenoid with tubular construction.



Features

- High performance construction
- DC solenoids applications only
- Standard push and pull versions available
- UL approval on many models



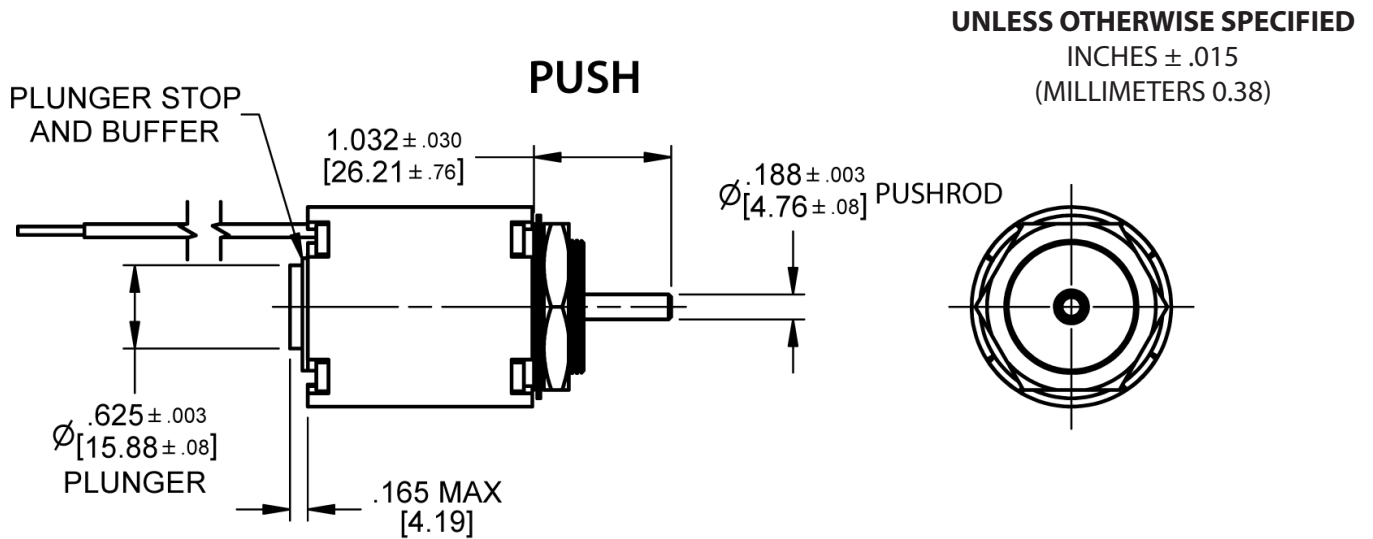
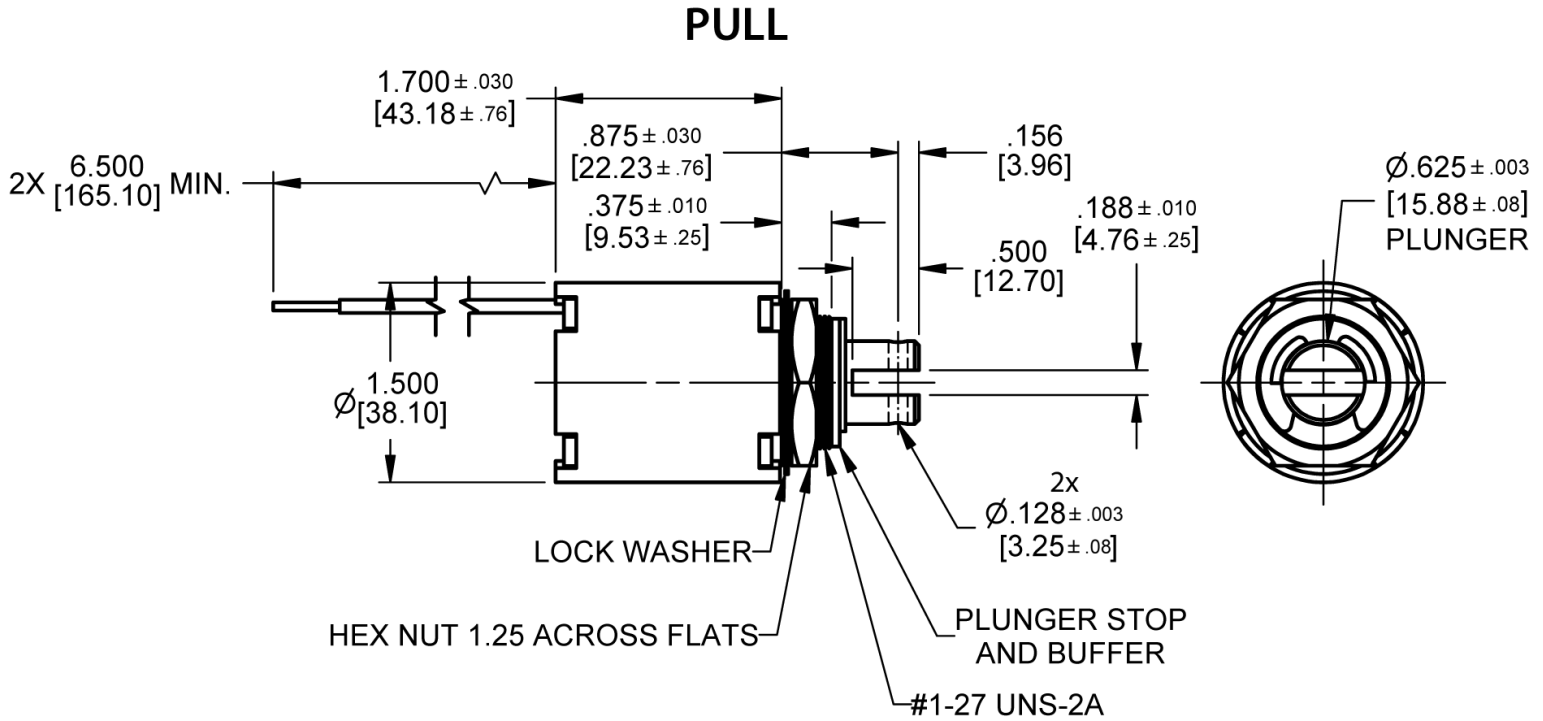
Electrical Specifications	
Coil Voltages	6, 12, 24, 110 VDC
Coil Power	12 Watts Continuous, 33 Watts Intermittent, 120 Watts Pulse
Coil Termination	Wire leads 20 AWG (standard)
Duty Cycle	Continuous, intermittent, pulse (See standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class B Rating - 130°C (265°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.700" (L) x Ø1.500" (D)
Forces	See force curves on page 3
Plunger Diameter	Ø.625"
Plunger Guide Material	Brass
Mounting	1.250" Hex Nut
Weight	Plunger - 2.6 oz., Total - 11.1 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S130	

All dimensions in Inches

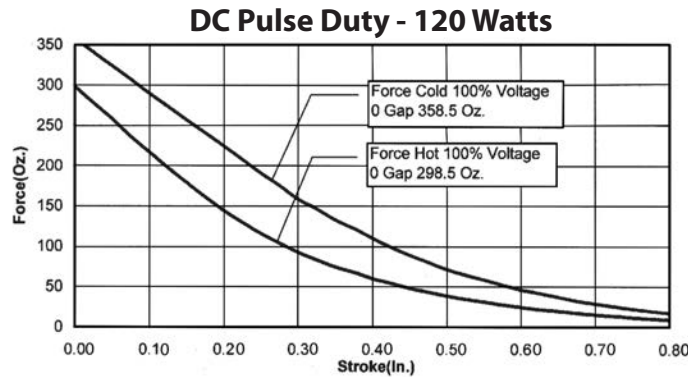
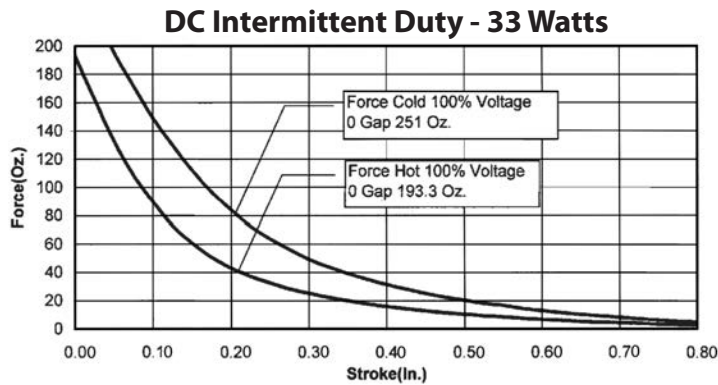
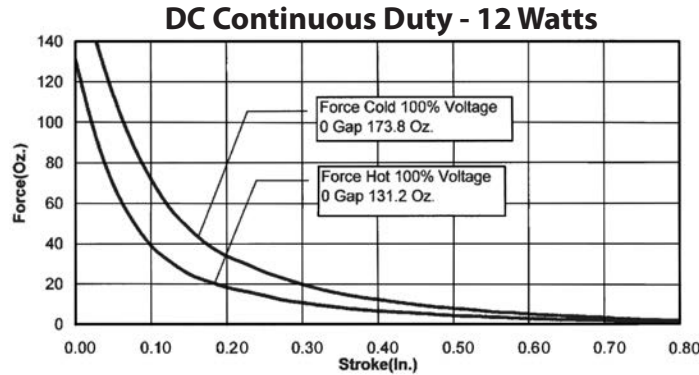
MED 24x1.700

Dimensional View

Units: Inches [mm]



Force Curves



Standard intermittent duty cycle at nominal voltage is one (1) minute "ON" and three (3) minutes "OFF". Standard pulse duty cycle is 100 milliseconds "ON" and 900 milliseconds "OFF".

Note:

Cold Force @ 25°C (77°F) Cold Temperature
Hot Force @ 130°C (266°F) Coil Temperature
Approx. 36 sq. in. Heat Sink Required

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53797-80	6 VDC	Continuous	12 Watts	3	Pull	173	56	26	8	2
53798-80	6 VDC			3	Push					
53797-81*	12 VDC			12	Pull					
53798-81	12 VDC			12	Push					
53797-82*	24 VDC			48	Pull					
53798-82	24 VDC			48	Push					
53797-83	110 VDC			1008	Pull					
53798-83	110 VDC			1008	Push					
53797-84	6 VDC	Intermittent	33 Watts	1.09	Pull	251	130	60	20	7
53798-84	6 VDC			1.09	Push					
53797-85*	12 VDC			4.36	Pull					
53798-85	12 VDC			4.36	Push					
53797-86*	24 VDC			17.5	Pull					
53798-86	24 VDC			17.5	Push					
53797-87	110 VDC			366.7	Pull					
53798-87	110 VDC			366.7	Push					
53797-88	12 VDC	Pulse	120 Watts	1.2	Pull	358	275	185	75	22
53798-88	12 VDC			1.2	Push					
53797-89	24 VDC			4.8	Pull					
53798-89	24 VDC			4.8	Push					
53797-90	110 VDC			100.8	Pull					
53798-90	110 VDC			100.8	Push					

(*) Normally Stocked

Non stocked items require a minimum order

MED 24x2.400

TUBULAR FRAME SOLENOID

Two position linear solenoid with tubular construction.



Features

- High performance construction
- DC solenoids applications only
- Standard push and pull versions available
- UL approval on many models



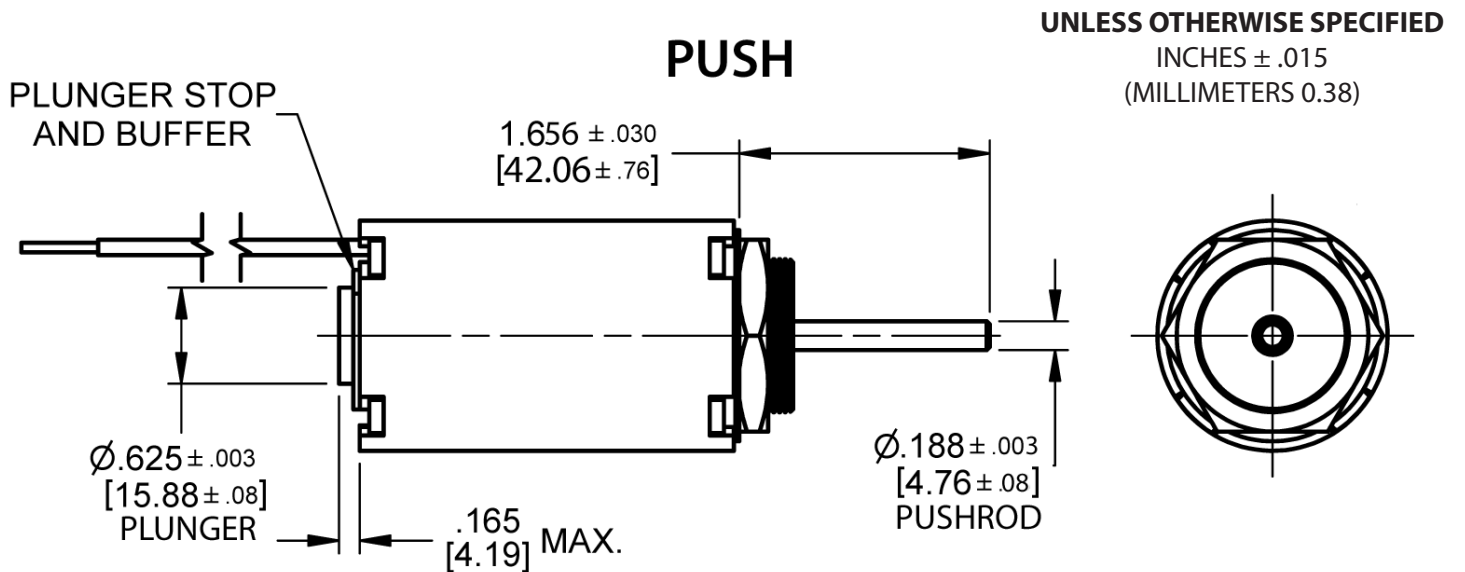
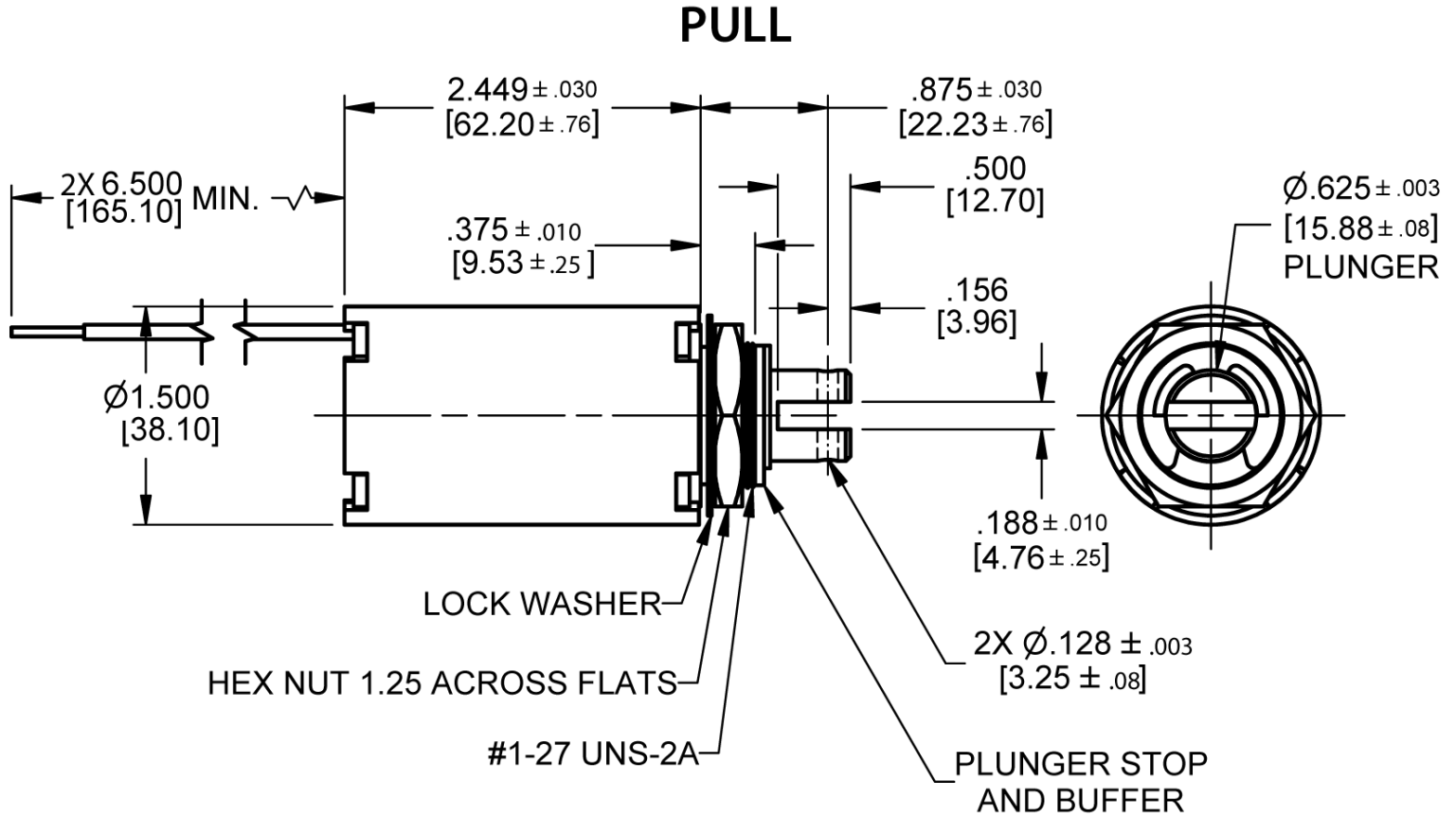
Electrical Specifications	
Coil Voltages	6, 12, 24, 110 VDC
Coil Power	14 Watts Continuous, 40 Watts Intermittent, 140 Watts Pulse
Coil Termination	Wire leads 20 AWG (standard)
Duty Cycle	Continuous, intermittent, pulse (See standard part numbers on page 4)
Coil Treatment	Tape Wrapped
Insulation Class	Class B Rating - 130°C (265°F) Max.
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.400" (L) x Ø1.500" (D)
Forces	See force curves on page 3
Plunger Diameter	Ø.625"
Plunger Guide Material	Brass
Mounting	1.250" Hex Nut
Weight	Plunger - 3.7 oz., Total - 15.1 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
UL File No. E57982 For Continuous Duty UL File No. E74443 For Insulation Systems S130	

All dimensions in Inches

MED 24x2.400

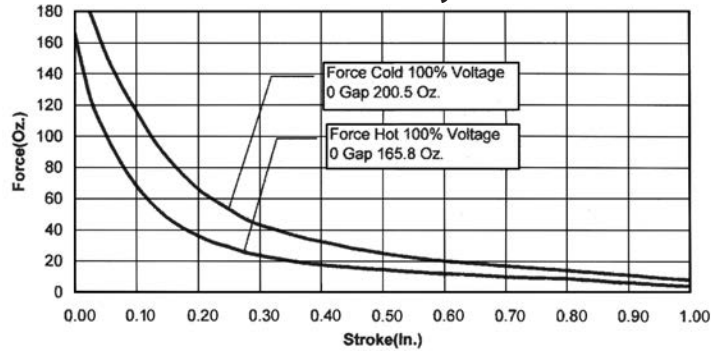
Dimensional View

Units: Inches [mm]

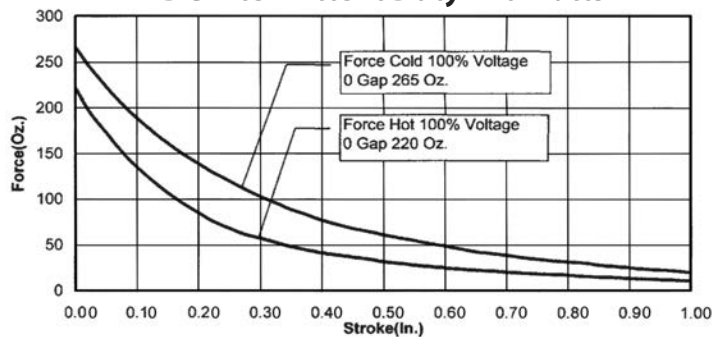


Force Curves

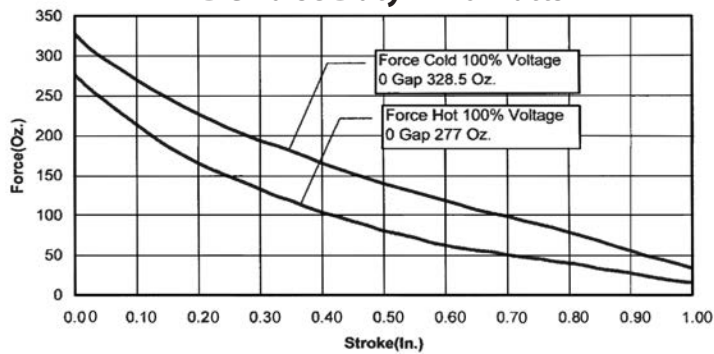
DC Continuous Duty - 14 Watts



DC Intermittent Duty - 40 Watts



DC Pulse Duty - 140 Watts



Standard intermittent duty cycle at nominal voltage is one (1) minute "ON" and three (3) minutes "OFF". Standard pulse duty cycle is 100 milliseconds "ON" and 900 milliseconds "OFF".

Note:

Cold Force @ 25°C (77°F) Cold Temperature

Hot Force @ 130°C (266°F) Coil Temperature

Approx. 36 sq. in. Heat Sink Required

MED 24x2.400



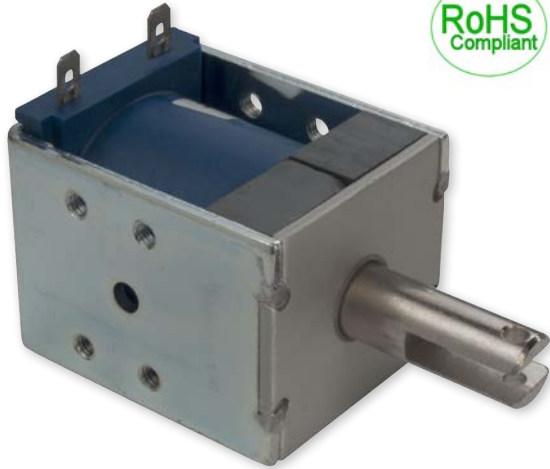
Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77°, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53795-80	6 VDC	Continuous	14 Watts	2.57	Pull	200	100	52	25	17
53796-80	6 VDC			2.57	Push					
53795-81*	12 VDC			10.3	Pull					
53796-81	12 VDC			10.3	Push					
53795-82*	24 VDC			41.1	Pull					
53796-82	24 VDC			41.1	Push					
53795-83	110 VDC			864	Pull					
53796-83	110 VDC			864	Push					
53795-84	6 VDC	Intermittent	40 Watts	0.9	Pull	265	175	120	63	35
53796-84	6 VDC			0.9	Push					
53795-85*	12 VDC			3.6	Pull					
53796-85	12 VDC			3.6	Push					
53795-86*	24 VDC			14.4	Pull					
53796-86	24 VDC			14.4	Push					
53795-87	110 VDC			302.5	Pull					
53796-87	110 VDC			302.5	Push					
53795-88	12 VDC	Pulse	140 Watts	1.03	Pull	328	262	210	140	85
53796-88	12 VDC			1.03	Push					
53795-89	24 VDC			4.11	Pull					
53796-89	24 VDC			4.11	Push					
53795-90	110 VDC			86.4	Pull					
53796-90	110 VDC			86.4	Push					

(*) Normally Stocked

Non stocked items require a minimum order

D4-ML



MAGNETIC LATCHING SOLENOID

D-frame, pull type solenoid with an internal permanent magnet for keeping the plunger in the retracted position without power.

Features

- Innovative design provides more pull and hold force than other solenoids of similar size.
- Low power consumption



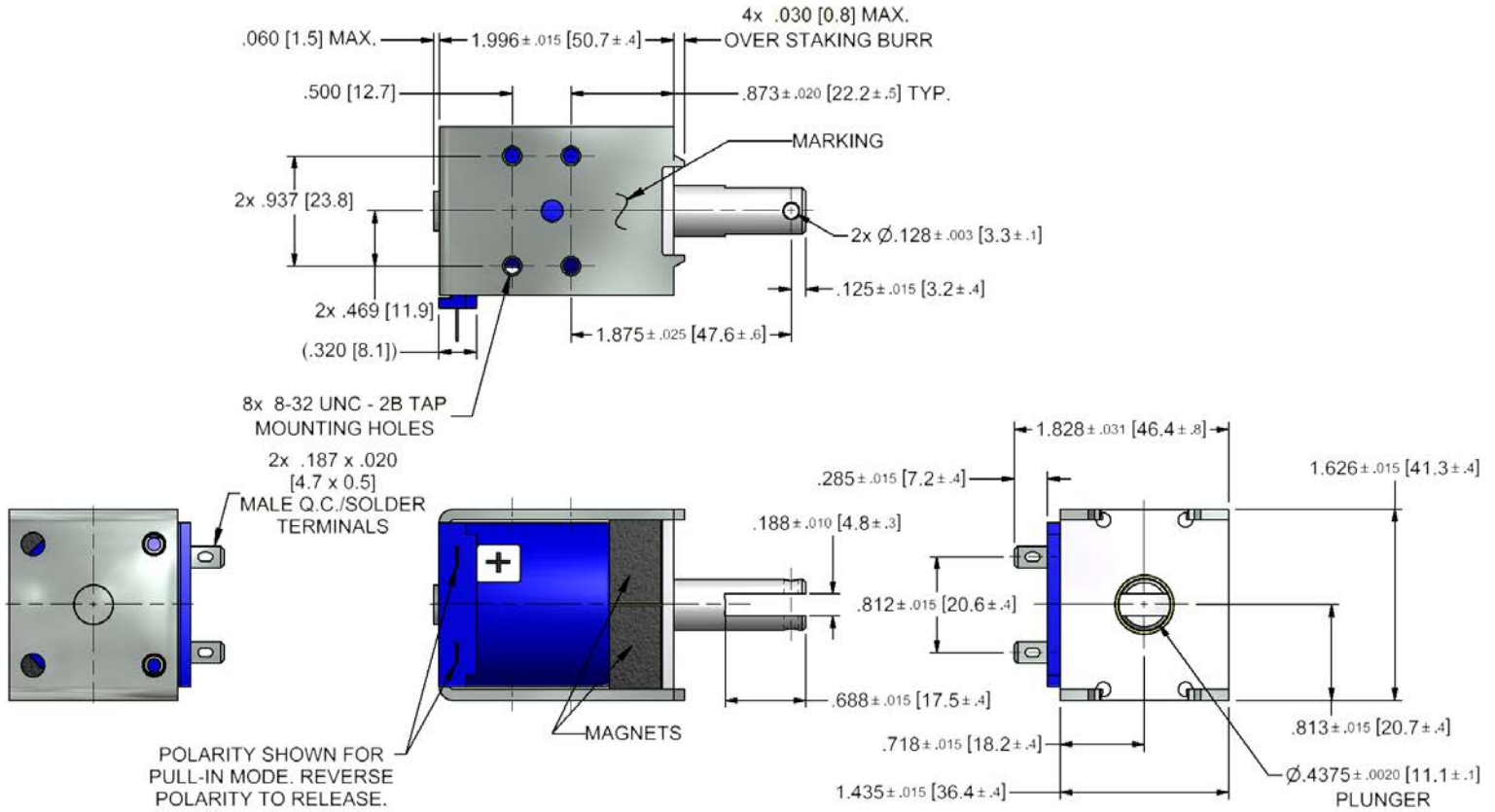
Electrical Specifications	
Coil Voltages	6, 12, 24 VDC - Other options available on request
Coil Power	29 Watts Intermittent, 115 Watts Pulse - Other options available on request
Coil Termination	.187" quick connect terminals (standard) .250" quick connect terminals (optional)
Duty Cycle	Intermittent and pulse duty available (see standard part numbers on page 3)
Coil Treatment	Encapsulated (tape wrapped optional)
Insulation Class	Class B (130°)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.996" (L) x 1.437" (W) x 1.626" (H) See page 2 for dimensional drawing
Forces	See force curves on page 2
Plunger Diameter	0.4375"
Plunger Guide Material	Plastic
Mounting	8x 8-32 UNC - 2B TAP Mounting Holes
Weight	Plunger -1.63 oz., Total - 12 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D	

All dimensions in Inches

D4-ML

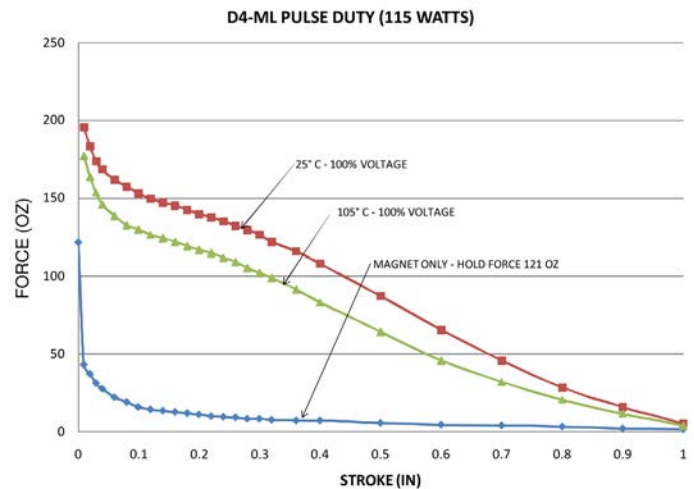
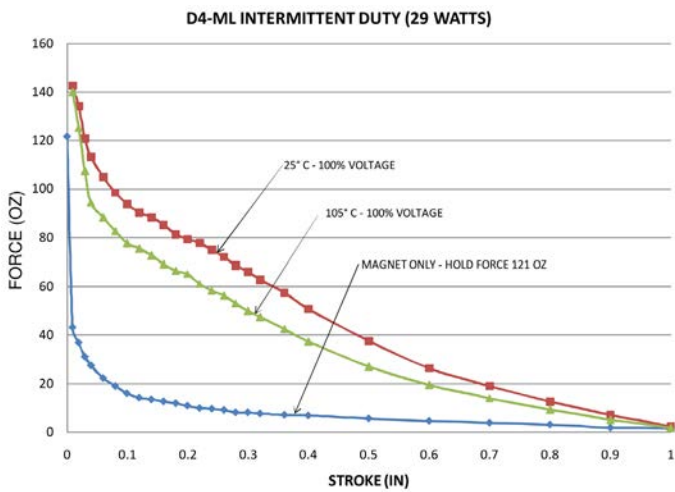
Dimensional View

Units: Inches [mm]



1. POSITIVE POWER SUPPLY (+) TO (+) FOR PULL-IN.
2. NEGATIVE POWER SUPPLY (-) TO (+) FOR RELEASE.

Force Curves



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine "9" minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx. 36 sq. in Heat Sink Required.

D4-ML

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53802-86*	6 VDC	Intermittent	29 Watts	1.22	Pull	121	90	73	37	15
53802-87*	12 VDC			4.92						
53802-88*	24 VDC			20						
53802-92	6 VDC	Pulse	115 Watts	0.30		121	148	133	87	36
53802-93	12 VDC			1.22						
53802-94	24 VDC			4.92						

(*) Normally Stocked

Non stocked items require a minimum order

D26-ML



MAGNETIC LATCHING SOLENOID

D-frame, pull type solenoid with an internal permanent magnet for keeping the plunger in the retracted position without power.

Features

- Innovative design provides more pull and hold force than other solenoids of similar size.
- Low power consumption
- Molex connector for lead wires allows for easy connection to printed circuit boards.



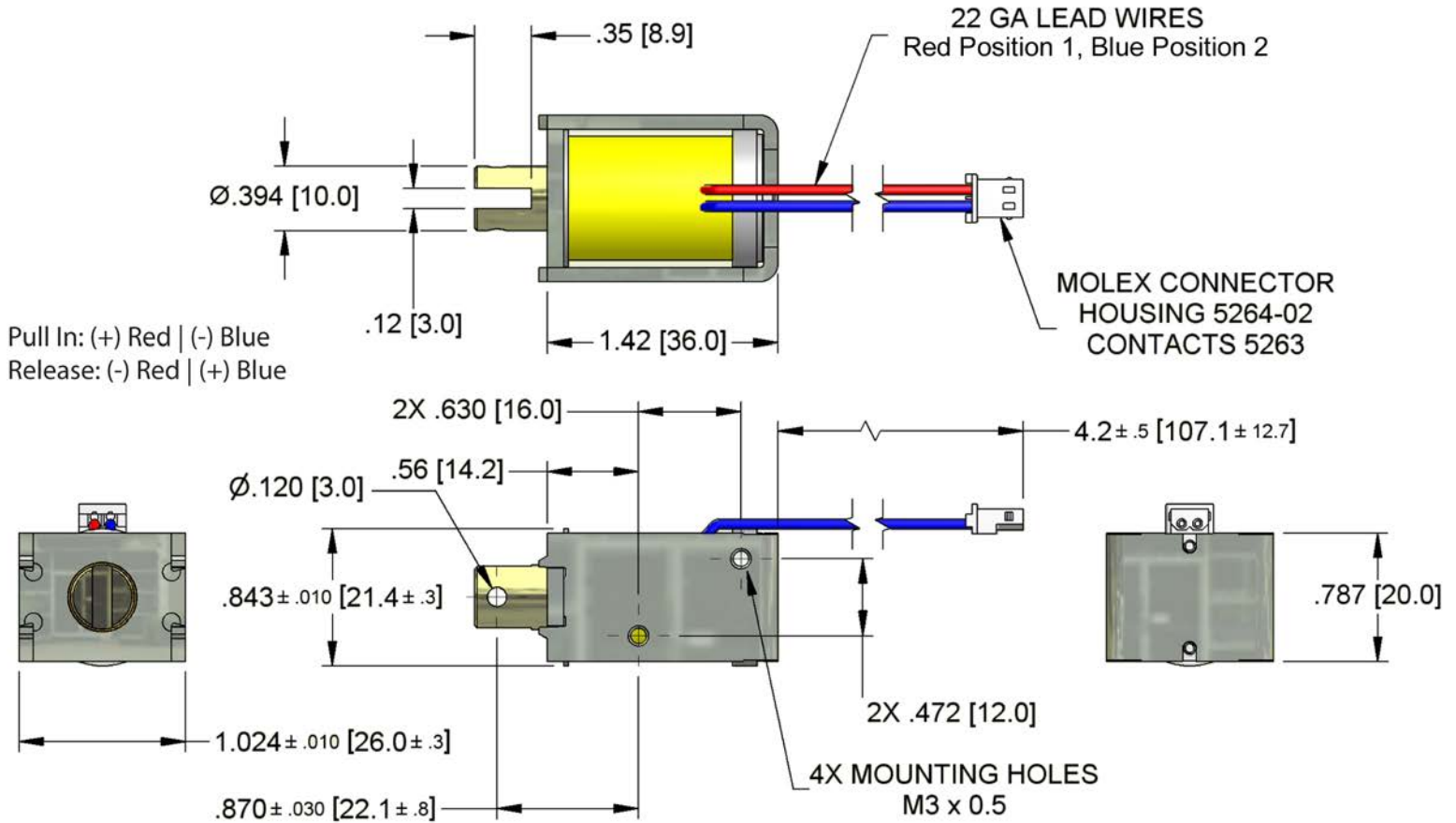
Electrical Specifications	
Coil Voltages	6, 12, 24 VDC - Other voltages available on request
Coil Power	12 Watts Intermittent & 48 Watts Pulse - Other options available on request
Coil Termination	22 GA lead wires with Molex connector
Duty Cycle	Intermittent and pulse duty available (see standard part numbers on page 3)
Coil Treatment	Tape wrapped
Insulation Class	Class B (130° C)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	1.420" (L) x 0.790" (W) x .1.020" (H) (See page 2 for dimensional drawing)
Forces	See force curves on page 2
Plunger Diameter	0.394"
Plunger Guide Material	Brass
Mounting	4X M3 x 0.5 Mounting Holes
Weight	Plunger - 0.9 oz., Total - 3.9 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
	UL File No. E74443 For Insulation Systems S105, S130, S130D

All dimensions in Inches

D26-ML

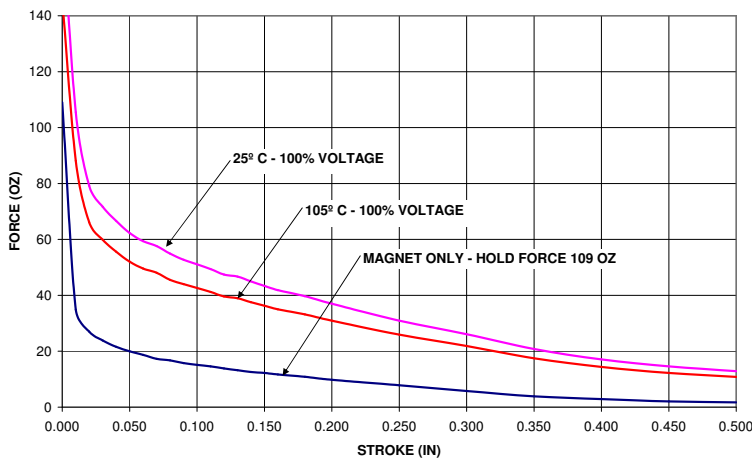
Dimensional View

Units: Inches [mm]

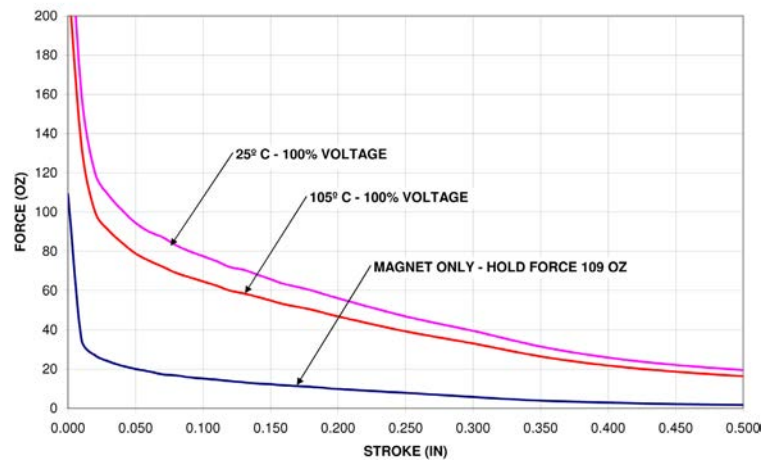


Force Curves

D26ML INTERMITTENT DUTY (12W)



D26ML PULSE DUTY (48W)



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine "9" minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
NOTE: Approx. 36 sq. in Heat Sink Required.

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53800-86*	6 VDC	Intermittent	12 Watts	3	Pull	109	47.1	31	14.3	0
53800-87*	12 VDC			12						
53800-88*	24 VDC			48						
53800-92	6 VDC	Pulse	48 Watts	0.75		109	71.2	46.8	19.4	0
53800-93	12 VDC			3						
53800-94	24 VDC			12						

(*) Normally Stocked

Non stocked items require a minimum order



MAGNETIC LATCHING SOLENOID

D-frame, pull type solenoid with an internal permanent magnet for keeping the plunger in the retracted position without power.

Features

- Innovative design provides more pull and hold force than other solenoids of similar size.
- Low power consumption

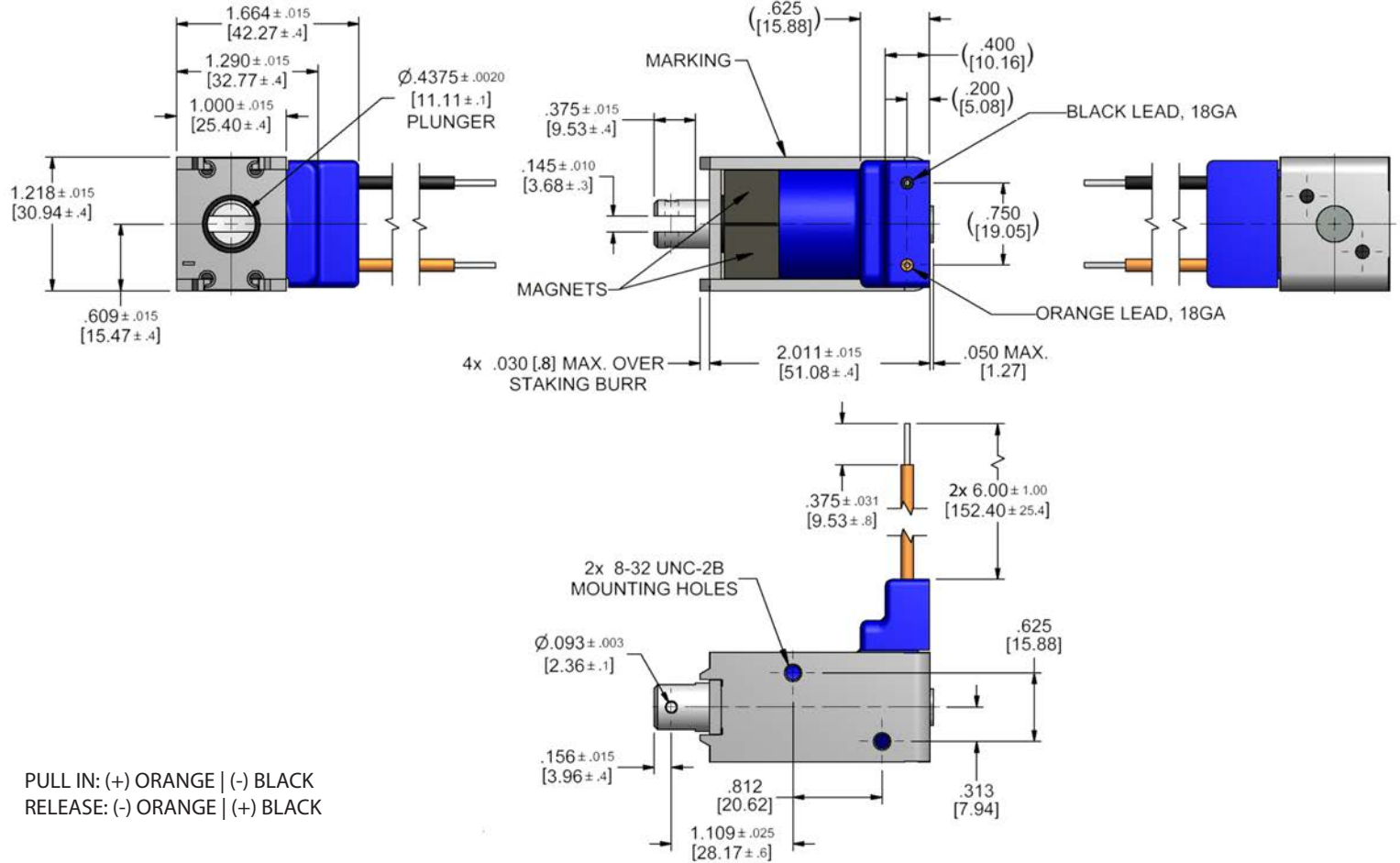


Electrical Specifications	
Coil Voltages	6, 12, 24 VDC Standard - Other voltages available on request
Coil Power	21 Watts Intermittent and 85 Watts Pulse- Other options available on request
Coil Termination	Wire leads 18 AWG (standard)
Duty Cycle	Intermittent and pulse duty available (see standard part numbers on page 3)
Coil Treatment	Encapsulated
Insulation Class	Class F Rating - (155° C)
Dielectric Strength	30 Volts and Under: 500 VRMS Over 30 Volts: 1000 VRMS plus 2X rated voltage for 1 minute
Mechanical Specifications	
Size	2.011" (L) x 1.000" x (W) x 1.218" (H) See page 2 for dimensional drawing
Forces	See force curves on page 2
Plunger Diameter	0.4375"
Plunger Guide Material	Plastic
Mounting	2X #8-32 UNC-2B Mounting Holes
Weight	Plunger - 1.2 oz., Total - 6.3 oz.
Life Expectancy	250,000 Cycles (Dependent on load conditions)
Agency Approvals	
	UL File No. E74443 For Insulation Systems S105, S130, S130D, S130D1, S155D

All dimensions in Inches

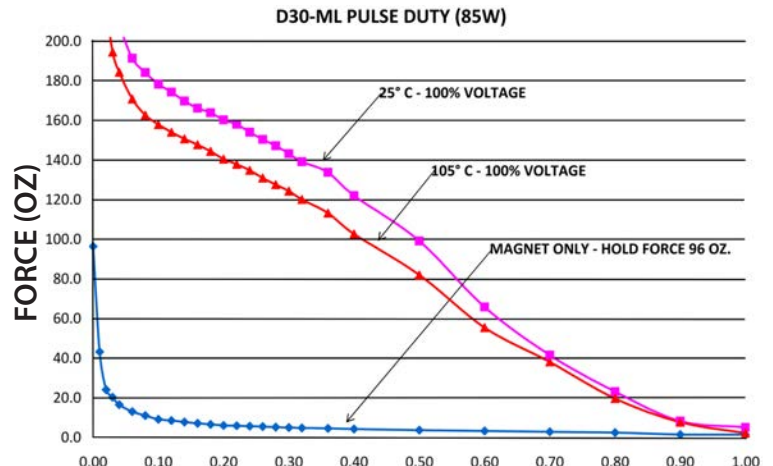
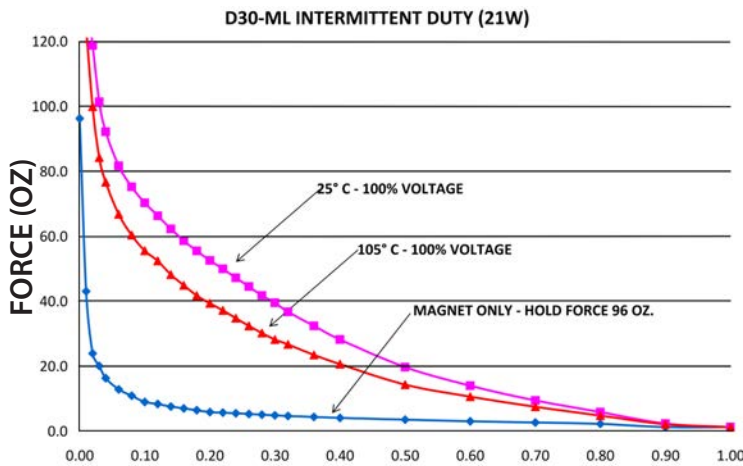
Dimensional View

Units: Inches [mm]



PULL IN: (+) ORANGE | (-) BLACK
 RELEASE: (-) ORANGE | (+) BLACK

Force Curves



Standard intermittent duty cycle at nominal voltage is 25%, with three (3) minutes maximum "ON" and nine "9" minutes minimum "OFF" in a repetitive cycle. Standard Pulse duty cycle is 10% with 100 milliseconds "ON" and 900 milliseconds "OFF".
 NOTE: Approx. 36 sq. in Heat Sink Required.

Standard Part Numbers

Parts No.	Voltage	Duty Cycle	Power	Resistance (Ohms)	Operation	Typical Force (oz). 100% Voltage, 77° F, Stroke @				
						0.000"	0.125"	0.250"	0.500"	0.750"
53803-86*	6 VDC	Intermittent	21 Watts	1.7	Pull	96	65	46	19.7	7.7
53803-87*	12 VDC			6.8						
53803-88*	24 VDC			27.2						
53803-92	6 VDC	Pulse	85 Watts	0.42		96	172	152	99	31
53803-93	12 VDC			1.7						
53803-94	24 VDC			6.8						

(*) Normally Stocked

Non stocked items require a minimum order