

THIS KEP NUT (2 PLS.) IS TIGHTENED AT THE FACTORY TO THE PROPER SPECS AND MUST NOT BE LOOSENEED OR REMOVED UNDER ANY CIRCUMSTANCES. REMOVING OR LOOSENING THIS NUT WILL CAUSE PRODUCT TO MALFUNCTION. SEE NOTE 7.

- NOTES:
1. ALL STEEL PARTS ARE PLATED.
 2. ALL DIMENSIONS ARE REFERENCE ONLY UNLESS OTHERWISE SPECIFIED.
 3. NORMALLY OPEN (N.O.) CONTACTS.
 4. MAX TORQUE: #10-32= 15 IN-LBS (1.69 N.m) 5/16-24= 35 IN-LBS (3.95 N.m)
 5. HARDWARE MAY BE ASSEMBLED, BAGGED OR SHIPPED LOOSE, SEE CHART. IF HARDWARE IS BAGGED IT WILL BE DONE AT COLE HERSEE'S DISCRETION
 6. PVC COATING MUST ADHERE TO BRACKET AND ALL HEX NUTS TO SEAL SOLENOID.
 7. DO NOT REMOVE OR LOOSEN 5/16 KEP NUTS. THEY SECURE POWER STUD TO SOL. CASE.
 8. 10/32 KEP NUTS MUST NOT BE LOOSENEED, TIGHTENED OR REMOVED--FACTORY TORQUED TO PROPER SPECS.

ADDITIONAL NOTES:

- INTERIOR POTTED WITH HENCOL#13 EPOXY TO ENCAPSULATE COIL AND COIL LEADS AGAINST VIBRATION.
- COIL WIRES SECURED WITH RTV.
- BOBBIN SECURED IN PLACE WITH EPOXY PLACED AROUND THE TOP RIM.
- ALL PARTS ARE SHIPPED LOOSE.
- PART NUMBER, DATE CODE & VOLTAGE INK STAMPED ON THIS SURFACE.
- COIL SURPRESSION DIODE#1N4005, MOUNTED INTERNALLY.
- CONTAINS IGNITION COIL RESISTOR SHORTING CIRCUIT.
- SILVER CONTACT SURFACES.
- UL & CE APPROVED.
- USES 081112 SPRING FOR STRONGER CONTACT RETURN FORCE.

CONSERVATIVE ELECTRICAL RATINGS		
A	INTERMITTENT DUTY 24-36V DC	120 AMPS MAKE, 65 AMPS BREAK 10 SECONDS ON, 30 MINUTES OFF
B	INTERMITTENT DUTY 6-12V DC	750 AMPS MAKE, 100 AMPS BREAK 10 SECONDS ON, 20 MINUTES OFF
C	CONTINUOUS DUTY 24V DC	200 AMPS CARRY ONLY. 150 AMPS MAKE & BREAK
D	CONTINUOUS DUTY 12V DC	200 AMPS, MAKE&BREAK. INRUSH: 600A
E	CONTINUOUS DUTY 6-36V DC	85 AMPS, 125A MAKE & BREAK
F	UL & CE INTERMITTENT RATING:	750 AMPS@12VDC MAKE, 100 AMPS BREAK 10 SECONDS ON, 30 MINUTES OFF
G	UL & CE CONTINUOUS RATING:	65 AMPS, 12V DC
	INTERMITTENT RATING:	750 AMPS MAKE, 100 AMPS BREAK 10 SECONDS ON, 30 MINUTES OFF
H	UL & CE CONTINUOUS RATING:	65 AMPS, 24V DC
	INTERMITTENT RATING:	120 AMPS MAKE, 65 AMPS BREAK 10 SECONDS ON, 30 MINUTES OFF
J	UL & CE CONTINUOUS RATING:	65 AMPS, 36V DC
	INTERMITTENT RATING:	120 AMPS MAKE, 65 AMPS BREAK 10 SECONDS ON, 30 MINUTES OFF
K	CONTINUOUS DUTY:	200 AMPS,36VDC, CARRY ONLY.

Revision Control Record				Revision Control Record			
Rev.	Description of Change	ECN No.	Date	Rev.	Description of Change	ECN No.	Date
				N	CHART CHANGE	01579	10/11/01
V	BOM REV. UPDATED	12101	03/29/12	M	ADDED 24143-03	01338	6/5/01
U	DRAWING CLARIFIED	09449	09/18/09	L	NOTE CHANGE	01045	1/25/01
P	ADDED PN24106-07	07078	3/5/07	K	PUT ON AUTOCAD	N/A	12/12/00

Tolerances: Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 * *** NOTE: All tolerances are Non-Cumulative. ***

Dimensional Units: All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

BEE" or an Asterisk () = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: Scale: 1:1

PROPRIETARY INFORMATION: This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, reproduced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.

DESIGN CONTROL: It is the responsibility of the individual using / referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn By: CF Date Drawn: 4/1/66

Key for Special Characteristics:

- Critical Characteristic, relating to Safety and/or Regulatory Compliance
- Significant Characteristic relating to Process Control (SPC)
- Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

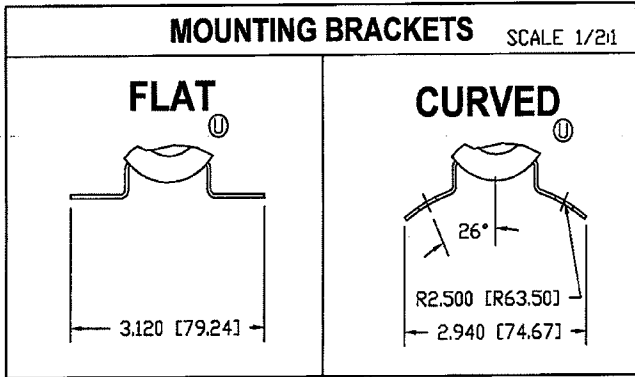
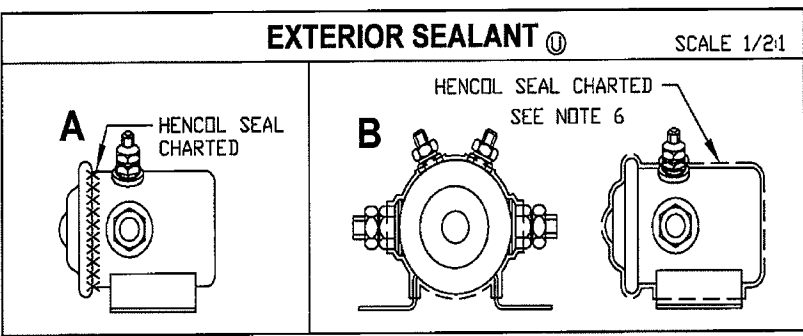
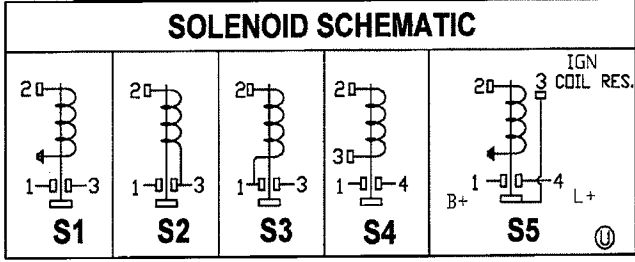
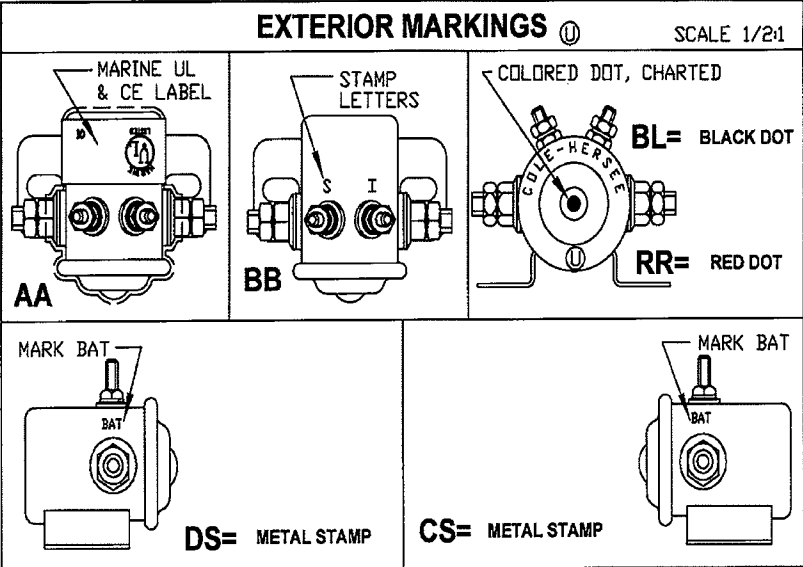
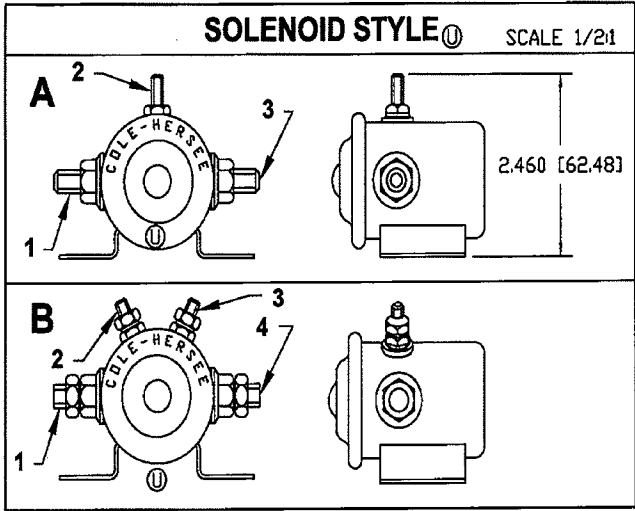
Responsible Engineer: N/A Pg. 1 of 5

Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Phn: 617-268-2100 Web: www.colehersee.com

Description: **SOLENOID**

Drawing/Part No.: **24008** Current Rev.: **V**

Page 1/1



Revision Control Record				Revision Control Record			
Rev.	Description of Change	ECN No.	Date	Rev.	Description of Change	ECN No.	Date
SEE PAGE 1 FOR REVISION NOTES							

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions ± 0.02 "
 * 3-place Decimal Dimensions ± 0.005 "
 * Angular Dimensions ± 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (mm) are expressed in millimeters

REC or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: Scale: **1:1**

PROPRIETARY INFORMATION This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, reproduced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.

DESIGN CONTROL It is the responsibility of the individual using / referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Drawn: **CF** Date: **4/1/66**

Key for Special Characteristics:

- CD Critical Characteristics, relating to Safety and/or Regulatory Compliance
- X Significant Characteristic relating to Process Control (SPC)
- CC Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the Identification of any Characteristic as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **N/A** Pg. 2 of 5

Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Phn: 617-268-2100 Web: www.colehersee.com

SOLENOID

Drawing / Part No.: **24008**

Current Rev. **SEE PAGE 1**

24063-09	24	71	CONTINUOUS	4	B	E	INSULATED	FLAT	B	12	YES SEE NOTE A		S4	ASSEMBLED	A		
24063-08	24	71	CONTINUOUS	4	B	H	INSULATED	FLAT	B	12		AA	S4	ASSEMBLED	J		
24063-06	24	71	CONTINUOUS	4	B	E	INSULATED	FLAT	B	12			S4	ASSEMBLED	E		
24063-05	24	71	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	ASSEMBLED			
24063-04	24	71	CONTINUOUS	4	B	E	INSULATED	FLAT	A	13	YES SEE NOTE A	RR	S4	ASSEMBLED	A		
24063-01	24	71	CONTINUOUS	4	B	E	INSULATED	FLAT			YES SEE NOTE B,C		S4	ASSEMBLED	B,C (U)		
24063	24	71	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	BAGGED			
24060	12	4.4	INTERMITTENT	3	A	B	INSULATED	FLAT				CS	S2	ASSEMBLED	K		
24059-16	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	ASSEMBLED	(L)		
24059-15	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT	B	20	YES SEE NOTE A		S4	ASSEMBLED	A,K		
24059-12	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT	A	13	YES SEE NOTE A		S4	ASSEMBLED	A		
24059-10	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT	A	13	YES SEE NOTE A		S4	ASSEMBLED	A,K		
24059-09	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	ASSEMBLED	K		
24059-08	12	17.5	CONTINUOUS	4	B	G	INSULATED	FLAT				AA	S4	ASSEMBLED	J		
24059	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	BAGGED	(L)		
24055	6	1.6	INTERMITTENT	3	A	B	INSULATED	FLAT				CS	S2	ASSEMBLED	K		
24047-05	12	4.5	INTERMITTENT	4	B	B	INSULATED	FLAT					S4		D,K		
24047-03	12	4.4	INTERMITTENT	4	B	B	INSULATED	FLAT			YES SEE NOTE B		S4	ASSEMBLED	B,K		
24047	12	4.4	INTERMITTENT	4	B	B	INSULATED	FLAT					S4	BAGGED	K		
24046	12	4.4	INTERMITTENT	3	A	B	INSULATED	FLAT				DS	S3	ASSEMBLED	K		
24044	12	4.4	INTERMITTENT	3	A	B	GROUND	CURVED					S1	BAGGED	K		
24043	6	1.6	INTERMITTENT	4	B	B	INSULATED	FLAT					S4	ASSEMBLED	K		
24041	6	1.6	INTERMITTENT	3	A	B	GROUND	FLAT					S1	ASSEMBLED	K		
24039	6	1.6	INTERMITTENT	3	A	B	GROUND	CURVED					S1	(N) BAGGED	K		
24037-03	12	4.4	INTERMITTENT	3	A	B	GROUND	FLAT	A	13	YES SEE NOTE A		S1	ASSEMBLED	A,K		
24037	12	4.4	INTERMITTENT	3	A	B	GROUND	FLAT					S1	BAGGED	K		
24008-02	24	29	INTERMITTENT	4	B	A	INSULATED	FLAT	B	19	YES SEE NOTE B,C		S4	ASSEMBLED	B,C,K		
24008	24	29	INTERMITTENT	4	B	A	INSULATED	FLAT					S4	ASSEMBLED	K		
PART NO	V	DC	OHMS	DUTY CYCLE	#	STUDS	SOL.	CONTACT	COIL	BRACKET	LOC.	TYPE	INTR. (U)	EXTR	SLNOID	HARDWARE	ADDITIONAL
	COIL RATINGS						STYLE	RATINGS	TYPE	STYLE	EXTR.	SEALANT	SEALANT	MARKINGS	SCHEM.	NOTE 5	NOTES

Revision Control Record

Revision Control Record

Tolerances Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions $\pm 0.25^\circ$
 * 3-place Decimal Dimensions $\pm 0.005^\circ$
 * Angular Dimensions ± 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

PROPRIETARY INFORMATION This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, reproduced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.

DESIGN CONTROL It is the responsibility of the individual using / referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Key for Special Characteristics:

Critical Characteristic, relating to Safety and/or Regulatory Compliance

Significant Characteristic relating to Process Control (SPC)

Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)



Cole Hersee Co.

20 Old Colony Ave., South Boston, MA, 02127
 Phone: 617-268-2100 Web: www.colehersee.com

Description:

SOLENOID

Drawing / Part No.:

24008

Current Rev.
 SEE PAGE 1

SEE PAGE 1 FOR REVISION NOTES

Used On or Ref: Scale: **1:1**

Drawn By: **CF**

Date Drawn: **4/1/66**

Responsible Engineer: **N/A**

Pg. 3 of 5

24119-01	24	29	INTERMITTENT	3	A	A	GROUNDED	CURVED					S1	ASSEMBLED	K
24119	24	29	INTERMITTENT	3	A	A	GROUNDED	FLAT					S1	ASSEMBLED	K
24117-03	12	17.5	CONTINUOUS	4	B	G	INSULATED	FLAT	B	20		AA	S4	ASSEMBLED	J
24117-01	12	17.5	CONTINUOUS	4	B	G	INSULATED	FLAT	B	20		AA	S4	BAGGED	J
24117	12	17.5	CONTINUOUS	4	B	E	INSULATED	FLAT	B	20			S4	ASSEMBLED	E
24115-01	12	17.5	CONTINUOUS	3	A	E	INSULATED	CURVED	B	12		CW	S2	ASSEMBLED	
24115	12	17.5	CONTINUOUS	3	A	E	INSULATED	FLAT				CS	S2	BAGGED	
24107	24	71	CONTINUOUS	3	A	E	INSULATED	FLAT				CS	S2	ASSEMBLED	
24106-07	12	17.5	CONTINUOUS	3	A	E	GROUNDED	FLAT	B	12			S1	BAGGED	E
24106-04	12	17.5	CONTINUOUS	3	A	E	GROUNDED	FLAT			YES SEE NOTE A		S1	ASSEMBLED	A
24106	12	17.5	CONTINUOUS	3	A	E	GROUNDED	FLAT					S1	BAGGED	
24105	6	4.2	CONTINUOUS	3	A	E	GROUNDED	FLAT					S1	ASSEMBLED	
24104	24	29	INTERMITTENT	3	A	A	INSULATED	FLAT				CS	S2	ASSEMBLED	K
24103	12	4.4	INTERMITTENT	4	B	B	INSULATED	FLAT				BB	S5	ASSEMBLED	G,K
24097	6	4.2	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	ASSEMBLED	
24082	12	17.5	CONTINUOUS	3	A	E	GROUNDED	CURVED					S1	BAGGED	
24080-01	36	130	CONTINUOUS	4	B	J	INSULATED	FLAT				AA	S4	ASSEMBLED	J
24080	36	130	CONTINUOUS	4	B	E	INSULATED	FLAT					S4	ASSEMBLED	
24077	12	4.4	INTERMITTENT	3	A	B	INSULATED	FLAT	B	19		DS	S3	ASSEMBLED	K
24076	12	4.4	INTERMITTENT	4	B	B	INSULATED	FLAT	B	19			S4	ASSEMBLED	K
24075	6	1.6	INTERMITTENT	4	B	B	INSULATED	FLAT	B	19			S4	ASSEMBLED	K
24071-02	12	4.4	INTERMITTENT	3	A	B	GROUNDED	CURVED	B	19			S1	ASSEMBLED	K
24071-01	12	4.4	INTERMITTENT	3	A	B	GROUNDED	FLAT	B	12			S1	ASSEMBLED	E,K
24071	12	4.4	INTERMITTENT	3	A	B	GROUNDED	FLAT	B	19			S1	ASSEMBLED	K
PART NO	V DC COIL RATINGS	OHMS	DUTY CYCLE Ⓞ	# STUDS	SOL. STYLE	CONTACT RATINGS	COIL TYPE	BRACKET STYLE	LOC. EXTR. SEALANT	TYPE SEALANT	INTR.Ⓞ SEALANT	EXTR MARKINGS	S/LNOID SCHEM.	HARDWARE NOTE 5	ADDITIONAL NOTES

Revision Control Record

Revision Control Record

Tolerances: Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Metric: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative. <<<

Dimensional Units: All dimensions are expressed in inches except those shown in brackets [mm] are expressed in millimeters

REF. or an Asterisk () = Non-Tolerance Reference Dimension, shown for clarification purposes only.

PROPRIETARY INFORMATION: This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, re-produced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.

DESIGN CONTROL: It is the responsibility of the individual using / reviewing this drawing to ensure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing / reproduction.

Key for Special Characteristics:

Critical Characteristic, relating to Safety and/or Regulatory Compliance

Significant Characteristic relating to Process Control (SPC)

Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or its Customer

(Note that the Identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)



Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Phn: 617-268-2100 Web: www.colehersee.com

Description: **SOLENOID**

Drawing / Part No.: **24008**

Current Rev. **SEE PAGE 1**

SEE PAGE 1 FOR REVISION NOTES

Used On or Ref.: Scale: **1:1** Drawn By: **CF** Date Drawn: **4/1/66** Responsible Engineer: **N/A** Pg. 4 of 5

PART NO	V	DC	OHMS	DUTY CYCLE	#	STUDS	SOL. STYLE	CONTACT RATINGS	COIL TYPE	BRACKET STYLE	LOC.	TYPE	INTR. SEALANT	EXTR. SEALANT	EXTR. MARKINGS	SLNOID SCHEM.	HARDWARE NOTE 5	ADDITIONAL NOTES
M 202	12	4.4		INTERMITTENT	3	A	B		GROUND	FLAT						S1	ASSEMBLED	K
M 200-01	12	4.4		INTERMITTENT	4	B	F		INSULATED	FLAT				AA	S4	ASSEMBLED	J,K	
M 200	12	4.4		INTERMITTENT	4	B	B		INSULATED	FLAT					S4	ASSEMBLED	K	
24144	24	71		CONTINUOUS	4	B	C		INSULATED	FLAT					S4	ASSEMBLED	E,H	
24143-03	12	17.5		CONTINUOUS	4	B	D		INSULATED	FLAT	B	12			S4	BAGGED	E,H	
24143-02	36	130		CONTINUOUS	4	B	K		INSULATED	FLAT					S4	ASSEMBLED	E,H	
24143-01	12	17.5		CONTINUOUS	4	B	D		INSULATED	FLAT	A	13	YES SEE NOTE A		S4	ASSEMBLED	A,E,H	
24143	12	17.5		CONTINUOUS	4	B	D		INSULATED	FLAT					S4	BAGGED	E,H	
24141	24	29		INTERMITTENT	4	B	A		INSULATED	FLAT	A	13	YES SEE NOTE A	BL	S4	ASSEMBLED	A,K	
24140	12	17.5		CONTINUOUS	4	B	E		INSULATED	FLAT				BB	S5	ASSEMBLED	G	
24135-01	36	130		CONTINUOUS	4	B	J		INSULATED	FLAT	B	20		AA	S4	ASSEMBLED	J	
24135	36	130		CONTINUOUS	4	B	E		INSULATED	FLAT	B	20			S4	ASSEMBLED		
24129	12	4.4		INTERMITTENT	4	B	B		INSULATED	FLAT	B	12	YES SEE NOTE B		S4	ASSEMBLED	B,K	
24124	24	71		CONTINUOUS	3	A	E		GROUND	FLAT					S1	BAGGED	E	

SEE PAGE 1 FOR REVISION NOTES

Revision Control Record

Revision Control Record

Tolerances: Unless otherwise specifically noted, the following are default tolerances:
 * 2-place Decimal Dimensions +/- .02"
 * 3-place Decimal Dimensions +/- .005"
 * Angular Dimensions +/- 1.0 Deg.
 * Holes: Refer to equivalent English Dimension Tolerance
 >>> NOTE: All tolerances are Non-Cumulative <<<

Dimensional Units: All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

PROPRIETARY INFORMATION: This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, re-produced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.

DESIGN CONTROL: It is the responsibility of the individual using / referencing this drawing to ensure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE: Dimensional variation may occur during printing / reproduction.

Key for Special Characteristics:

Critical Characteristic, relating to Safety and/or Regulatory Compliance

Significant Characteristic relating to Process Control (SPC)

Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Cole Hersee Co.
 20 Old Colony Ave., South Boston, MA, 02127
 Pnn: 617-268-2100 Web: www.colehersee.com

Description:
SOLENOID

Drawing / Part No: 24008
Current Rev: SEE PAGE 1

Used On or Ref.: Scale: **1:1**

Drawn By: **CF** Date: **4/1/66**

Responsible Engineer: **N/A** Pg. 5 of 5