Automatic Switch Co.

Manufacturers of
DEPENDABLE CONTROL
Since 1888

ASCO

FLORHAM PARK,NEW JERSEY 07932 • N.J.-(201) 966-2000 / N.Y.-(212) 344-3765

November 28, 1989

U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: T. Jerrell Carter, Jr.
Office of Nuclear Reactor Regulation

Subject: U.S. NRC Information Notice 89-66

Dear Mr. Carter:

Attached for your information are the final versions of the two ASCO Field Notices recently prepared to provide additional information in connection with Information Notice 89-66:

"Field Notification Concerning the
Qualified Life of ASCO Catalog NP-1 Valves"

"Revised Field Notification
of the Discontinuation
of NP8323 Valve Line "

These notices have been mailed to all Nuclear Generating Stations in the United States and to ASCO's OEM and NSSS customers.

We appreciate your cooperation in reviewing and helping to finalize this notice.

If you require anything else, please feel free to call me at 201/966-2244.

Sincerely,

AUTOMATIC SWITCH COMPANY

John R. Shank

John R. Shank
Product Engineering Manager
Valve Engineering Department

/mm

Per T.J. Carter
ZZZZ
1/1 See Attached Dist

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October 27, 1989

TO: ASCO Catalog NP-1 Valve Users

SUBJECT: U.S. NRC Information Notice Number 89-66

1. NRC Information Notice No. 89-66 "Qualification Life of Solenoid Valves" discusses a recent event at Grand Gulf Unit I involving ASCO NP8323A20E valves being used as main steam isolation valve (MSIV) pilots.

2. The attached two ASCO Notices provide additional information on this subject:

   A. ASCO Notice "Field Notification Concerning the Qualified Life of ASCO Catalog NP-1 Valves" discusses the various options available when calculating qualified life of ASCO Catalog NP-1 valves and provides the latest available temperature rise data for the ASCO Catalog NP-1 valves series.

   B. ASCO Notice "Revised Field Notification of the Discontinuation of NP8323 Valve Line" explains the current ASCO position concerning NP8323 valves used for MSIV piloting applications and discusses ASCO's policy of discontinuation of the NP8323 valve series.

3. Automatic Switch Company will do whatever we can to assist you in a smooth transition from use of the NP8323 valve to a pair of NP8320 valves in MSIV piloting applications. We also are available to provide whatever assistance we can in determining the qualified life of any ASCO Catalog NP-1 series valve.

JRS/mm

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Field Notification Concerning
The Qualified Life of
ASCO Catalog NP-1 Valves

1. NRC Information Notice No. 89-66 "Qualification Life of Solenoid Valves" describes a recent event involving ASCO NP8323 series valves being used to control main steam isolation valves. As reported in this NRC notice, the utility involved reported that the elastomers in these valves, which had been in service for several years, exhibited evidence of having reached an end of life condition prematurely. Thermal qualified life calculations performed by the utility indicated that the valves still had a substantial period of qualified life remaining. These Arrhenius calculations were performed prior to the availability of the applicable attached temperature profile drawing. Subsequently, Arrhenius calculations using the latest applicable temperature profile drawing and using the applicable activation energy value indicated in ASCO's Qualification Report AQR-67368/Rev. 1, yielded results that indicated the valves had already exceeded their qualified life.

2. While other non-thermal factors may have contributed to the condition of the elastomers in these valves, the important point to remember is that a calculated qualified life value may not always accurately indicate the true life of a device. For this reason, qualified life values serve best when used as service life indicators augmented with field performance history and a periodic surveillance program.

3. Thermal qualified life values may vary depending on the method used for determination as well as the data used in thermal life calculations. In the earliest ASCO qualification programs, qualified life was established as a fixed period based on the use of the 10°C Rule. Later, ASCO programs used Arrhenius calculations but were based on ambient temperatures rather than actual component temperatures. Since there are many variables that must be considered in qualified life calculations and since the NRC has not endorsed any single thermal qualified life calculation method, ASCO leaves it to each individual user to determine the appropriate qualified life calculation method for each specific application.

-continued-

4. The profile drawings attached cover various ASCO Catalog NP-1 valves. These drawings indicate the temperature that critical valve components will reach when continuously energized at various ambient temperatures. These temperatures are based on conservative testing conducted with no air circulation. When using these drawings, care should be taken to assure that the proper temperature profile drawing is chosen. Significant differences in component temperatures may exist between similarly constructed valves or between AC and DC constructions of the same valve.

5. When establishing replacement schedules for Catalog NP-1 valves, the user should consider the above information. Any request for additional information should be directed to the ASCO Valve Sales Department (Telephone: 201/966-2501, FAX 201/966-2628).

JRS:mm

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The following table shows the correct temperature profile drawing for each catalog number appearing in Catalog NP-1. The catalog number that appears on each temperature profile drawing is the specific valve that was tested. Due to similarity in constructions, the catalog numbers shown next to each drawing are applicable.

BULLETIN NUMBERS	CATALOG NUMBERS		TEMPERATURE PROFILE DRAWING NUMBER
206-380 208-266	206-380-1 206-380-2 206-380-3 206-380-4 206-380-5 206-380-6 206-380-7	208-266-1 208-266-2 208-266-3 208-266-4 208-266-5	FV228-060
206-381 208-448	206-381-1 206-381-2 206-381-3 206-381-4 206-381-5 206-381-6 206-381-7	208-448-1 208-448-2 208-448-3 208-448-4 208-448-5	FV228-061
206-832 210-036	206-832-1 206-832-2 206-832-3 206-832-4 206-832-5 206-832-6 206-832-7	210-036-1 210-036-2 210-036-3 210-036-4 210-036-5	FV228-062
NP8314 (AC)	NP8314C13E NP8314C14E NP8314C28E NP8314C29E NP8314C61E NP8314C62E	NP8314C13V NP8314C14V NP8314C28V NP8314C29V NP8314C61V NP8314C62V	FV236-907
NP8314 (AC)	NP8314C13EL NP8314C14EL NP8314C28EL NP8314C29EL NP8314C61EL NP8314C62EL	NP8314C13LV NP8314C14LV NP8314C28LV NP8314C29LV NP8314C61LV NP8314C62LV	FV236-909
NP8314 (DC)	NP8314C13E NP8314C14E NP8314C28E NP8314C29E NP8314C61E NP8314C62E	NP8314C13V NP8314C14V NP8314C28V NP8314C29V NP8314C61V NP8314C62V	FV236-908
NP8314 (DC)	NP8314C13EL NP8314C14EL NP8314C28EL NP8314C29EL NP8314C61EL NP8314C62EL	NP8314C13LV NP8314C14LV NP8314C28LV NP8314C29LV NP8314C61LV NP8314C62LV	FV236-910

BULLETIN NUMBERS	CATALOG NUMBERS		TEMPERATURE PROFILE DRAWING NUMBER
NP8316 (AC)	NP831654E	NP831654V	FV228-063
	NP831656E	NP831656V	
	NP831664E	NP831664V	
	NP831666E	NP831666V	
NP8316 (AC)	NP831655E	NP831655V	FV228-064
	NP831657E	NP831657V	
	NP831665E	NP831665V	
	NP831667E	NP831667V	
NP8316 (AC)	NP8316E34E	NP8316E34V	FV228-066
	NP8316E35E	NP8316E35V	
	NP8316E36E	NP8316E36V	
	NP8316E37E	NP8316E37V	
	NP8316A74E	NP8316A74V	
	NP8316A75E	NP8316A75V	
	NP8316A76E	NP8316A76V	
	NP8316A77E	NP8316A77V	
NP8316 (DC)	NP8316E34E	NP8316E34V	FV228-065
	NP8316E35E	NP8316E35V	
	NP8316E36E	NP8316E36V	
	NP8316E37E	NP8316E37V	
	NP831654E	NP831654V	
	NP831655E	NP831655V	
	NP831656E	NP831656V	
	NP831657E	NP831657V	
	NP831664E	NP831664V	
	NP831665E	NP831665V	
	NP831666E	NP831666V	
	NP831667E	NP831667V	
	NP8316A74E	NP8316A74V	
	NP8316A75E	NP8316A75V	
	NP8316A76E	NP8316A76V	
	NP8316A77E	NP8316A77V	
NP8320 (AC)	NP8320A172E	NP8320A172V	FV228-067
	NP8320A174E	NP8320A174V	
	NP8320A176E	NP8320A176V	
	NP8320A178E	NP8320A178V	
	NP8320A182E	NP8320A182V	
	NP8320A184E	NP8320A184V	
	NP8320A186E	NP8320A186V	
	NP8320A188E	NP8320A188V	
	NP8320A192E	NP8320A192V	
	NP8320A194E	NP8320A194V	
	NP8320A196E	NP8320A196V	
	NP8320A198E	NP8320A198V	
NP8320 (AC)	NP8320A173E	NP8320A173V	FV228-068
	NP8320A175E	NP8320A175V	
	NP8320A177E	NP8320A177V	
	NP8320A179E	NP8320A179V	
	NP8320A183E	NP8320A183V	
	NP8320A185E	NP8320A185V	
	NP8320A187E	NP8320A187V	
	NP8320A189E	NP8320A189V	
	NP8320A193E	NP8320A193V	
	NP8320A195E	NP8320A195V	
	NP8320A197E	NP8320A197V	
	NP8320A199E	NP8320A199V	

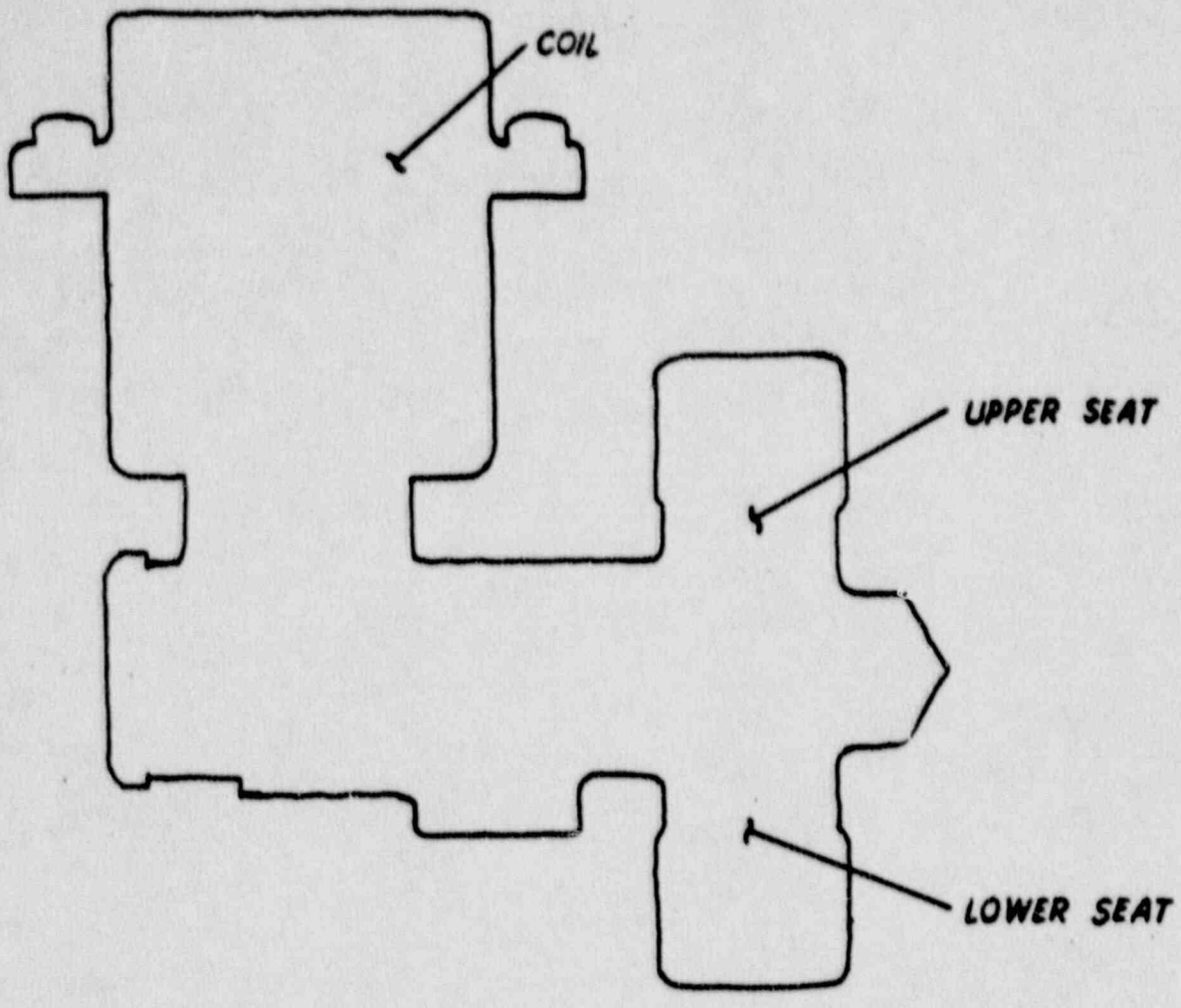
BULLETIN NUMBERS	CATALOG NUMBERS		TEMPERATURE PROFILE DRAWING NUMBER
NP8320 (AC)	NP832057E	NP832057V	FV228-069
	NP832058E	NP832058V	
	NP832059E	NP832059V	
	NP832060E	NP832060V	
	NP832061E	NP832061V	
	NP832062E	NP832062V	
	NP832063E	NP832063V	
	NP832064E	NP832064V	
	NP832065E	NP832065V	
	NP832066E	NP832066V	
	NP832067E	NP832067V	
	NP832068E	NP832068V	
	NP832069E	NP832069V	
	NP832070E	NP832070V	
	NP832093E	NP832093V	
	NP832094E	NP832094V	
	NP832095E	NP832095V	
	NP832096E	NP832096V	
NP8320 (DC)	NP832057E	NP832057V	FV238-403
	NP832058E	NP832058V	
	NP832059E	NP832059V	
	NP832060E	NP832060V	
	NP832061E	NP832061V	
	NP832062E	NP832062V	
	NP832063E	NP832063V	
	NP832064E	NP832064V	
	NP832065E	NP832065V	
	NP832066E	NP832066V	
	NP832067E	NP832067V	
	NP832068E	NP832068V	
	NP832069E	NP832069V	
	NP832070E	NP832070V	
	NP832093E	NP832093V	
	NP832094E	NP832094V	
	NP832095E	NP832095V	
	NP832096E	NP832096V	
	NP8320A172E	NP8320A172V	
	NP8320A173E	NP8320A173V	
	NP8320A174E	NP8320A174V	
	NP8320A175E	NP8320A175V	
	NP8320A176E	NP8320A176V	
	NP8320A177E	NP8320A177V	
	NP8320A178E	NP8320A178V	
	NP8320A179E	NP8320A179V	
	NP8320A182E	NP8320A182V	
	NP8320A183E	NP8320A183V	
	NP8320A184E	NP8320A184V	
	NP8320A185E	NP8320A185V	
	NP8320A186E	NP8320A186V	
	NP8320A187E	NP8320A187V	
	NP8320A189E	NP8320A188V	
	NP8320A188E	NP8320A189V	
	NP8320A192E	NP8320A192V	
	NP8320A194E	NP8320A193V	
	NP8320A193E	NP8320A194V	
	NP8320A195E	NP8320A195V	
	NP8320A196E	NP8320A196V	
	NP8320A197E	NP8320A197V	
	NP8320A198E	NP8320A198V	
	NP8320A199E	NP8320A199V	

BULLETIN NUMBERS	CATALOG NUMBERS		TEMPERATURE PROFILE DRAWING NUMBER
NP8321 (AC)	NP8321A1E	NP8321A1V	FV228-070
	NP8321A2E	NP8321A2V	
	NP8321A3E	NP8321A3V	
	NP8321A4E	NP8321A4V	
NP8321 (AC)	NP8321A5E	NP8321A5V	FV228-071
	NP8321A6E	NP8321A6V	
	NP8321A7E	NP8321A7V	
	NP8321A8E	NP8321A8V	
NP8321 (DC)	NP8321A1E	NP8321A1V	FV228-072
	NP8321A2E	NP8321A2V	
	NP8321A3E	NP8321A3V	
	NP8321A4E	NP8321A4V	
	NP8321A5E	NP8321A5V	
	NP8321A6E	NP8321A6V	
	NP8321A7E	NP8321A7V	
	NP8321A8E	NP8321A8V	
NP8323 (AC/AC)	NP8323A19E	NP8323A19V	FV236-843
	NP8323A20E	NP8323A20V	
	NP8323A21E	NP8323A21V	
	NP8323A22E	NP8323A22V	
	NP8323A23E	NP8323A23V	
	NP8323A24E	NP8323A24V	
	NP8323A27E	NP8323A27V	
	NP8323A28E	NP8323A28V	
	NP8323A29E	NP8323A29V	
	NP8323A30E	NP8323A30V	
	NP8323A31E	NP8323A31V	
	NP8323A32E	NP8323A32V	
NP8323 (AC/DC)	NP8323A35E	NP8323A35V	FV236-844
	NP8323A36E	NP8323A36V	
	NP8323A37E	NP8323A37V	
	NP8323A38E	NP8323A38V	
	NP8323A39E	NP8323A39V	
	NP8323A40E	NP8323A40V	
	NP8323A43E	NP8323A43V	
	NP8323A44E	NP8323A44V	
	NP8323A45E	NP8323A45V	
	NP8323A46E	NP8323A46V	
	NP8323A47E	NP8323A47V	
	NP8323A48E	NP8323A48V	
NP8344 (AC)	NP8344B46E	NP8344B46V	FV236-903
	NP8344B50E	NP8344B50V	
	NP8344B52E	NP8344B52V	
	NP8344B54E	NP8344B54V	
	NP8344B56E	NP8344B56V	
	NP8344B58E	NP8344B58V	
	NP8344B62E	NP8344B62V	
	NP8344B64E	NP8344B64V	
	NP8344B66E	NP8344B66V	
	NP8344B68E	NP8344B68V	
NP8344 (AC)	NP8344A70E	NP8344A70V	FV236-905
	NP8344A71E	NP8344A71V	
	NP8344A72E	NP8344A72V	
	NP8344A73E	NP8344A73V	
	NP8344A74E	NP8344A74V	
	NP8344A75E	NP8344A75V	
	NP8344A76E	NP8344A76V	
	NP8344A77E	NP8344A77V	
	NP8344A78E	NP8344A78V	
	NP8344A79E	NP8344A79V	

BULLETIN NUMBERS	CATALOG NUMBERS		TEMPERATURE PROFILE DRAWING NUMBER
NP8344 (DC)	NP8344B46E	NP8344B46V	FV236-904
	NP8344B50E	NP8344B50V	
	NP8344B52E	NP8344B52V	
	NP8344B54E	NP8344B54V	
	NP8344B56E	NP8344B56V	
	NP8344B58E	NP8344B58V	
	NP8344B62E	NP8344B62V	
	NP8344B64E	NP8344B64V	
	NP8344B66E	NP8344B66V	
	NP8344B68E	NP8344B68V	
NP8344 (DC)	NP8344A70E	NP8344A70V	FV236-906
	NP8344A71E	NP8344A71V	
	NP8344A72E	NP8344A72V	
	NP8344A73E	NP8344A73V	
	NP8344A74E	NP8344A74V	
	NP8344A75E	NP8344A75V	
	NP8344A76E	NP8344A76V	
	NP8344A77E	NP8344A77V	
	NP8344A78E	NP8344A78V	
	NP8344A79E	NP8344A79V	

FV-228-060

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	UPPER SEAT	LOWER SEAT
25° C	178° C	54° C	54° C
49° C	194° C	74° C	74° C
66° C	210° C	90° C	90° C
131° C	278° C	151° C	151° C



CATALOG NUMBER 206380 3 R F 120/60 (RESILIENT SEATS)

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-30-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCF / [illegible]	2/1/84 / 2/2/84

NONE SCALE | 206-380 ASSY. REF. NO

ER NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

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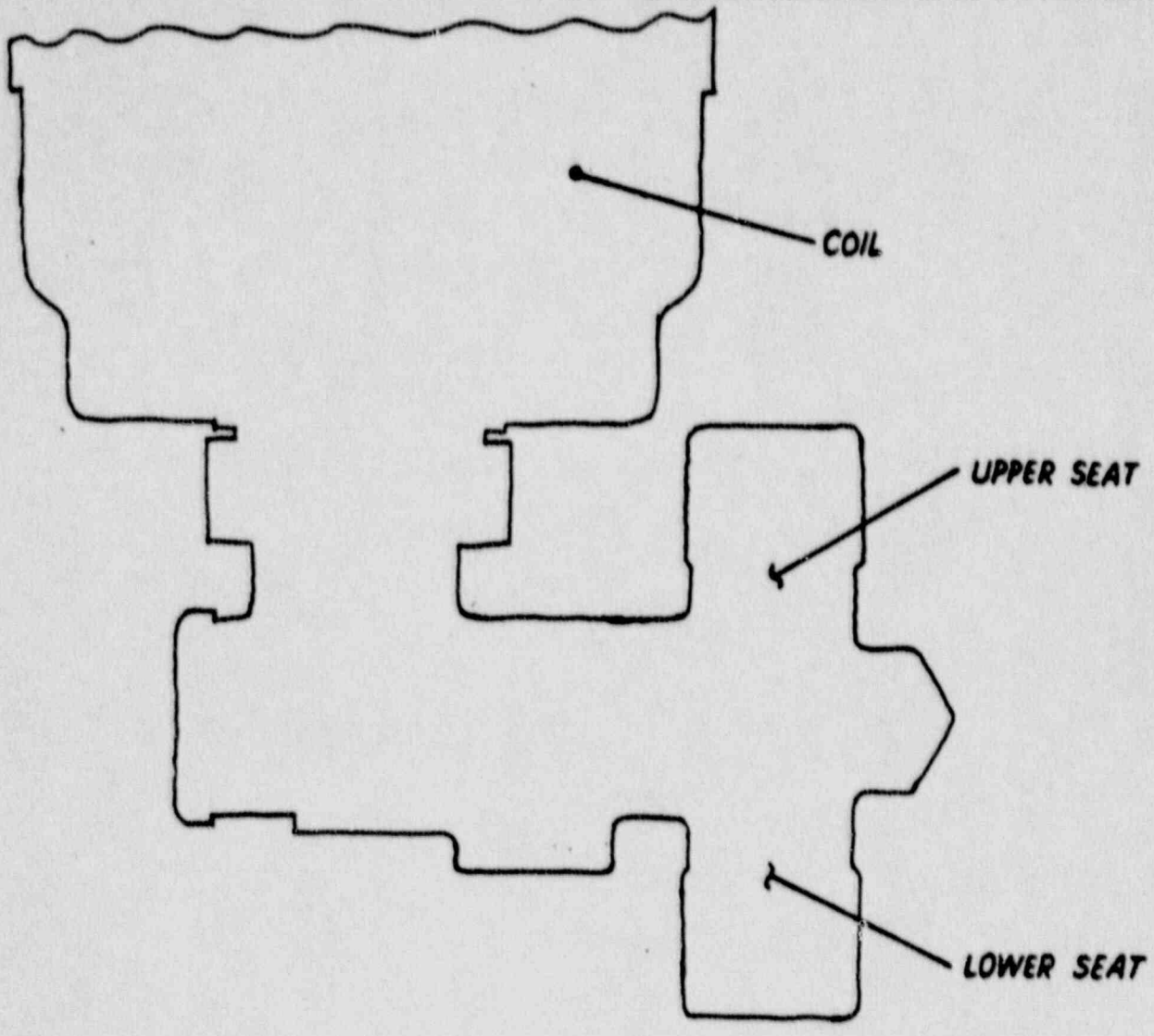
FV-228-060

CHG LTR: ~~A~~ ~~B~~ ~~C~~ D

FV-228-061

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	UPPER SEAT	LOWER SEAT
25° C	135°C	54°C	54°C
49° C	154°C	74°C	74°C
66° C	167°C	90°C	90°C
131° C	211°C	151°C	151°C



CATALOG NUMBER 206381 6 R F 125/DC (RESILIENT SEATS)

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-30-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL.	JCF	2/1/84
	9R5	2/2/84

NONE SCALE

206-381 ASSY. REF. NO

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

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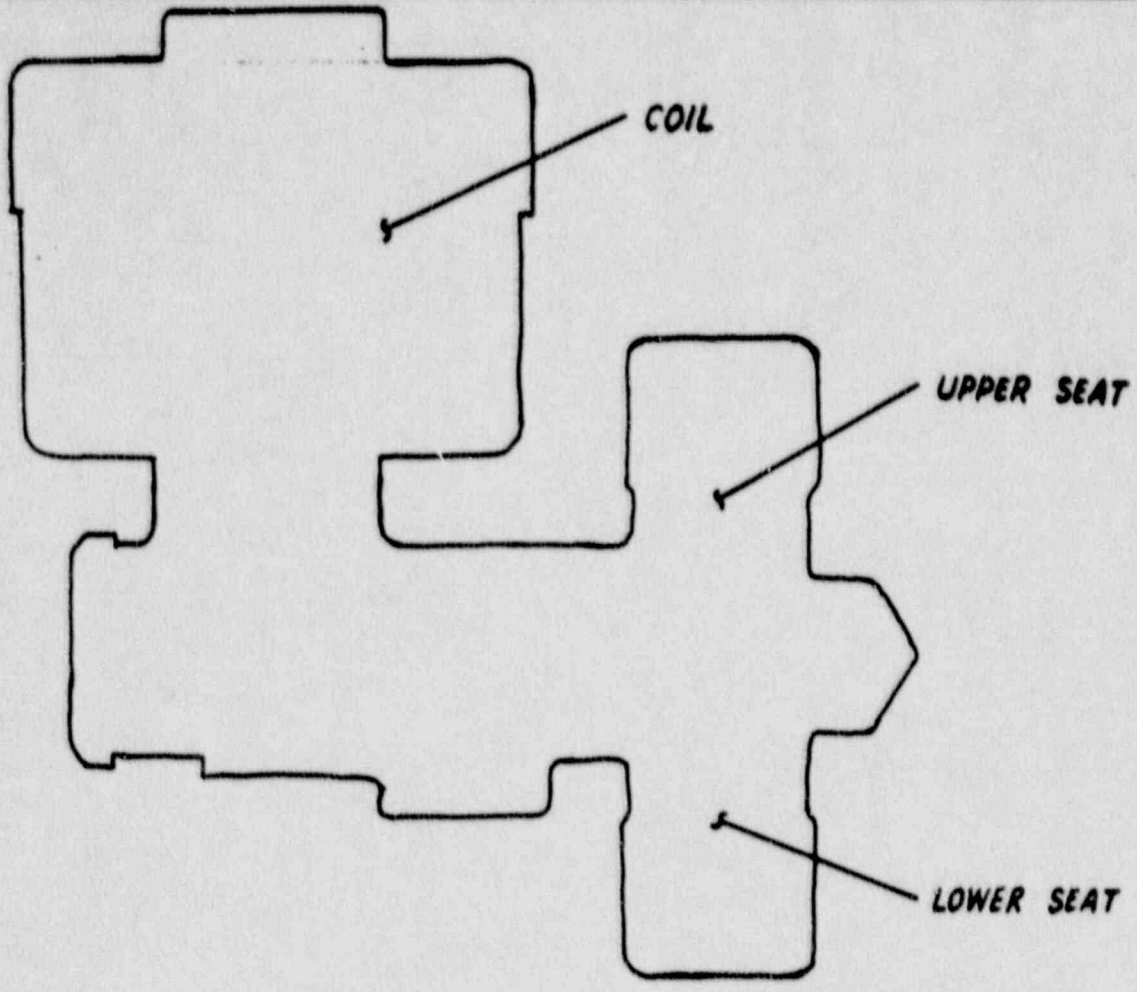
FV-228-061

CHG LTR: A B C D

FV-228-062

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	UPPER SEAT	LOWER SEAT
25° C	172°C	54°C	54°C
49° C	194°C	74°C	74°C
66° C	210°C	90°C	90°C
131° C	270°C	151°C	151°C



CATALOG NUMBER 206832 3 R F 120/60 (RESILIENT SEATS)

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS

WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	DCW	1-30-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCF / SRS	2/1/84 / 2/2/84

NONE (SCALE) | 206-832 (ASSY. REF. NO)

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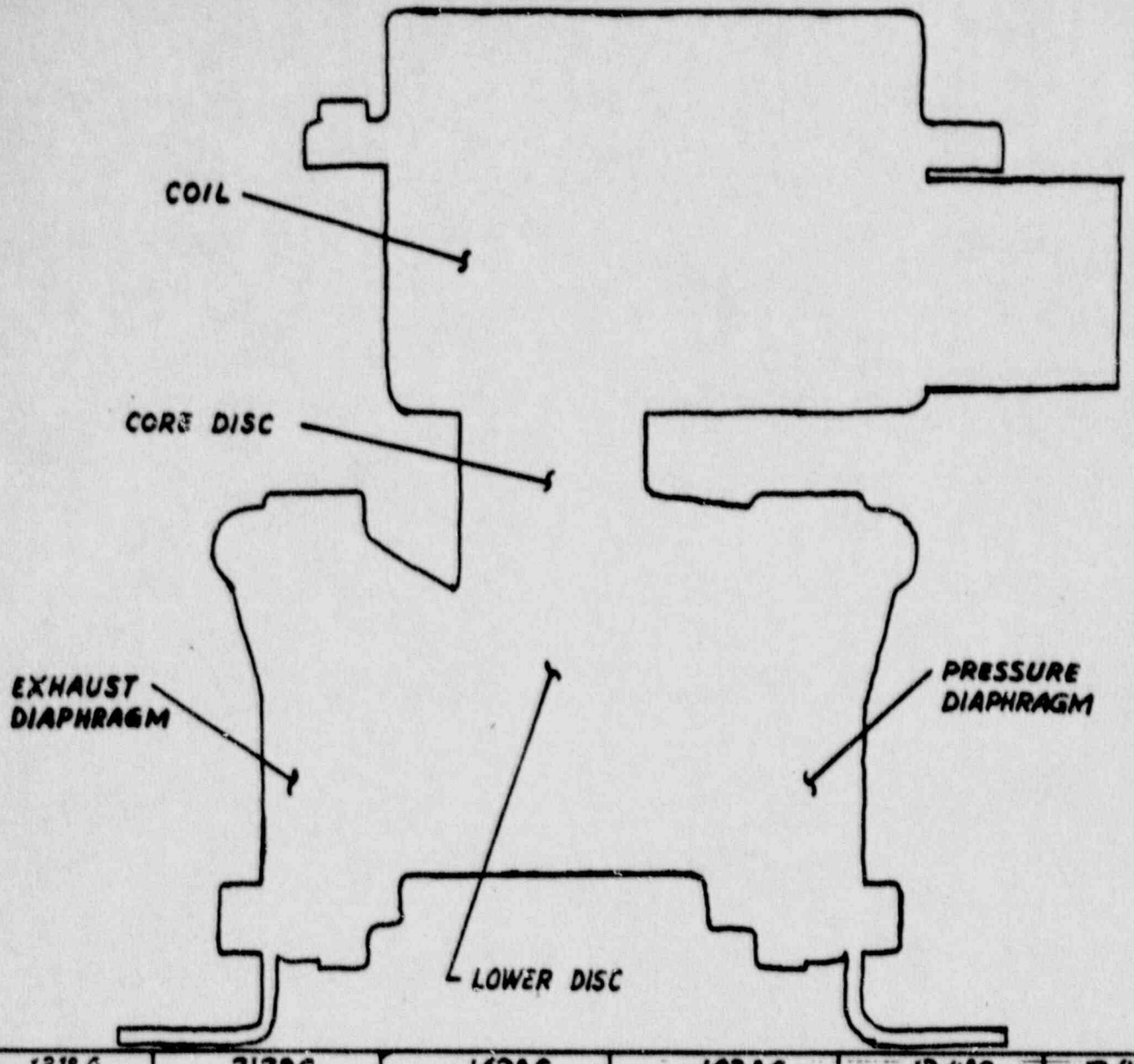
FV-228-062

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

CHG LTR: ~~A~~ ~~B~~ ~~C~~ D

FV-228-063

CATALOG NUMBER NP 8316 54E 120/60



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PRESSURE DIAPH.	EXHAUST DIAPH.
131° C	212°C	163°C	143°C	134°C	134°C
66° C	153°C	105°C	84°C	75°C	75°C
49° C	139°C	90°C	69° C	60°C	60°C
25° C	117°C	69°C	48°C	38°C	38°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-30-84
TRACED		
CHECKED		
DFTG APVD		
ENGRG APPVL	JCF	2/1/84
	GRS	2/2/84

NONE — SCALE

206-384 — ASSY. REF. NO

ER NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

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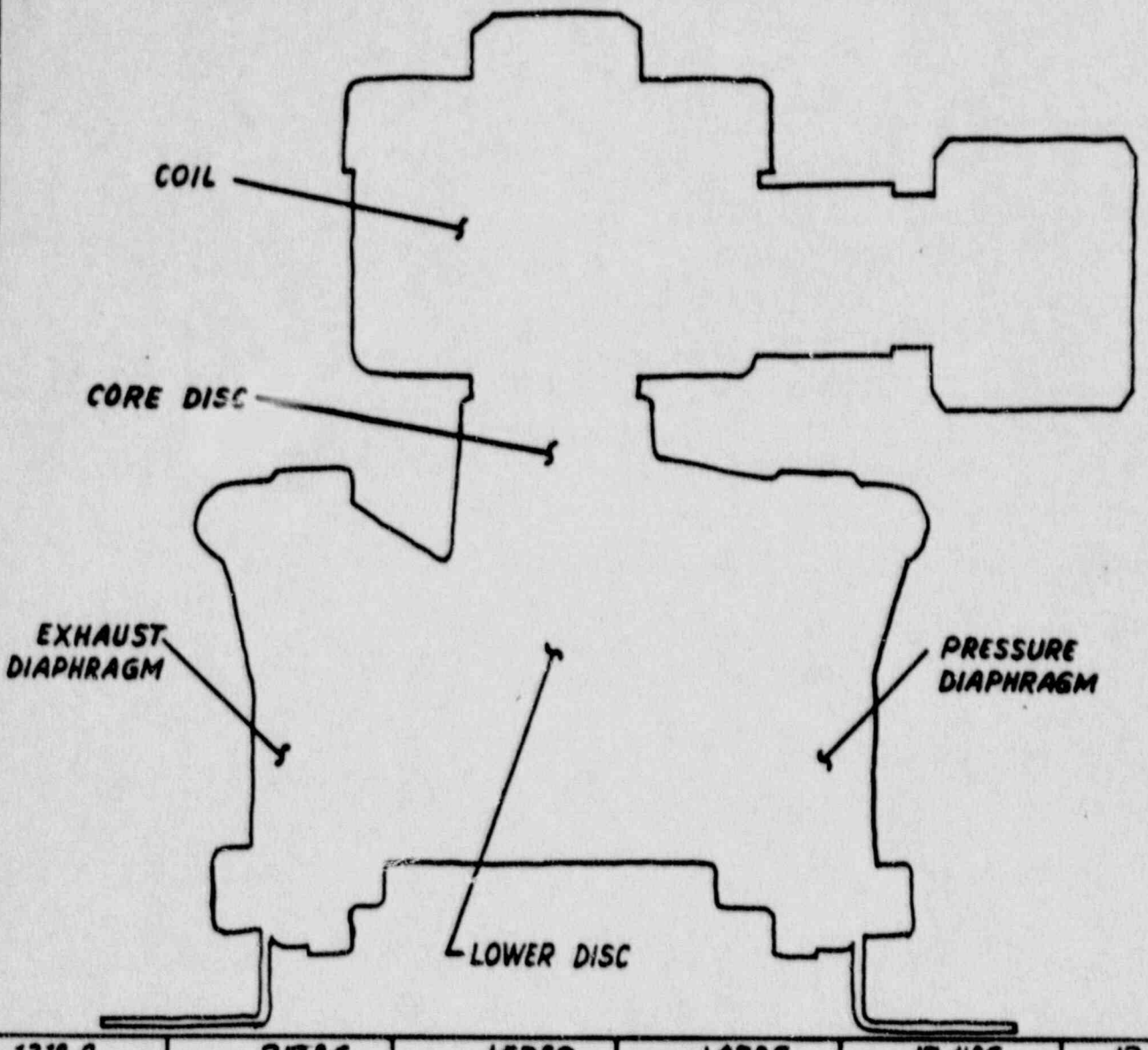
FV-228-063

CHG LTR: A B C D

FV-228-064

CATALOG NUMBER NP8316 55E 120/60



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PRESSURE DIAPH.	EXHAUST DIAPH.
131° C	212°C	163°C	143°C	134°C	134°C
66° C	153°C	105°C	84°C	75°C	75°C
49° C	139°C	90°C	69°C	60°C	60°C
25° C	117°C	69°C	48°C	38°C	38°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-30-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCF	2/1/84
	GRS	2/2/84

NONE SCALE

208-400 ASSY. REF. NO

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

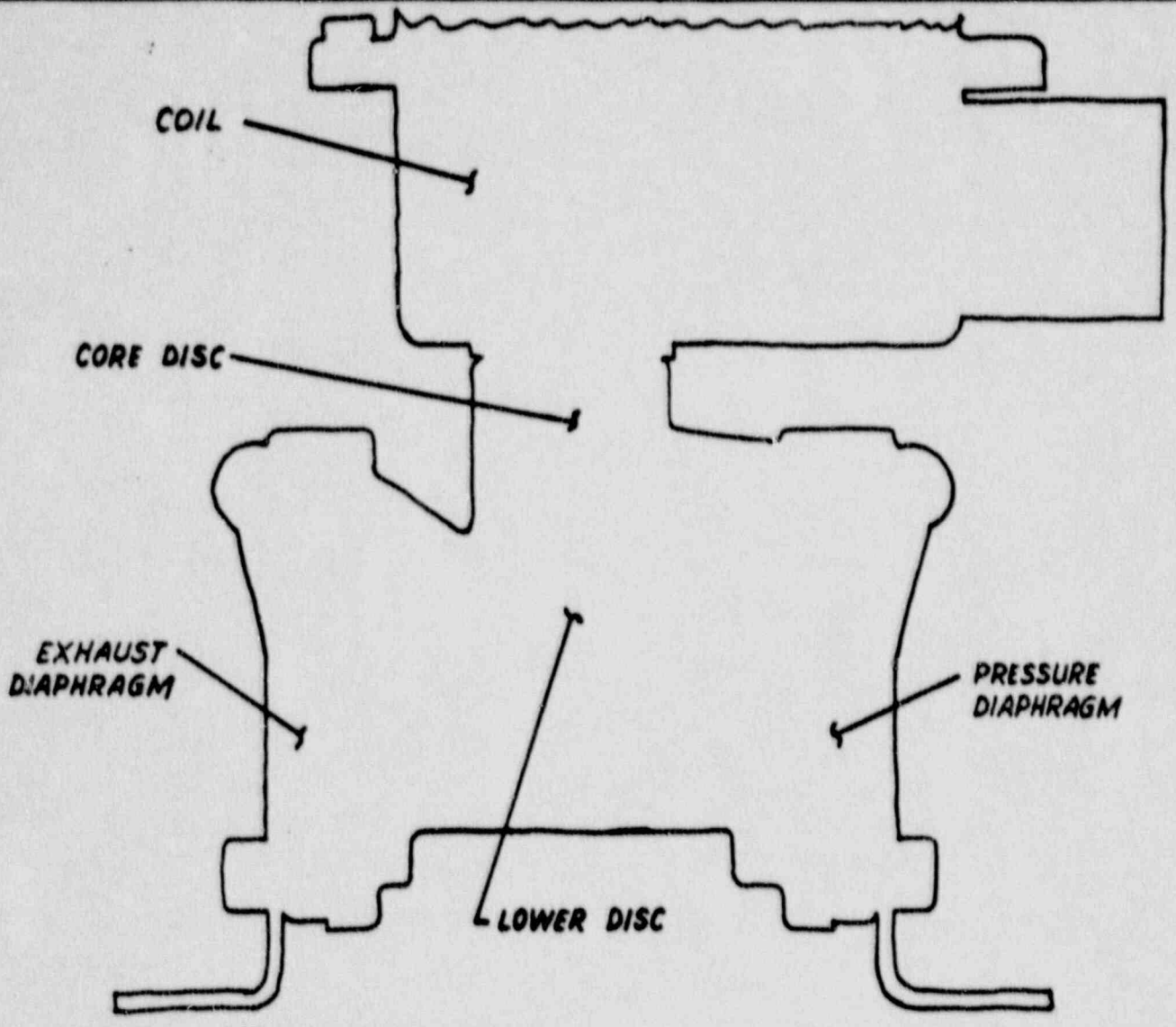
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. FILE

FV-228-064

CHG LTR [X] [X] [C] D

FV-228-065

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PRESSURE DIAPH.	EXHAUST DIAPH.
25° C	135°C	69°C	48°C	38°C	38°C
49° C	159°C	90°C	69°C	60°C	60°C
66°C	183°C	105°C	84°C	75°C	75°C
131°C	212°C	165°C	143°C	134°C	134°C



CATALOG NUMBER NP 8316 54E 125/DC

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-30-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCC	2/1/84
	[illegible]	2/2/84

NONE — SCALE

206-384 — ASSY. REF. NO

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CYC ☐	DP ☐	LA ☐	AG ☐

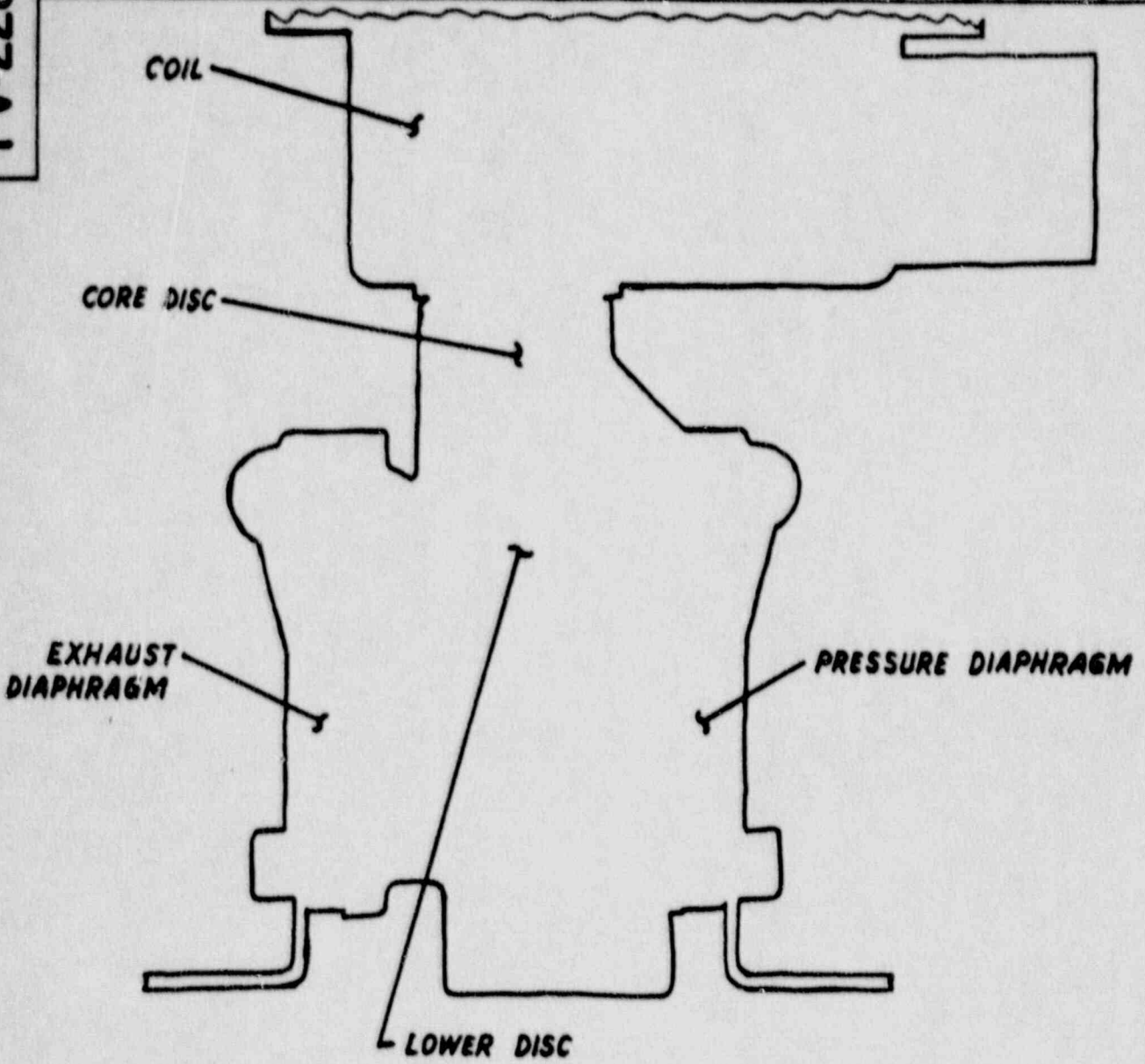
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. — FILE

FV-228-065

CHG LTR: A A C D

FV-228-066

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PRESSURE DIAPH.	EXHAUST DIAPH.
25°C	117°C	68°C	48°C	38°C	38°C
49° C	139°C	90°C	69°C	60°C	60°C
66° C	153°C	102°C	84°C	75°C	78°C
191° C	212°C	163°C	145°C	134°C	134°C



CATALOG NUMBER NP 8316 A 74E 120/60

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	DGW	1-31-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCF	2/1/84
	GRS	2/2/84

NONE — SCALE

208-279 — ABBY. REF. NO

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

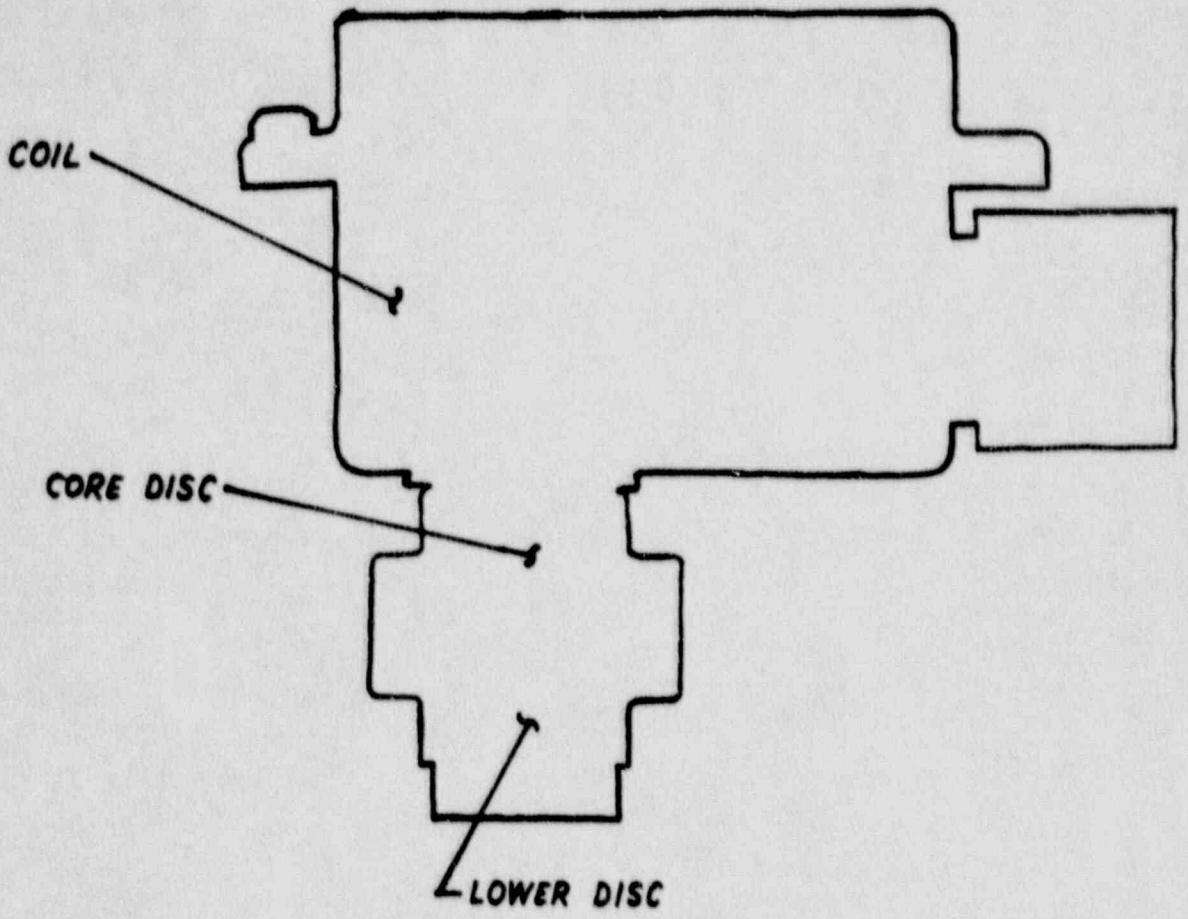
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. — FILE

FV-228-066

CHG LTR: ~~A~~ ~~B~~ ~~C~~ D

FV-228-067

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	CORE DISC	LOWER DISC
25° C	117° C	69° C	48° C
49° C	139° C	90° C	69° C
66° C	153° C	105° C	84° C
131° C	212° C	165° C	143° C



CATALOG NUMBER NP 8320 A 184E 120/60

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-31-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL.	JCF GRS	2/1/84 2/2/84

NONE — SCALE

206-385 — ASSY. REF. NO

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

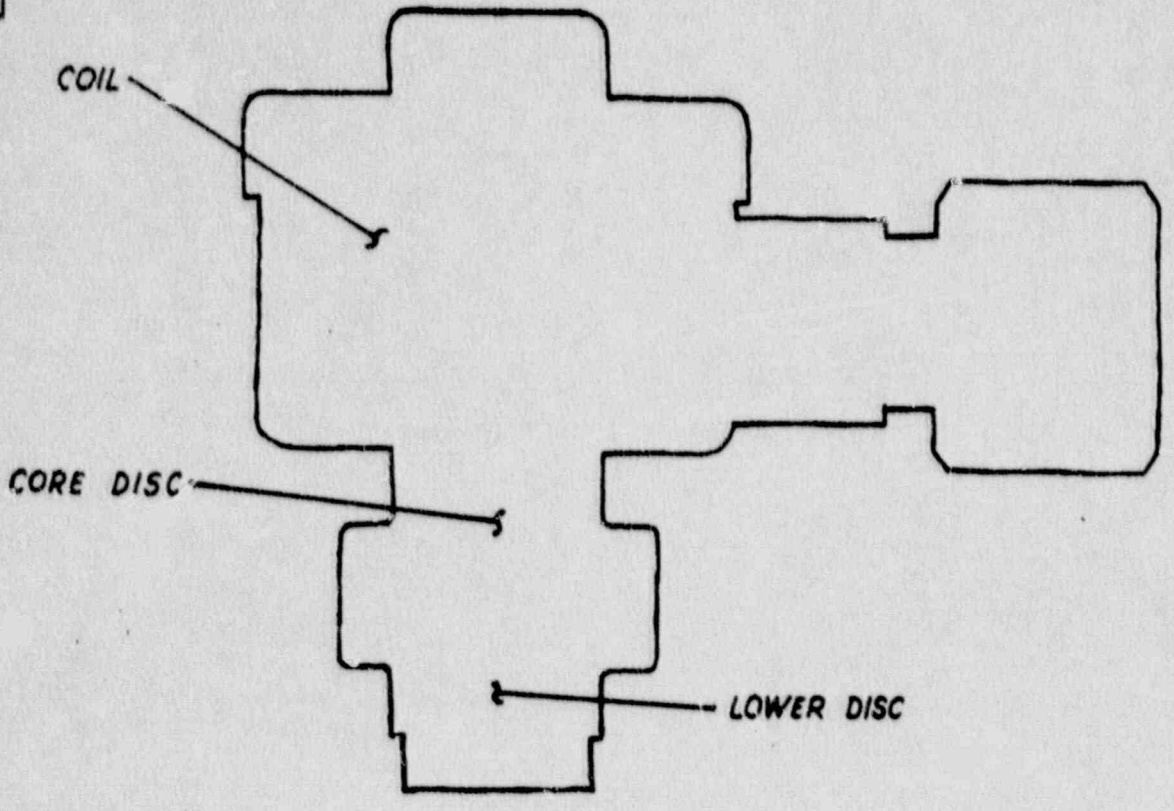
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. — FILE

FV-228-067

CHG LTR: X X C D

FV-228-068

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	CORE DISC	LOWER DISC
25° C	117° C	69° C	48° C
49° C	139° C	90° C	69° C
66° C	153° C	105° C	89° C
131° C	212° C	163° C	143° C



CATALOG NUMBER NP 8320 A 185E 120/60

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-31-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL.	JCF	2/1/84
	[illegible]	2/2/84

NONE — SCALE

210-050 — ASSY. REF. NO

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

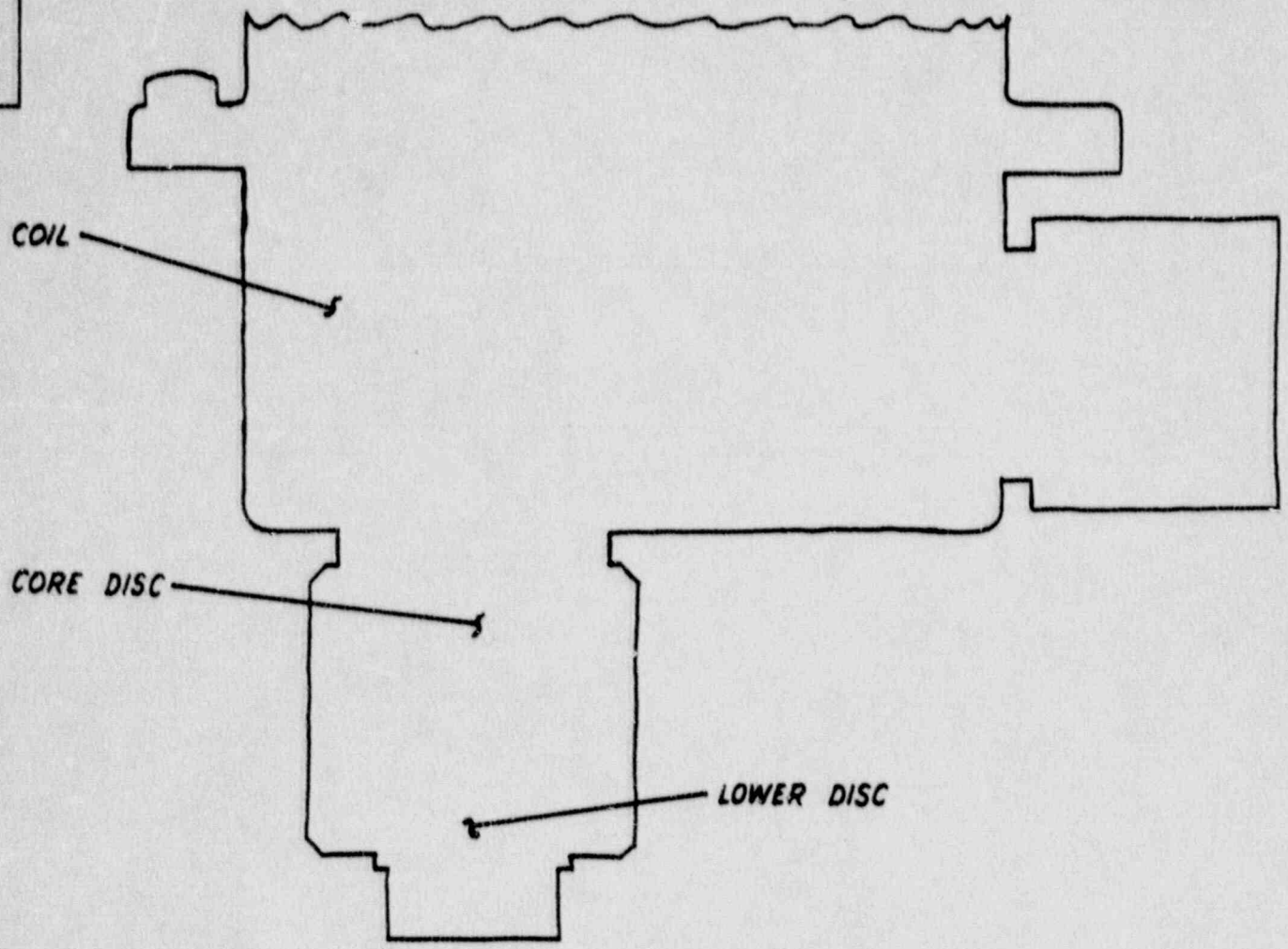
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. — FILE

FV-228-068

CHG LTR: ~~A~~ ~~B~~ ~~C~~ D

FV-228-069

AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	CORE DISC	LOWER DISC
25° C	117° C	69° C	48° C
49° C	139° C	90° C	69° C
66° C	153° C	105° C	89° C
131° C	212° C	163° C	143° C



CATALOG NUMBER NP 8320 G5E 120/60

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-31-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCF / GIS	2/1/84 / 2/2/84

NONE (SCALE) | 208-153 (ASSY. REF. NO)

Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. FILE

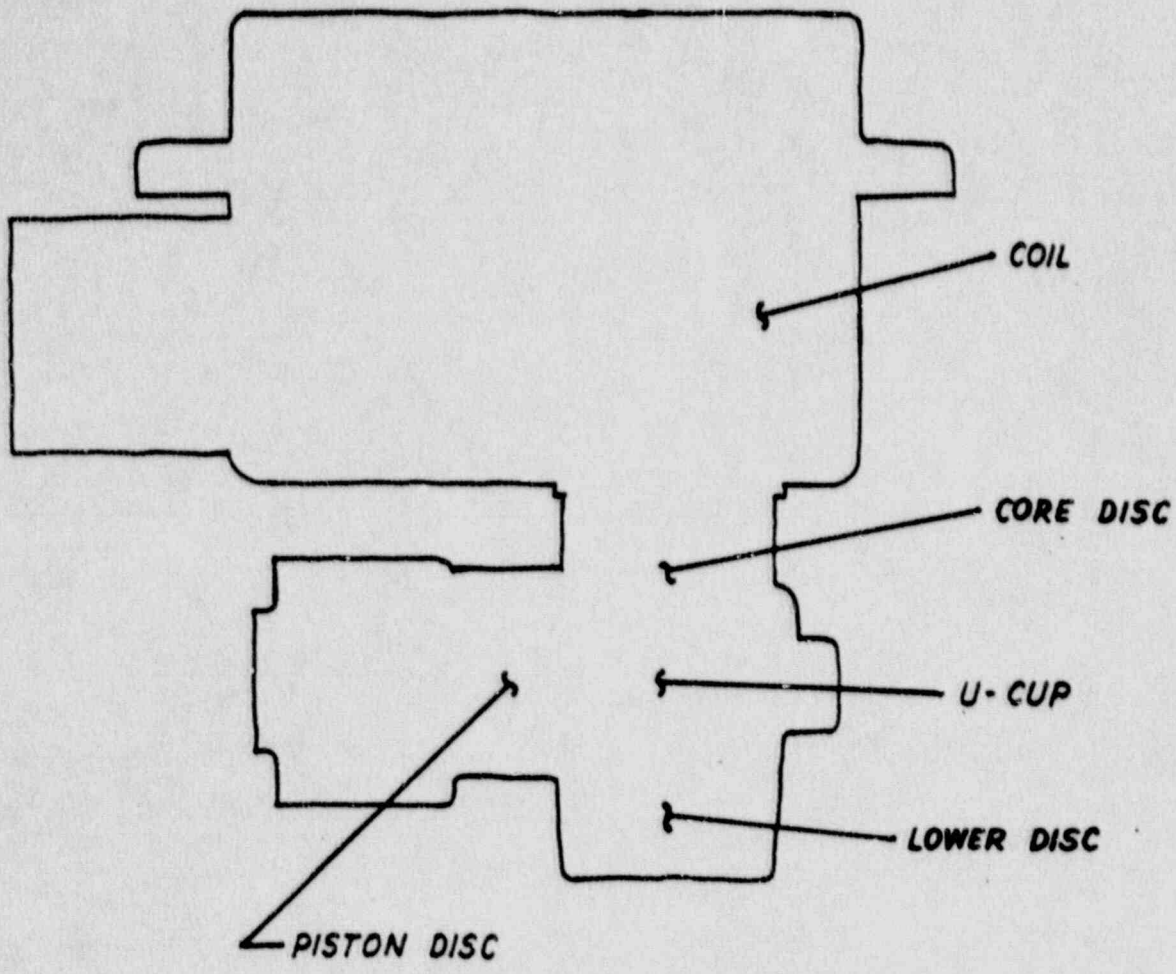
FV-228-069

E R NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

CHG LTR: ~~A~~ ~~B~~ ~~C~~ D

FV-228-070

CATALOG NUMBER NP 8321 A 2E 120/60



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PISTON DISC	U-CUP
131° C	212°C	163°C	143°C	145°C	145°C
66° C	153°C	105°C	84°C	86°C	86°C
49° C	139°C	90°C	69°C	71°C	71°C
25° C	117°C	69°C	48°C	50°C	50°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-31-84
TRACED		
CHECKED		
DFTG.APVD		
ENG.RG APPVL	JCF / GR	2/1/84 / 2/2/84

NONE (SCALE) | 206-386 (ASSY. REF. NO)

ER NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

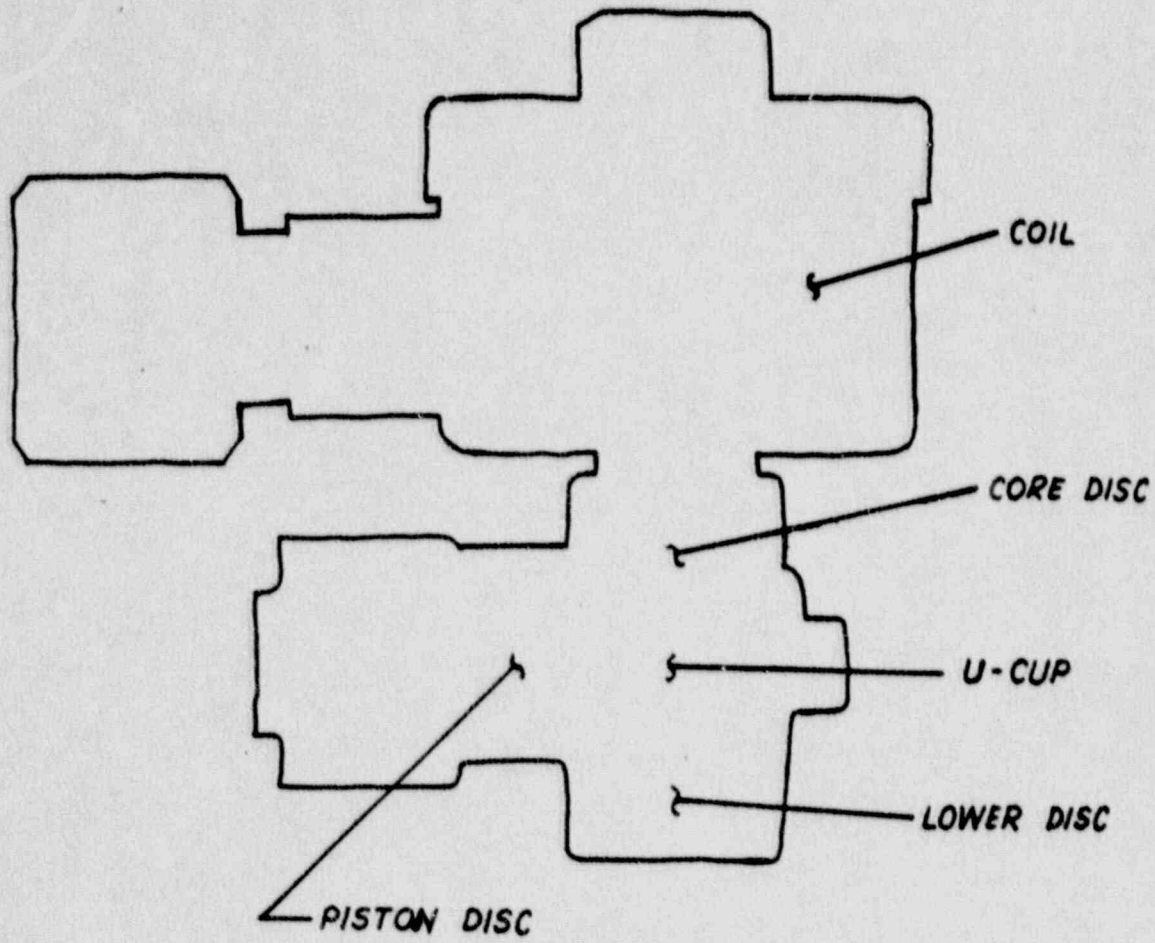
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. (FILE)

FV-228-070

CHG LTR: A B C D

FV-228-071

CATALOG NUMBER NP 8321 A 6E 120/60



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PISTON DISC	U-CUP
131° C	212°C	163°C	143°C	145°C	145°C
66° C	153° C	105°C	84° C	86° C	86° C
49° C	139° C	90° C	69° C	71° C	71° C
25° C	117°C	69°C	48°C	50°C	50° C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-31-84
TRACED		
CHECKED		
DFTG.APVD		
ENGRG APPVL	JCF	2/1/84
	SRS	2/2/84

NONE — SCALE

210-477 — ASSY. REF. NO

ER NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	CTC ☐	DP ☐	LA ☐	AG ☐

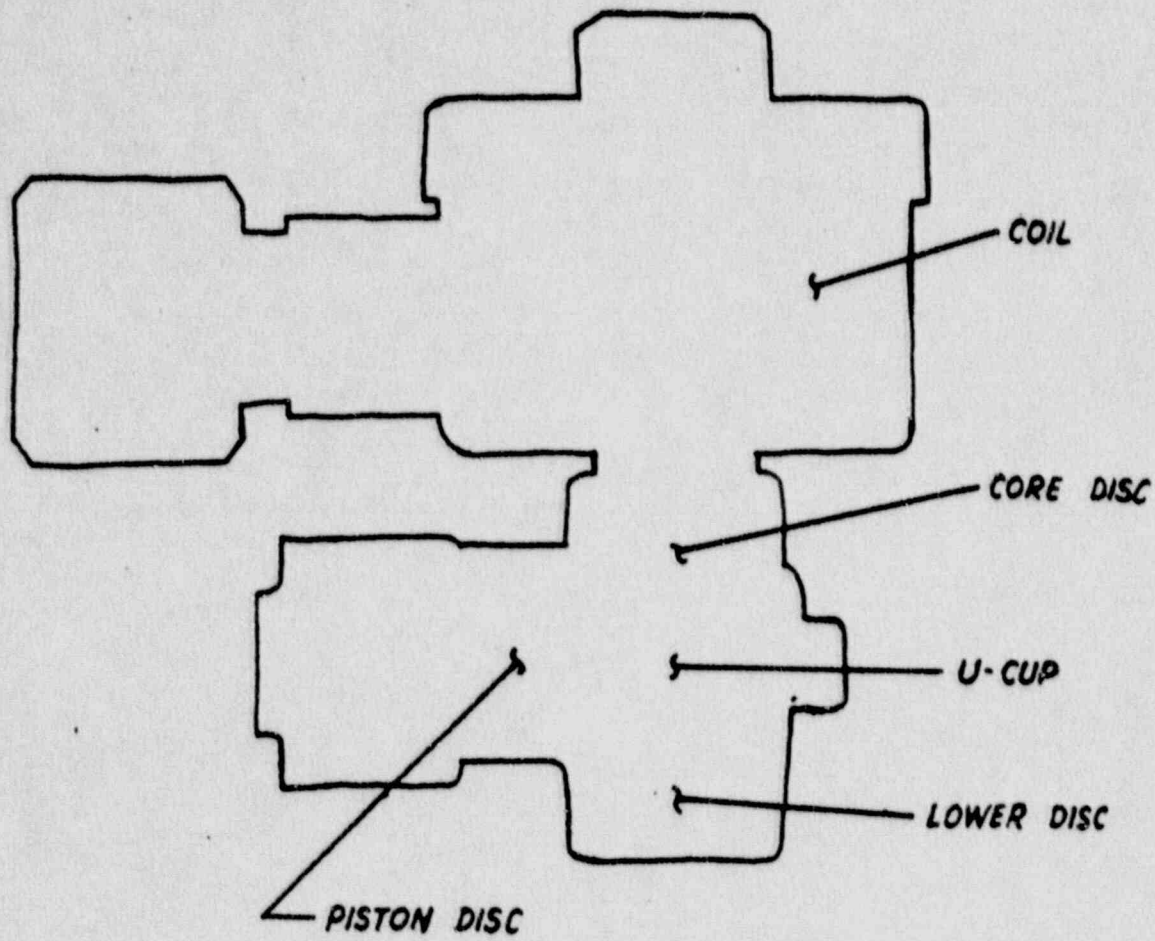
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. — FILE

FV-228-071

CHG LTR: ~~A~~ ~~B~~ ~~C~~ D

FV-228-072

CATALOG NUMBER NP 8321 A 6E 125/DC



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE				
	COIL	CORE DISC	LOWER DISC	PISTON DISC	U-CUP
131°C	211°C	163°C	143°C	145°C	145°C
66°C	167°C	105°C	84°C	86°C	86°C
49°C	154°C	90°C	69°C	71°C	71°C
25°C	135°C	69°C	48°C	50°C	50°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

	BY	DATE
DRAWN	OCW	1-27-84
TRACED		
CHECKED		
DFTG APVD		
ENGRG APPVL	JCF	2/1/84
	[illegible]	2/2/84

NONE (SCALE) | 210-477 (ASSY. REF. NO)

ER NO.	ITEM CHGD	CHG	DATE	APVD
AE ☐	AN ☐	AL ☐	AM ☐	AJ ☐
CH ☐	STC ☐	BP ☐	LA ☐	AG ☐

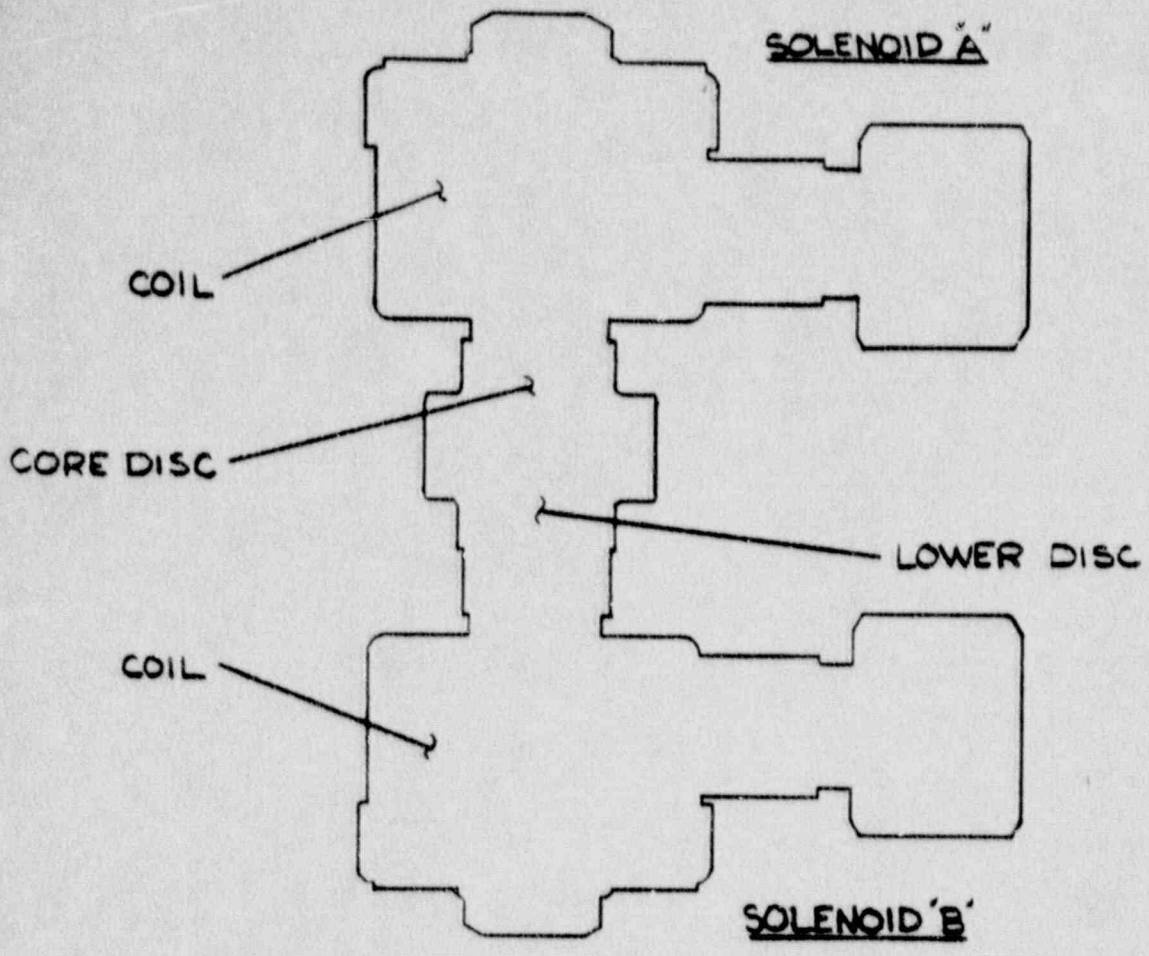
Automatic Switch Co. FLORHAM PARK, N. J. PRINTED IN U.S.A. (FILE)

FV-228-072

CHG LTR: A A & D

FV 236843

CATALOG NUMBER NP 8323 A20E AC/AC



AMBIENT TEMP	COIL - SOL. 'A'	COIL - SOL. 'B'	CORE DISC	LOWER DISC
	MAXIMUM TEMPERATURE			
131°C	219°C	227°C	176°C	170°C
66°C	163°C	175°C	121°C	113°C
49°C	147°C	160°C	108°C	99°C
25°C	126°C	141°C	88°C	77°C

ITEM

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	BWB	7-7-87
PROJ. APP.		
CHECKED	G.V.	7-7-87
DFT. APP		
ENG. APP.	JCF	7/7/87
	GRS	7/10/87

NONE (SCALE) | 210651 (ASSEM REF NO)

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PS ☐
AG ☐ ☐ ☐ ☐ ☐

CRT ☐

FV 236843

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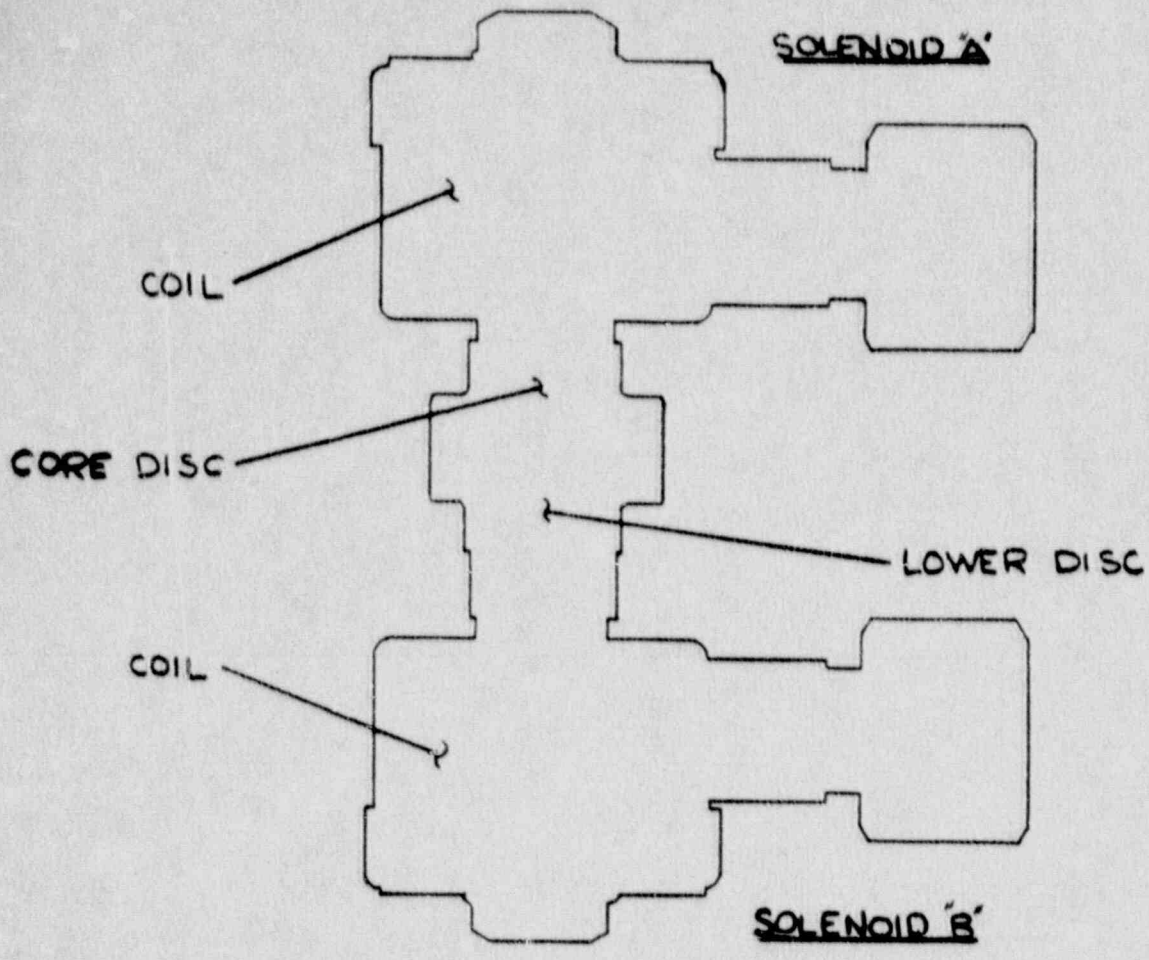
FILE

CHANGE LETTER A

FV 236844

CATALOG NUMBER NP 8323 A36E AC/DC



AMBIENT TEMP	COIL - SOL. 'A'	COIL - SOL. 'B'	CORE DISC	LOWER DISC
	MAXIMUM TEMPERATURE			
131 °C	219 °C	223 °C	174 °C	165 °C
66 °C	163 °C	177 °C	122 °C	112 °C
49 °C	147 °C	164 °C	108 °C	97 °C
25 °C	126 °C	150 °C	88 °C	77 °C

ITEM

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	BWB	7-7-87
PROJ. APP.		
CHECKED	G.V.	7-7-87
DFT. APP.		
ENG. APP.	JCF	7/7/87
	GRS	7/13/87

NONE (SCALE)

210651 (ASSEM REF NO)

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PS ☐
AG ☐ ☐ ☐ ☐ ☐

CRT ☐

FV 236844

Automatic Switch Co.
FLORHAM PARK, NEW JERSEY 07932 Printed

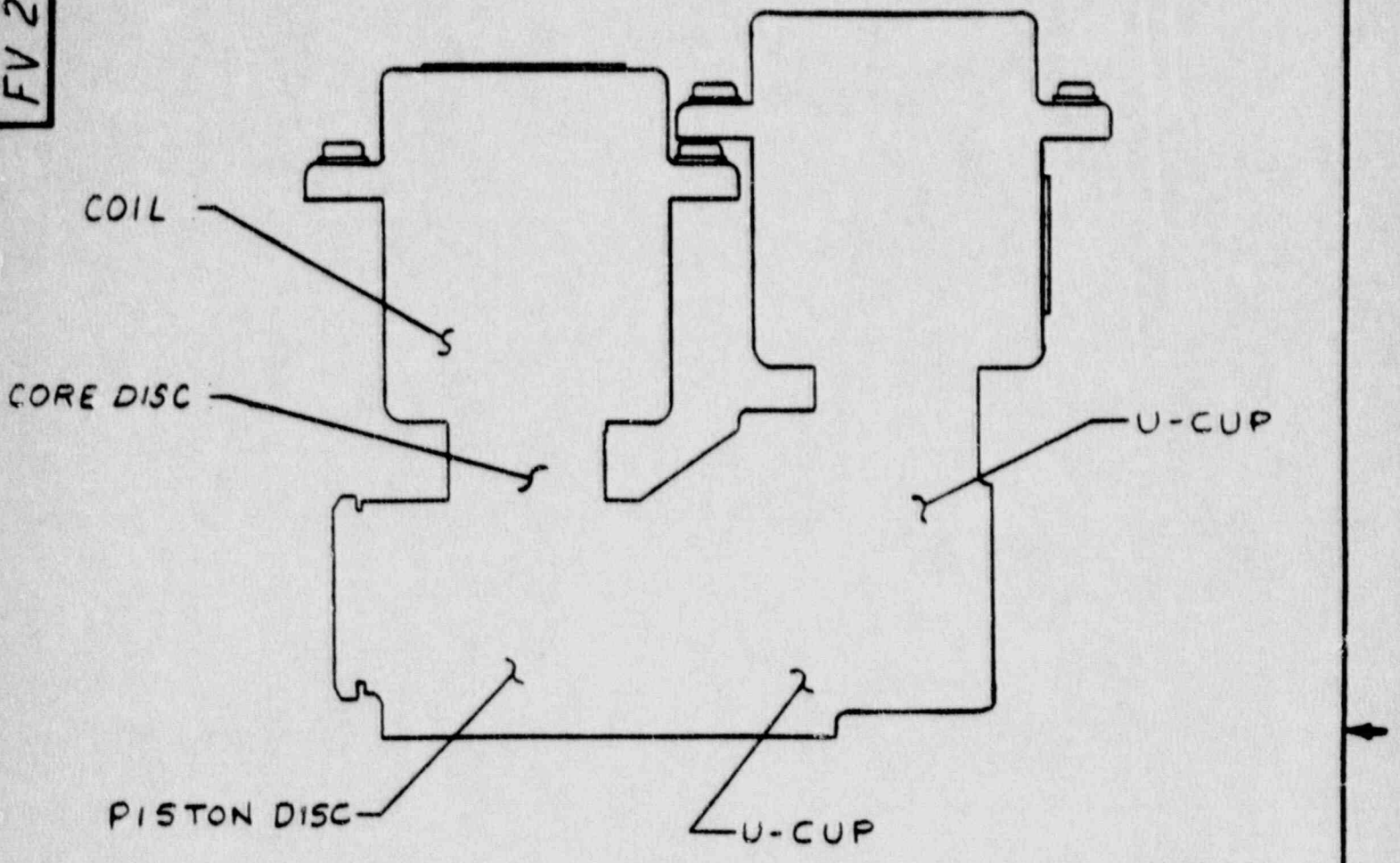
FILE

CHANGE LETTER A

A.S.C. Dtg. 1709 R11

FV 236903

BULLETIN RP8344 AC



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE			
	COIL	CORE DISC	PISTON DISC	U-CUP
25°C	117°C	69°C	50°C	50°C
49°C	139°C	90°C	71°C	71°C
66°C	153°C	105°C	86°C	86°C
131°C	212°C	163°C	145°C	145°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (DUAL SOLENOID)

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	J.M.G.	7-13-87
PROJ. APP.		
CHECKED		
DFT. APP.	RJS	7-22-87
ENG. APP.	JEF	7/23/87
	SAS	7/24/87

NONE (SCALE) | JVA 206390 (ASSEM REF #)

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PB ☐
AQ ☐ ☐ ☐ ☐ ☐

CRT ☐

FV 236903

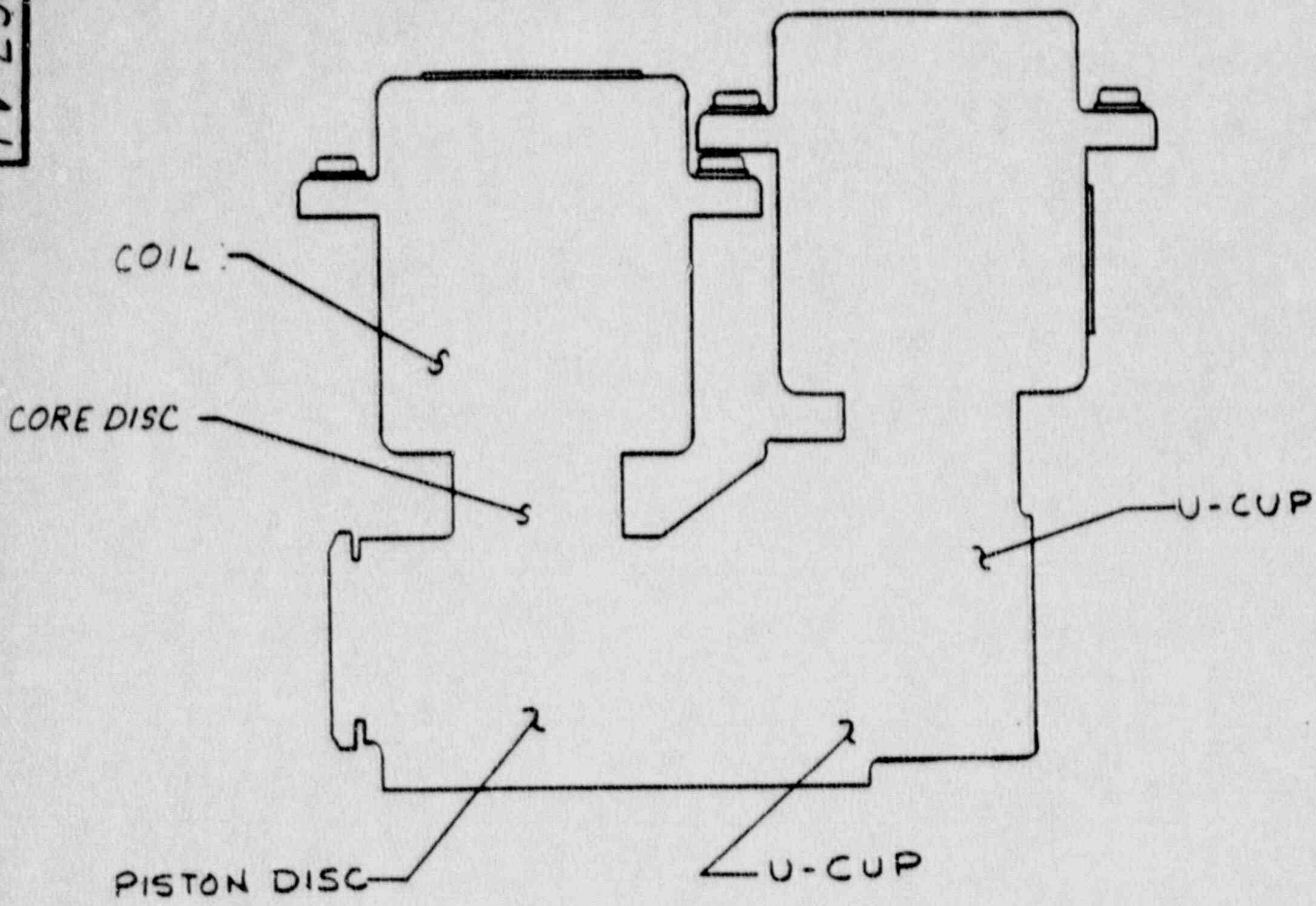
Automatic Switch Co.
FLORHAM PARK, NEW JERSEY 07932 Printed in U.S.A.

FILE

CHANGE LETTER A

FV 236904

BULLETIN NP8344 DC



131°C	211°C	163°C	145°C	145°C
66°C	167°C	105°C	86°C	86°C
49°C	154°C	90°C	71°C	71°C
25°C	135°C	69°C	50°C	50°C
AMBIENT	COIL	CORE DISC	PISTON DISC	U-CUP
TEMPERATURE	MAXIMUM TEMPERATURE			

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (DUAL SOLENOID)

	BY	DATE
DRAWN	J.M.G.	7-14-87
PROJ. APP.		
CHECKED		
DFT. APP.	RJS	7-22-87
ENG. APP.	JCF	7/23/87
	SRS	7/23/87

SCALE: NONE
ASSEM. REF. NO.: JVA 206390

ER NO.	BY	DATE	APP	DATE

AE AN AL AM AJ
CH AV AR AA PS
AG

CRT

FV 236904

CHANGE LETTER: A

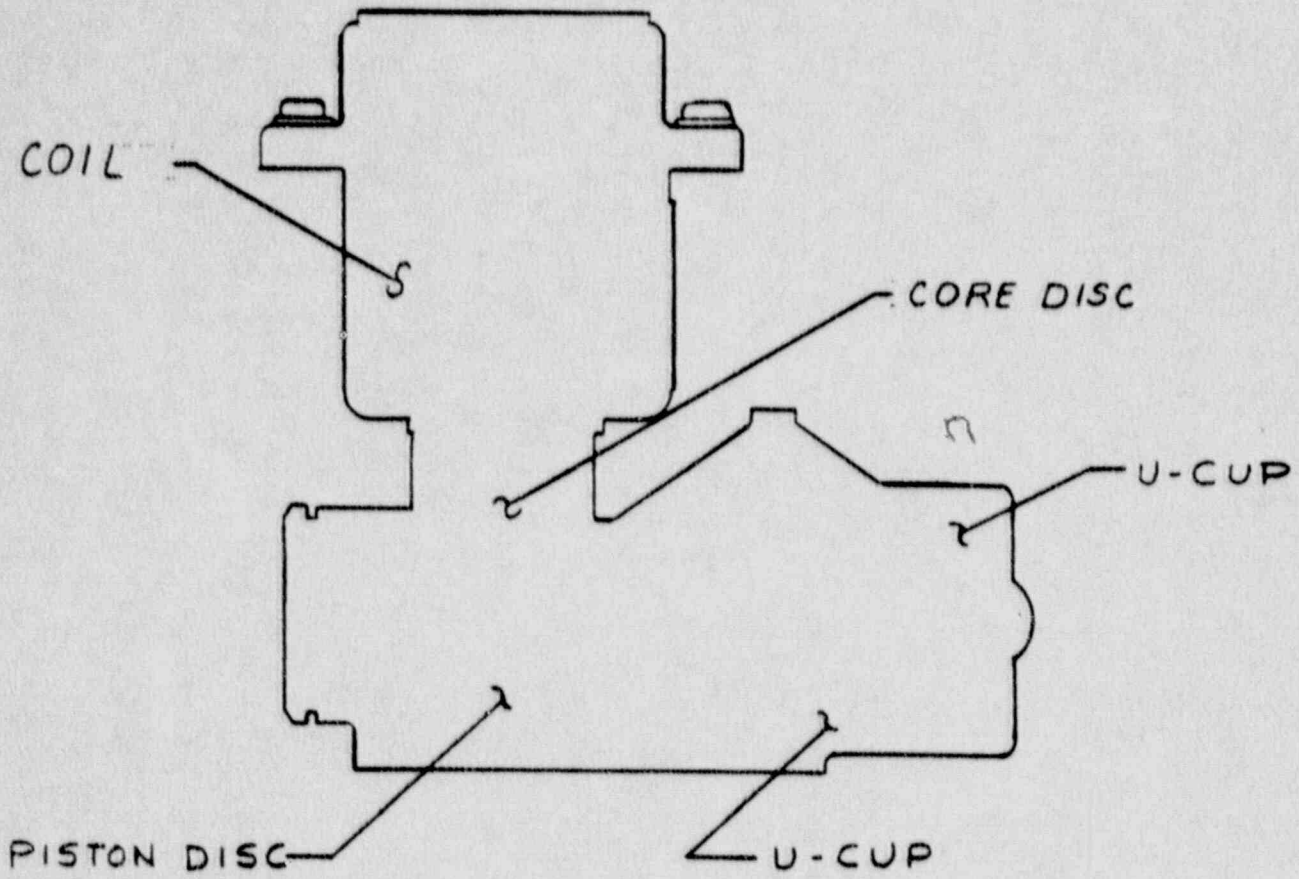
FILE

Automatic Switch Co.
FLORHAM PARK, NEW JERSEY 07932 Printed in U.S.A.

Form V. Orig. 1/85 R11

FV 236905

BULLETIN NP8344 AC



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE			
	COIL	CORE DISC	PISTON DISC	U-CUP
25°C	117°C	69°C	50°C	50°C
49°C	139°C	90°C	71°C	71°C
66°C	153°C	105°C	86°C	86°C
131°C	212°C	163°C	145°C	145°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (SINGLE SOLENOID)

	BY	DATE
DRAWN	J.M.G.	7-12-87
PROJ. APP.		
CHECKED		
DFT. APP.	RJS	7-22-87
ENG. APP.	JCF	7/23/87
	RJS	7/23/87

NONE | JVA 208265 | SIZE | ASSEM. REF. NO

CRT ☐

Automatic Switch Co.
FLORHAM PARK, NEW JERSEY 07932 Printed in U.S.A.

FILE

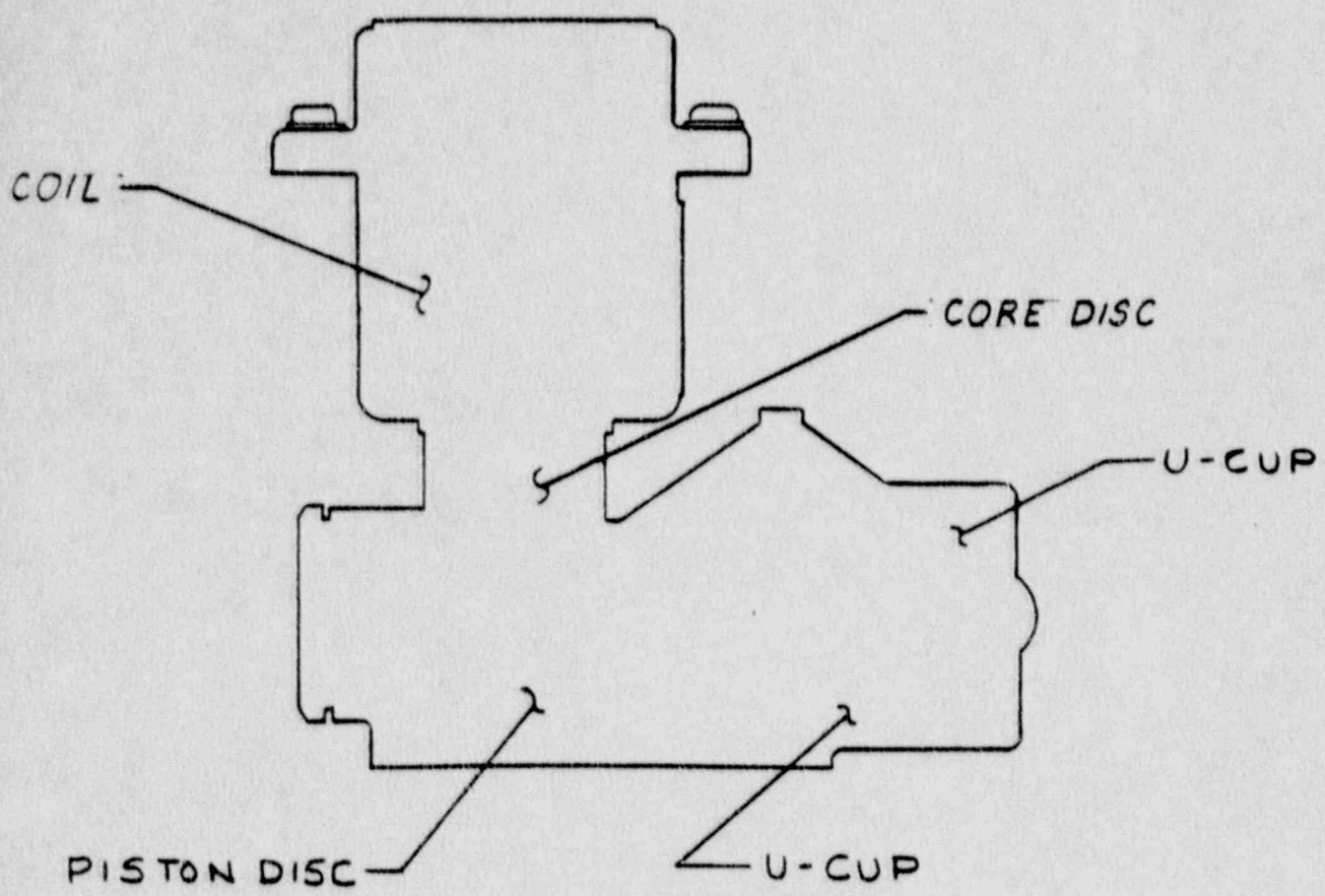
ER NO.	BY	DATE	APP	DATE
AE ☐	AN ☐	[illegible] ☐	AM ☐	AJ ☐
CM ☐	AV ☐	AR ☐	AA ☐	PB ☐
AG ☐	☐	☐	☐	☐

FV 236905

CHANGE LETTER: A

FV 236906

BULLETIN NP8344 DC



AMBIENT TEMPERATURE	COIL	CORE DISC	PISTON DISC	U-CUP
	MAXIMUM TEMPERATURE			
25°C	135°C	69°C	50°C	50°C
49°C	154°C	90°C	71°C	71°C
66°C	167°C	105°C	86°C	86°C
131°C	211°C	163°C	145°C	145°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (SINGLE SOLENOID)

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	J.M.G.	7-13-87
PROJ. APP.		
CHECKED		
DFT. APP.	RJS	7-21-87
ENG. APP.	JCF	7/23/87
	SRS	7/23/87

NONE (SCALE) | JVA 208265 (ASSEM. REF NO)

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PB ☐
AQ ☐ ☐ ☐ ☐ ☐

CRT ☐

FV 236906

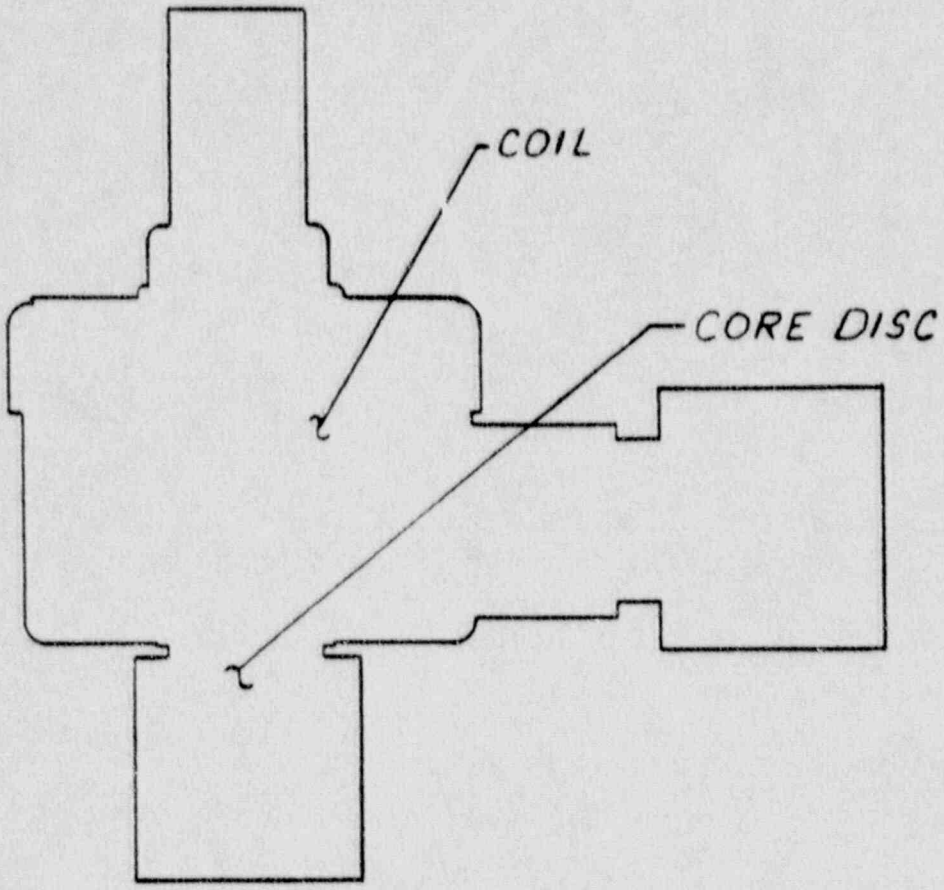
Automatic Switch Co.
FLORHAM PARK, NEW JERSEY 07932 Printed in U.S.A.

FILE

CHANGE LETTER A

FV 236907

BULLETIN NP8314 AC



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE	
	COIL	CORE DISC
25°C	117°C	69°C
49°C	139°C	90°C
66°C	153°C	105°C
131°C	212°C	163°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (RESILIENT DISC)

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	J.M.G.	7-10-87
PROJ. APP.		
CHECKED		
OPT. APP.	RJS	7-22-87
ENG. APP.	JCF	7/23/87
		7/23/87

NONE SCALE | JVA 218379 ASSEM REF NO

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PB ☐
AG ☐ ☐ ☐ ☐ ☐

CRT ☐

FV 236907

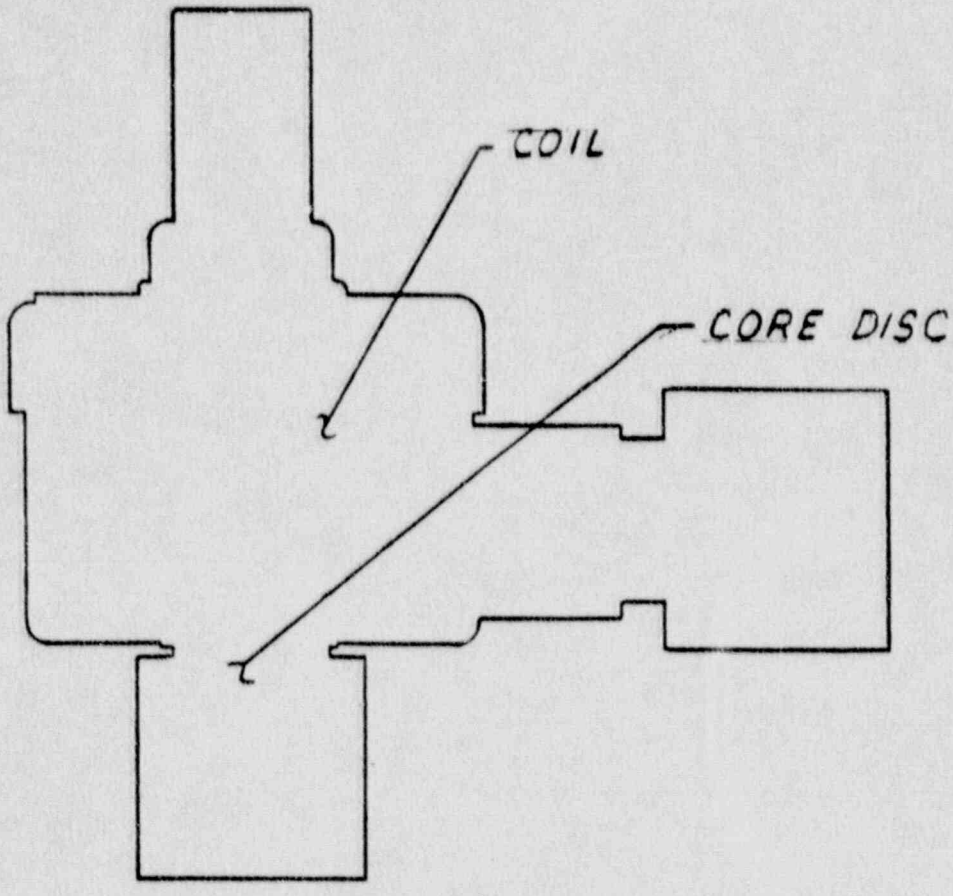
Automatic Switch Co.
FLORHAM PARK, NEW JERSEY 07932 Printed in U.S.A.

FILE

CHANGE LETTER A

FV 236908

BULLETIN NP8314 DC



AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE	
	COIL	CORE DISC
131°C	211°C	163°C
66°C	167°C	105°C
49°C	154°C	90°C
25°C	135°C	69°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (RESILIENT DISC)

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	J.M.G.	7-10-87
PROJ. APP.		
CHECKED		
DFT. APP.	RJS	7-22-87
ENG. APP.	JRF	7/23/87
	JRS	9/13/87

NONE SCALE | JVA 218379 ASSEM REF NO

AE AN AL AM AJ
CH AV AR AA PB
AG

CRT

FV 236908

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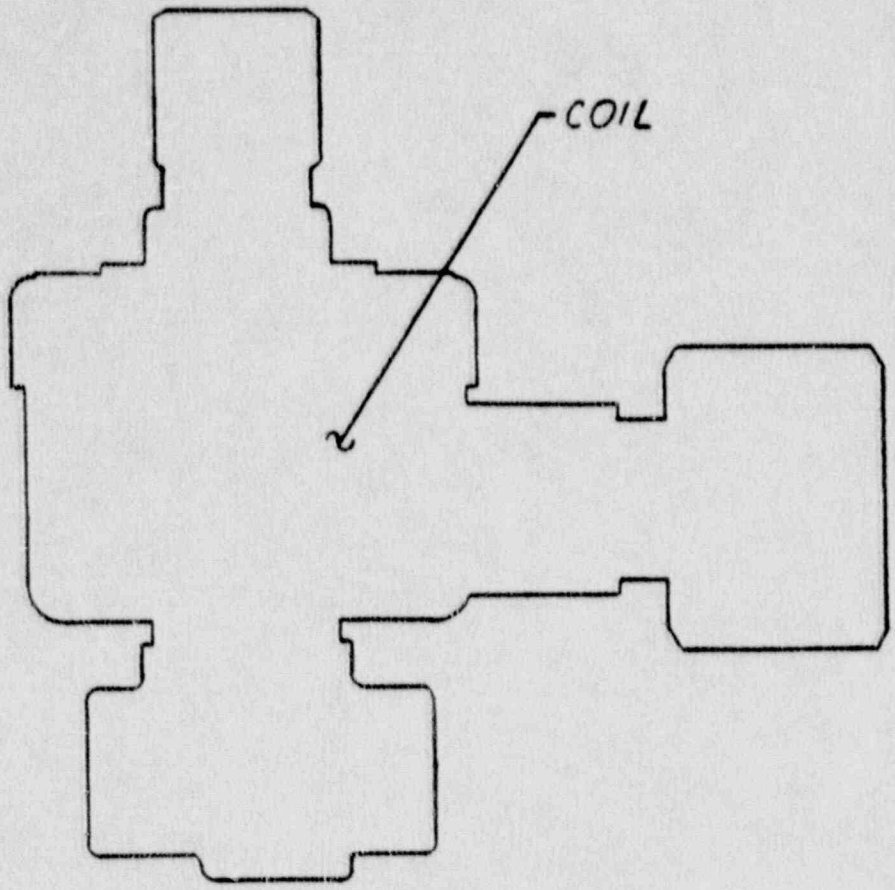
FILE

CHANGE LETTER A

FV 236909

BULLETIN NP8314 AC



AMBIENT TEMPERATURE	MAXIMUM COIL TEMPERATURE
25°C	117°C
49°C	139°C
66°C	153°C
131°C	212°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (METAL DISC)

ER NO.	BY	DATE	APP	DATE

	BY	
DRAWN	J.M.G	7-10-87
PROJ. APP.		
CHECKED		
DES. APP.	RJS	7-22-87
ENG. APP.	JCF	7/23/87
	SRS	9/[illegible]/87

NONE SCALE

JVA 220632 ASSEM REF NO

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
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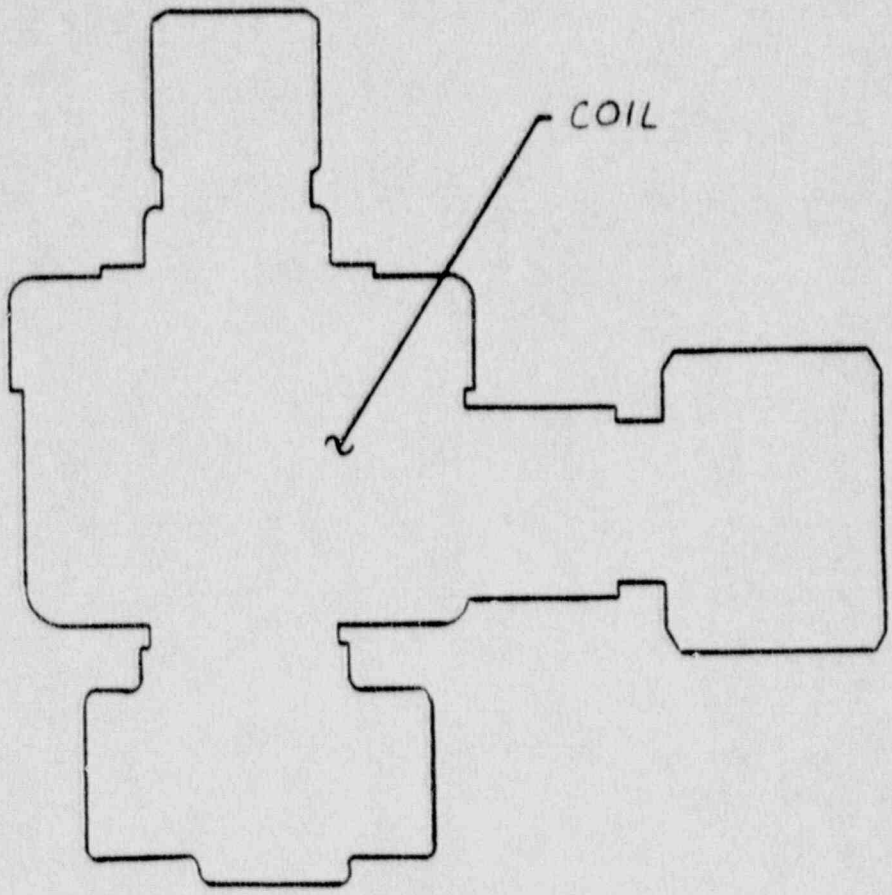
FV 236910

BULLETIN NP8314 DC



AMBIENT TEMPERATURE	COIL MAXIMUM TEMPERATURE
131°C	211°C
66°C	167°C
49°C	154°C
25°C	135°C

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW (METAL DISC)

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	J.M.G.	7-13-87
PROJ. APP.		
CHECKED		
DFT. APP.	RJS	7-22-87
ENG. APP.	JCF	7/24/87
	[illegible]	7/24/87

NONE SCALE | JVA 220632 ASSEM REF NO

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AG ☐ ☐ ☐ ☐ ☐

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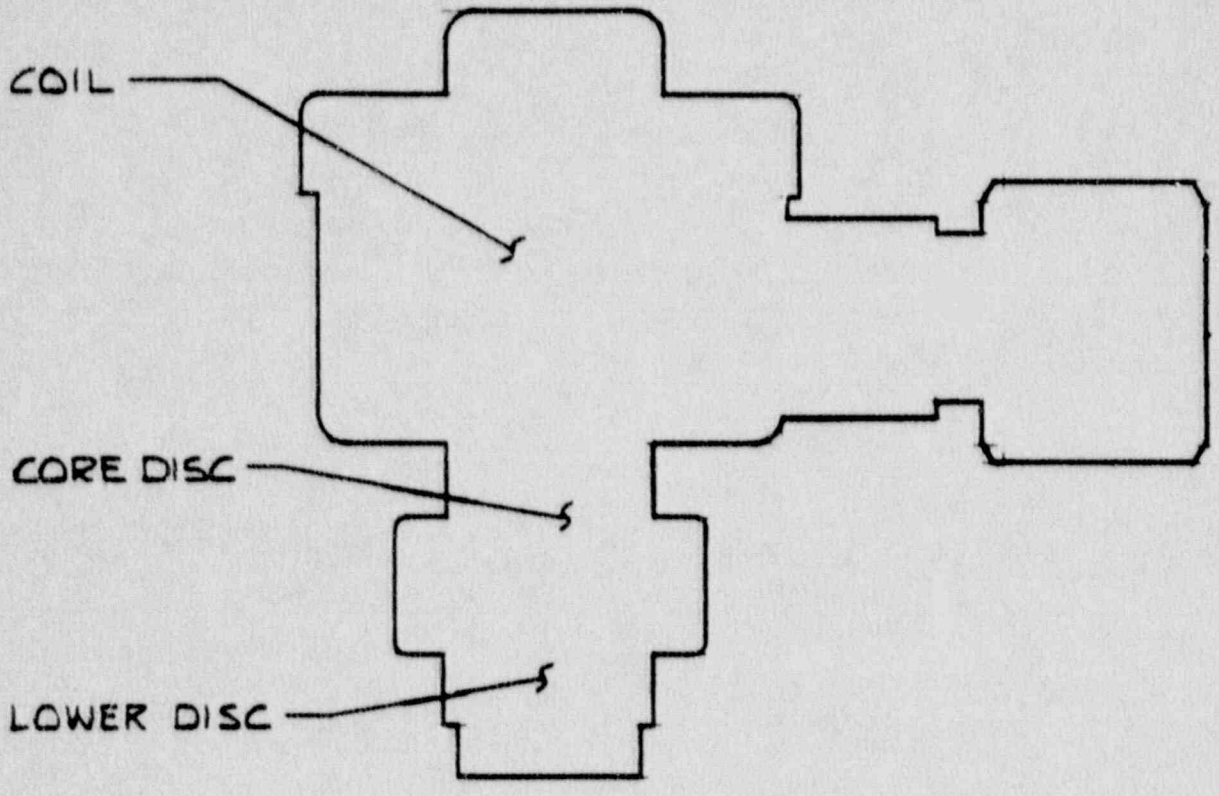
AMBIENT TEMPERATURE	MAXIMUM TEMPERATURE		
	COIL	CORE DISC	LOWER DISC
25° C	135° C	69° C	48° C
49° C	154° C	90° C	69° C
66° C	167° C	105° C	84° C
131° C	211° C	163° C	143° C



CATALOG NUMBER NP 8320 A 185E 125/DC

ITEM

MAXIMUM TEMPERATURES OF COIL AND CRITICAL ELASTOMERS WITH VALVE ENERGIZED AND NO FLOW

ER NO.	BY	DATE	APP	DATE

	BY	DATE
DRAWN	LFB	11-87
PROJ. APP.		
CHECKED	VADAS	11-87
DFT. APP.	RJS	11-17-87
ENG. APP.	JF	11/17/87
	[illegible]	11/17/87

NONE — SCALE

210-450 — ASSEM. REF. NO.

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PS ☐
AG ☐ ☐ ☐ ☐ ☐

CRT ☐

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Form V. Dftg. 1709 R11

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Revised Field Notification of the

DISCONTINUATION OF NP8323 VALVE LINE

1. Several BWR nuclear power plants have experienced a main steam isolation valve (MSIV) closing problem that has eventually been traced to the NP8323 series solenoid operated valve controlling the piloting of the MSIV actuator. ASCO has conducted a thorough review of the available information concerning these incidents and has concluded that the NP8323 valves have no defects.

2. The results of ASCO's investigation indicate that the primary cause of the MSIV malfunction is contamination of the ASCO NP8323 valves by foreign materials which either inhibit movement of internal parts or degrade the ethylene propylene elastomers. In both cases, the excessively high ambient temperature in the MSIV area, the relatively high normal radiation, and the potential for even higher temperatures from steam leaks may all be contributory factors to the malfunctioning which has occurred. It appears that the likely source of the contamination is lubricant or other material from the MSIV actuator that has entered the ASCO NP8323 valves during exhaust cycling of the MSIV actuators. NRC Information Notices 85-17, 86-57, and 87-28 as well as G.E. Service Information Letter (SIL) No. 481 tend to substantiate this.

3. The MSIV piloting application is the primary use for ASCO NP8323 valves. Since it is unlikely that any significant changes will be made to the service conditions in the MSIV area, which ASCO has no control over, it has been decided that, effective immediately, ASCO will no longer offer for sale, NP8323 Series qualified valves with ethylene propylene elastomers ("E" suffix valves). ASCO will continue to support qualification of all previously supplied NP8323 valves. ASCO will also continue to offer NP8323 valves with Viton elastomers ("V" suffix valves) until September 1, 1990 in order to allow users sufficient time to eliminate NP8323 Series valves from MSIV systems. However, ASCO recommends that all NP8323 valves be removed from MSIV piloting applications as soon as possible consistent with normal plant operation and maintenance schedules.

4. Fortunately, the NP8323 valves can be replaced with an alternate construction which is less vulnerable to foreign material contamination and offers distinct advantages. This alternative consists of a pair of NP8320 series valves with Viton elastomers. Although less tolerant of radiation, Viton provides superior performance in the MSIV piloting application. Two NP8320

4. -continued-

series valves (normally closed construction) can be piped in a configuration which will duplicate the function of the presently used NP8323 pilots. Please refer to drawing FP238900 attached. Like the NP8323 series, the NP8320 series valves are fully qualified for safety-related applications with the following advantages:

a. Superior pressure rating

b. Superior flow, and therefore, capability for faster shift times.

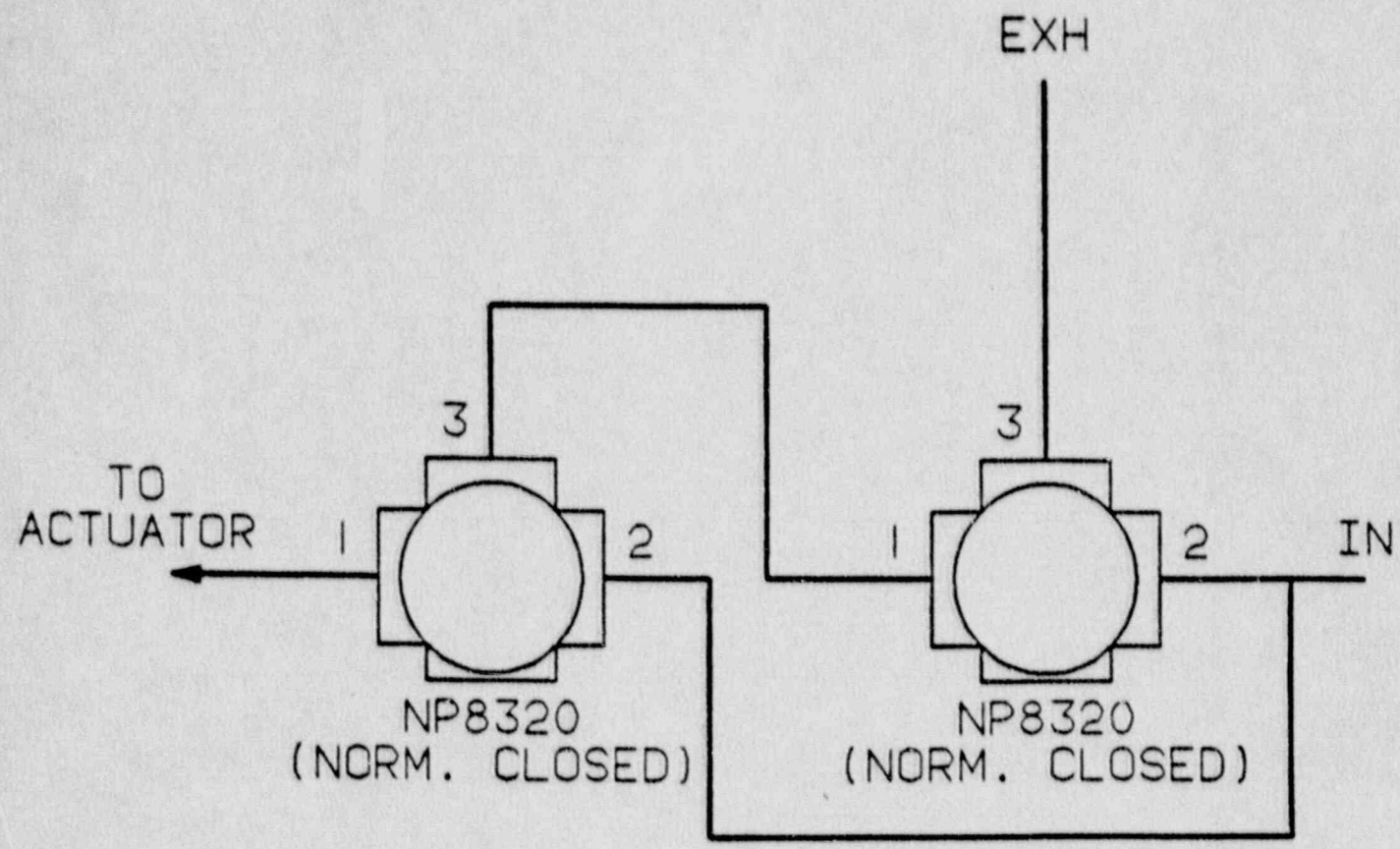
c. Lower operating temperature of critical components.

d. No core assemblies in the cylinder to exhaust path of the valves where ASCO has previously seen evidence of inhibited movement of the core assemblies due to foreign material contamination.

e. The NP8320 series valves are immediately available.

5. ASCO will be pleased to accept the return of any unused NP8323 valves and apply their value as credit against orders for other ASCO NP series valves.

JRS:mm



PIPING DIAGRAM
FOR DUAL NP 8320 VALVE

THIRD ANGLE PROJECTION

ER NO.	BY	APP.	DATE

	BY	DATE
DRAWN BY	LFB	3-88
PROJ APP		
CHECKED		
DFT APP		
ENG APP		

COMPUTER GENERATED DRAWING

MANUFACTURING TOLERANCED TO BE IN ACCORDANCE WITH ASCO PROCEDURE MP-I-003

NONE SCALE

ASSEM REF NO

AE ☐ AN ☐ AL ☐ AM ☐ AJ ☐
CH ☐ AV ☐ AR ☐ AA ☐ PS ☐
AG ☐ AP ☐ AK ☐ AC ☐ ☐

☐ CRT

FP 238900

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FILE FILE

CHANGE LETTER