

FED. SUP CLASS
4820

TABLE I - CAPACITIES FOR REFRIGERANT - 12

CAPACITY - B T U / H R												
MS PART NO.	135° F CONDENSING, 125° VAPOR FREE LIQUID ENTERING TEV								105° COND TEMP			
	-10° F EVAP TEMP		25° F EVAP TEMP		-10° F EVAP TEMP		25° F EVAP TEMP		50° F EVAP TEMP		95° F VAPOR FREE	
	175 PSI PD		145 PSI PD		145 PSI PD		125 PSI PD		100 PSI PD		LIQUID ENT TEV	
	ACROSS TEV		ACROSS TEV		ACROSS TEV		ACROSS TEV		ACROSS TEV		50° F EVAP TEMP	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
MS -1	2000	3700	3400	7000								
MS -2	3600	4200	6300	8800								
MS -3					4500	8700	6200	15000				
MS -4					8500	19200	18000	30000				
MS -5					13000	28000	24000	43000				
MS -6									13000	18000	10000	13000
MS -7									28000	34000	19000	22000
MS -8									40000	52000	29000	35000
MS -9									57000	75000	36000	54000
MS -10									72000	78000	49000	54000
MS -11									109000	130000	71000	83000
MS -12									145000	172000	100000	117000

THERMOSTATIC EXPANSION VALVE = T.E.V.
PRESSURE DROP = P.D.

CAPACITIES: MINIMUM CAPACITY REQUIREMENTS MUST BE MET.
MAXIMUM CAPACITIES ARE MERELY A GUIDE FOR THE
APPLICATION ENGINEER. THE SUFFIX "A" IN TABLE I OR II DOES
NOT AFFECT CAPACITY.

TABLE II - CAPACITIES FOR REFRIGERANT - 22

CAPACITY - B T U / H R												
MS PART NO.	135°F CONDENSING, 125°F VAPOR FREE LIQUID ENTERING T.E.V.										105°F COND TEMP	
	-10°F EVAP TEMP 250 PSI P.D.		25°F EVAP TEMP 220 PSI P.D.		-10°F EVAP TEMP 220 PSI P.D.		25°F EVAP TEMP 200 PSI P.D.		50°F EVAP TEMP 175 PSI P.D.		95°F VAPOR FREE LIQUID ENT T.E.V.	
											50°F EVAP TEMP 75 PSI P.D.	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
MS -13	3250	6020	5530	11380								
MS -14	5850	6830	10250	14300								
MS -15					7550	14600	10350	25000				
MS -16					14250	32200	30000	49800				
MS -17					21800	47000	40000	71500				
MS -18									22200	30700	18880	24600
MS -19									47700	58000	35800	41500
MS -20									62000	88500	54700	66000
MS -21									97000	128000	88000	102000
MS -22									122500	133000	92500	102000
MS -23									185700	222000	134000	156800
MS -24									247000	293000	184800	221000

©ENTIRE STANDARD REVISED

P.A. ARMY - GL

Other Cust

NAVY - YD
USAF - B2

TITLE

VALVES, EXPANSION, THERMOSTATIC, REFRIGERANT-12
AND REFRIGERANT - 22

MILITARY STANDARD

MS 17982

PROCUREMENT SPECIFICATION
NIL-V-23450

SUPERSEDES:

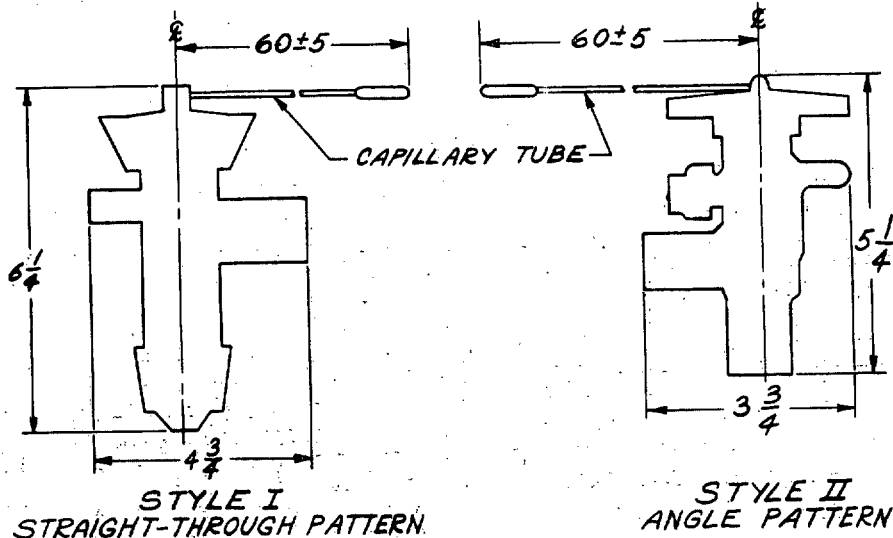
SHEET 1 OF 3

DD FORM 672-1
1 SEP 57

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

APPROVED 28 SEPT 62 REVISED (A) 2 JUNE 1969 (B) 9 JULY 1971 (C) 19 JUN 1974

User Activity:
Navy-SE, MCReview Activity:
Army-MSThis military standard has been approved by the Department
or Defense. Selection for all new engineering and design
applications and for repetitive use shall be made from
this document.

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VALVE MAXIMUM OVERALL DIMENSIONS

MS PART NO.	EQUALIZER		PRESSURE LIMIT MEANS	CONNECTIONS		TYPE	
	STYLE I	STYLE II		SIZE (IN)			
				INLET	OUTLET		
-1	-1A	INTERNAL	FLARE 1/4	YES	3/8	1/2	FLARE
-2	-2A						
-3	-3A						
-4	-4A						
-5	-5A						
-6	-6A	EXTERNAL	FLARE 1/4	NO	1/2	5/8	SOLDER
-7	-7A						
-8	-8A						
-9	-9A						
-10	-10A						
-11	-11A						
-12	-12A						

MS PART NO.	EQUALIZER		PRESSURE LIMIT MEANS	CONNECTIONS		TYPE	
	STYLE I	STYLE II		SIZE (IN)			
				INLET	OUTLET		
-13	-13A	INTERNAL	FLARE 1/4	NO	3/8	1/2	FLARE
-14	-14A						
-15	-15A						
-16	-16A						
-17	-17A						
-18	-18A	EXTERNAL	FLARE 1/4	NO	1/2	5/8	SOLDER
-19	-19A						
-20	-20A						
-21	-21A						
-22	-22A						
-23	-23A						
-24	-24A						

METHOD OF RATING: IN ACCORDANCE WITH REFERENCED STANDARD.

CAPACITIES: AS PER TABLE I, BASED ON USE OF REFRIGERANT 12, OR
AS PER TABLE II, BASED ON USE OF REFRIGERANT 22.

DIMENSIONS: DIMENSIONS ARE IN INCHES.

P.A. ARMY - GL Other Cust	TITLE VALVES EXPANSION, THERMOSTATIC REFRIGERANT-12 AND REFRIGERANT-22	MILITARY STANDARD MS 17982
PROCUREMENT SPECIFICATION MIL-V-23450	SUPERSEDES:	SHEET 2 OF 3

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NOTES:

1. DEFINITIONS:

(A) FACTORY SUPERHEAT SETTING:

THE "FACTORY SUPERHEAT SETTING" OF A THERMOSTATIC EXPANSION VALVE IS THE FINAL ADJUSTMENT MADE BY THE MANUFACTURER DURING PRODUCTION TESTS.

(B) SUPERHEAT CHANGE:

THE "SUPERHEAT CHANGE" (SUPERHEAT GRADIENT) OF A THERMOSTATIC EXPANSION VALVE IS THE DIFFERENCE BETWEEN NO-FLOW SUPERHEAT AND THE SUPERHEAT REQUIRED TO PRODUCE RATED CAPACITY OR REQUIRED FLOW.

2. OPERATING CHARACTERISTICS:

(A) SUPERHEAT:

1. TYPE: ADJUSTABLE

2. SETTING: FOR REFRIGERANT 12 PARTS -1, -2, -3, -4, and -5; FACTORY SET AT $7^{\circ}\text{F} \pm 2^{\circ}\text{F}$ AT BULB REFERENCE TEMPERATURE OF 0°F . PARTS -6 TO -12, INCL.; FACTORY SET AT $10^{\circ}\text{F} \pm 1^{\circ}\text{F}$ AT BULB REFERENCE TEMPERATURE OF 32°F . FOR REFRIGERANT 22 PARTS -13, -14, -15, -16 and -17; FACTORY SET AT $6^{\circ}\text{F} \pm 2^{\circ}\text{F}$ AT BULB REFERENCE TEMPERATURE OF 32°F . PARTS -18 TO -24 INCL.; FACTORY SET AT $6^{\circ}\text{F} \pm 1^{\circ}\text{F}$ AT BULB REFERENCE TEMPERATURE OF 32°F .

3. SUPERHEAT CHANGE: THE SUPERHEAT CHANGE OF A THERMOSTATIC EXPANSION VALVE SHALL NOT BE MORE THAN 7°F THROUGHOUT THE RANGE OF TEMPERATURE IN WHICH THE EVAPORATOR IS SPECIFIED TO OPERATE TO PRODUCE THE REQUIRED CAPACITY AT THOSE CONDITIONS.

(B) PRESSURE LIMIT MEANS: (REFRIGERANT 12 ONLY)

1. SETTING: PARTS -1 AND -2; FACTORY SET AT MAXIMUM OPERATING PRESSURE OF 30 PSIG., (+) 7 PSI., (-) 0 PSI.

3. MATERIALS: SUITABLE FOR USE WITH REFRIGERANT 12, OR REFRIGERANT 22 AS APPLICABLE.

4. CONNECTION ENDS - FLARE: EXTERNAL, IN ACCORDANCE WITH M335873.
SOLDER: FEMALE, IN ACCORDANCE WITH M335925.

5. MARKING: DIRECTION OF FLOW TO BE LEGIBLY AND PERMANENTLY INDICATED.

6. REFERENCED DOCUMENTS: ANSI STANDARD B 9.1 - SAFETY CODE FOR MECHANICAL REFRIGERATION.
ARI STANDARD NO. 750-70 - THERMOSTATIC REFRIGERANT EXPANSION VALVES.

7. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BIDS OR REQUEST FOR PROPOSAL.

8. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.

APPROVED 28 SEPT 62 REVISED 2 JUNE 1969 9 JULY 1971 19 JUN 74

P.A. ARMY-6L Other Cust NAVY-YD USAF-82	TITLE VALVES EXPANSION, THERMOSTATIC REFRIGERANT-12 AND REFRIGERANT-22	MILITARY STANDARD MS 17982
PROCUREMENT SPECIFICATION MIL-V-23450	SUPERSEDES:	SHEET 3 OF 3

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