

Collins S-Line and KWM-2 Tubes Cross Reference Guide

by Ed Schaad, W3WDF
8245 Garden Oaks Dr.
San Antonio, TX 78266

Vacuum tubes are still available to meet most of our needs. In addition, foreign tubes have infiltrated the market place. However, some type tubes appear to be getting a trifle scarce.

It is believed that Collins collectors/users and others would appreciate a cross reference tube guide to widen the aperture for the recognition and selection of those tubes available that may be used to keep those grand old rigs running. The acquisition of some selections may prove to be a far better tube in performance as to longevity and sustained reliability.

The main advantage of the guide is to determine what the four digits reflect as to the prototype tube involved. The other advantage is to identify common place tubes to work as substitutes that will function until the most appropriate tube is found.

A special thanks to the General Electric Company, Essential Characteristics Publication; Sylvania Electronic Products, Inc.; Howard W. Sam's Tube Substitution Handbook (which is quite old and probably not found on the book shelves anymore) and George Carle, N7ARY, for his assistance in layout and production of this article.

Vacuum Tube Cross Reference
*Collins S-Line, KWM-2, 516F-2, 30L-1, 30S-1

Substitution & Primary	Primary	Reliable, Premium, Etc., Types	Where Used
0A2*		6073, 6626	32S-3
6AH6*		6485	32S
6AH6V	6AH6	(6485-6AH6)	
6AL5*		6663, 5726, 6058, 6097	32S, KWM-2
6AQ6	6AT6	(6066-6AT6)	
6AT6*		6066	75S

Vacuum Tube Cross Reference
***Collins S-Line, KWM-2, 516F-2, 30L-1, 30S-1**

Substitution & Primary	Primary	Reliable, Premium, Etc., Types	Where Used
6GH8	6U8A	(6678, 7731-6U8A)	
6GJ8	6U8A	(6678, 7731-6U8A)	
6GN8	6EB8		
6HF8	6EB8		
6HQ6	6CB6	(6676, 7732-6CB6)	
6HZ8+	6EB8		
6JE8	6EB8		
6KD8	6U8A	(6678, 7731-6U8A)	
6U8A*	6EA8	(6678, 7731)	32S, KWM-2
12AT7*		6679, 6201, 6060, 6671, 7492, 7728	32S, KWM-2
12AX7*		6681, 5751+, 7025, 5721, 6057, 7494, 7729	75S-3
12AZ7+	12AT7	(6679, 6201, 6060, 6671, 7492, 7728-12AT7)	
12DF7	12AX7	(6681, 5751+, 7025, 5721, 6057, 7494, 7729-12AX7)	
12AD7+	12AX7	(6681, 5751+, 7025, 5721, 6057, 7494, 7729-12AX7)	
12DT7	12AX7	(6681, 5751+, 7025, 5721, 6057, 7494, 7729-12AX7)	
12BZ7+	12AX7	(6681, 5751+, 7025, 5721, 6057, 7494, 7729-12AX7)	
12DM7+	12AX7	(6681, 5751+, 7025, 5721, 6057, 7494, 7729-12AX7)	
5R4*		(see notes on tube types suffixed)	516F-2
12AL5*			Early 30S-1
3B28			30S-1
ECC81	12AT7	(6679, 6201, 6060, 6671, 7492, 7728-12AT7)	

Vacuum Tube Cross Reference
***Collins S-Line, KWM-2, 516F-2, 30L-1, 30S-1**

Substitution & Primary	Primary	Reliable, Premium, Etc., Types	Where Used
6AU6*	6BA6	7543, 6136 (5749, 6660, 7496-6BA6)	75S, 32S, KWM-2
6AU8+	6EB8		
6AU8A+	6EB8		
6AV6	6AT6	(6066-6AT6)	
6AW6	6DC6	(6672, 7732-6CB6)	
6AX8	6EA8	(6678, 7731-6U8A)	
6AZ8*			KWM-2
6BA6*	6AU6	(7543, 6136-6AU6) (6660, 5749, 7496-6BA6)	
6BE6*		5750, 7502+, 5915, 7036	KWM-2
6BF5*			75S
6BK6	6AT6	(6066-6AT6)	
6BN8*			KWM-2
6BT6	6AT6	(6066-6AT6)	
6BZ6	6CB6	(6676, 7732-6CB6)	
6CL6*		6677, 2014, 6197, 6297	32S, KWM-2
6CB6*	6DC6	(6676, 7732-6CB6)	32S
6DC6*	6CB6	(6676, 7732-6CB6)	
6CF6	6CB6	(6676, 7732-6CB6)	
6CX8	6EB8		
6DE6	6CB6	(6676, 7732-6CB6)	
6DK6	6CB6	(6676, 7732-6CB6)	
6EA8*	6U8A	(6678, 7731-6U8A)	32S, KWM-2
6EB5	6AL5	(6663, 5726, 6097, 6058, 6AL5)	
6EB8*			KWM-2

Vacuum Tube Cross Reference
***Collins S-Line, KWM-2, 516F-2, 30L-1, 30S-1**

Substitution & Primary	Primary	Reliable, Premium, Etc., Types	Where Used
ECC83	12AX7	6681, 5751+, 7025, 5721, 6057, 7494, 7729-12AX7	
7543*	6AU6	(6136, 7543-6AU6) (5749, 6660, 7496-6BA6)	32S, KWM-2
6146*		8298A, 7212, 6146A, 6146B, 6146W	32S, KWM-2
811A*	572B	(the earlier 811 can be installed horizontal)	30L-1
572B	811A		
EF-93	6BA6	(5749, 6660, 7496-6BA6) (6136, 7543-6AU6)	
5U4*		5931 (see notes on tube types suffixed)	516F-2
4CX1000A*		8168	30S-1
3B28*			30S-1
5AS4A	5U4		
5AR4	5U4		

NOTES: * Collins primary tubes as used in the S-Line, KWM-2, 516F-2, 30L-1, 30S-1
 + Substitute tubes so indicated, should be used only when filament of the original tube is wired in a parallel circuit, or in a series circuit not requiring controlled warm-up time.

Find List For Premium, Reliable Types

Premium-Reliable Type	Collins Primary Type	Ordinary Substitutions
2014	6CL6	
5721	12AX7	ECC83, 12DF7, 12DT7, 12AD7, 12BZ7+, 12DM7+
5726	6AL5	6EB5
5749	6BA6	6AU6

Find List For Premium, Reliable Types

Premium-Reliable Type	Collins Primary Type	Ordinary Substitutions
5750	6BE6	6BY6, 6CS6
5751*	12AX7* Higher Htr Current	ECC83, 12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+
5915	6BE6	6BY6, 6CS6
5931	5U4	5AR4, 5AS4
6057	12AX7	ECC83, 12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+
6058	6AL5	6EB5
6060	12AT7	12AZ7+, ECC81
6066	6AT6	6AV6, 6BK6, 6BT6, 6AQ6+
6073	0A2	
6097	6AL5	6EB5
6136	6AU6	<u>6BA6</u>
6197	6CL6	
6201	12AT7	12AZ7+, ECC81
6297	6CL6	
6485	6AH6	6AH6V
6626	0A2	
6660	6BA6	<u>6AU6</u>
6663	6AL5	6EB5
6671	12AT7	12AZ7+, ECC81
6676	6CB6	<u>6DC6</u> , 6BZ6, 6CF6, 6DE6, 6DK6, 6HQ6
6677	6CL6	
6678	6U8A	<u>6EA8</u> , 6KD8, 5KD8, 6GH8, 6BL8, 6AX8+, 6GJ8+
6679	12AT7	12AZ7+, ECC81
6681	12AX7	ECC83, 12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+

Find List For Premium, Reliable Types

Premium-Reliable Type	Collins Primary Type	Ordinary Substitutions
7025	12AX7	ECC83, 12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+
7036	6BE6	6BY6, 6CS6
7212	6146	
7492	12AT7	12AZ7+, ECC81
7494	12AX7	ECC83, 12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+
7496	6BA6	<u>6AU6</u>
7502+	6BE6	6BY6, 6CS6
7543	6AU6	<u>6BA6</u>
7631	6AL5	6EB5
7728	12AT7	12AZ7+, ECC81
7729	12AX7	ECC83, 12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+
7731	6U8A	<u>6EA8</u> , 6KD8, 5KD8, 6GH8, 6BL8, 6AX8+, 6GJ8+
7732	6CB6	<u>6DC6</u> , 6BZ6, 6CF6, 6DE6, 6DK6, 6HQ6
8186	4CX1000A	
8298A	6146	
ECC81	12AT7	12AZ7+
ECC83	12AX7	12DF7, 12DT7, 12AD7+, 12BZ7+, 12DM7+
EF93	6BA6	<u>6AU6</u>
EF94	6AU6	<u>6BA6</u>
OTHER COLLINS PRIMARY TUBES WITHOUT RELIABLE TYPE NUMBERS ASSIGNED		
	6BN8	none known
	6BF5	none known
	6DC6	<u>6CB6</u> , 6CF6, 6BZ6, 6DE6, 6DK6, 6AW6

Find List For Premium, Reliable Types

Premium-Reliable Type	Collins Primary Type	Ordinary Substitutions
	6EA8	<u>6U8A</u> , 6AX8+, 6KD8, 5KD8, 6GH8, 6GJ8+, 6U8+
	6AZ8	none known

Notes:

- a. All tube types suffixed A, G, GA, GB, GY, GYA, GYB, W, WA
 - G Signifies a glass bulb on an octal base
 - GT Signifies a T-9, straight sided glass bulb on an octal base
 - A,B Signifies a later and modified version which can be substituted for any previous version but not vice-versa
 - Y Signifies a base composed of special intermediate loss material
 - W,WA Signifies ruggedized or stabilized versions
- b. The symbol + indicates substitutes should be used only when the filament of the original tube is wired in a parallel circuit, or in a series circuit not requiring controlled warm-up time.
- c. Tube types underlined as a substitute are used in the Collins equipment elsewhere