

Robertshaw

CONTROLS COMPANY
Uni-Line Division

INSTALLATION DATA DA490-400 SUBBASE UNI-KIT UNIVERSAL HEATING/COOLING SWITCHING SUBBASE

DESCRIPTION

The BTH-24S 'Universal' Subbase was designed with the busy serviceman in mind. By stocking this one subbase, the serviceman can quickly replace the many different variations of the Robertshaw "SB4" Series subbases he may encounter. It will also replace many competitive models. The BTH-24S includes two mounting screws and easy-to-follow installation instructions showing how to replace the following subbases:

ROBERTSHAW MODELS

SB3A SB4A-9
SB3C SB4A-9A
SB4A SB4A-90B
SB4A-1 SB4A-10
SB4A-5 SB4A-10A
SB4A-5S SB4A-11
SB4A-5J SB4C
SB4A-5JB SB4D
SB4A-5JB0 SB4K
SB4A-6

COMPETITIVE MODELS

Q405E Q539G1000
Q405M Q539J1006
Q527A T199Y
Q527C T199L
Q539A1014 1F56-301
Q539C1020 1F56-305
Q539F1001 1F56-306

INSTALLATION INSTRUCTIONS

CAUTION

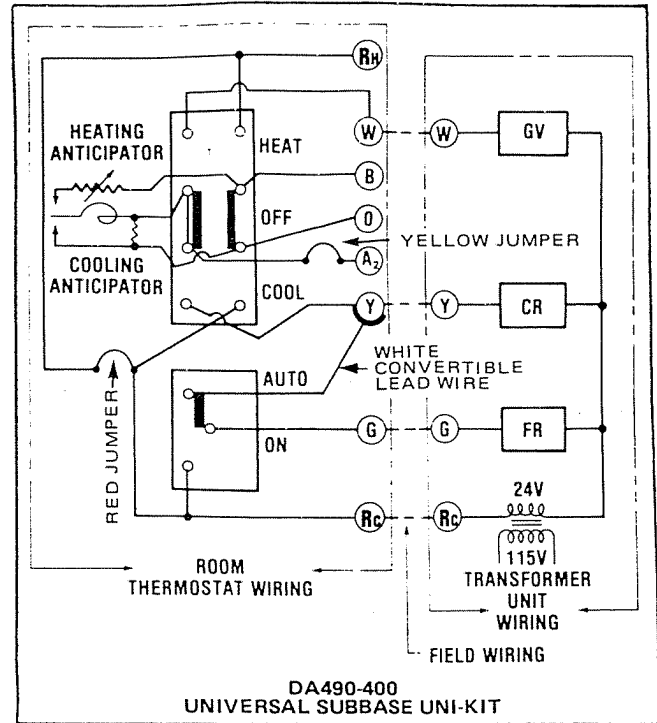
THIS DEVICE SHOULD BE INSTALLED BY A QUALIFIED SERVICE TECHNICIAN WITH DUE REGARD FOR SAFETY, AS IMPROPER INSTALLATION COULD RESULT IN A HAZARDOUS CONDITION.

ALL WIRING MUST CONFORM TO LOCAL CODES AND ORDINANCES.

NOTE: A SUITABLE LIMIT CONTROL IS REQUIRED IN THE 24-VOLT OR 120-VOLT SIDE OF TRANSFORMER

To replace a specific subbase, first determine the factory model number of the old subbase being replaced. This is normally ink stamped on the subbase. Example: you want to replace a subbase that is ink stamped "SB4A-10". Turn to next page and look down the "FACTORY MODEL NUMBER" column until you find "SB4A-10", read across the chart and proceed as directed, note "as shipped" means no change is required.

When replacing a subbase and the thermostat be sure that replacement thermostat is proper variation for application.



DA490-400
UNIVERSAL SUBBASE UNI-KIT

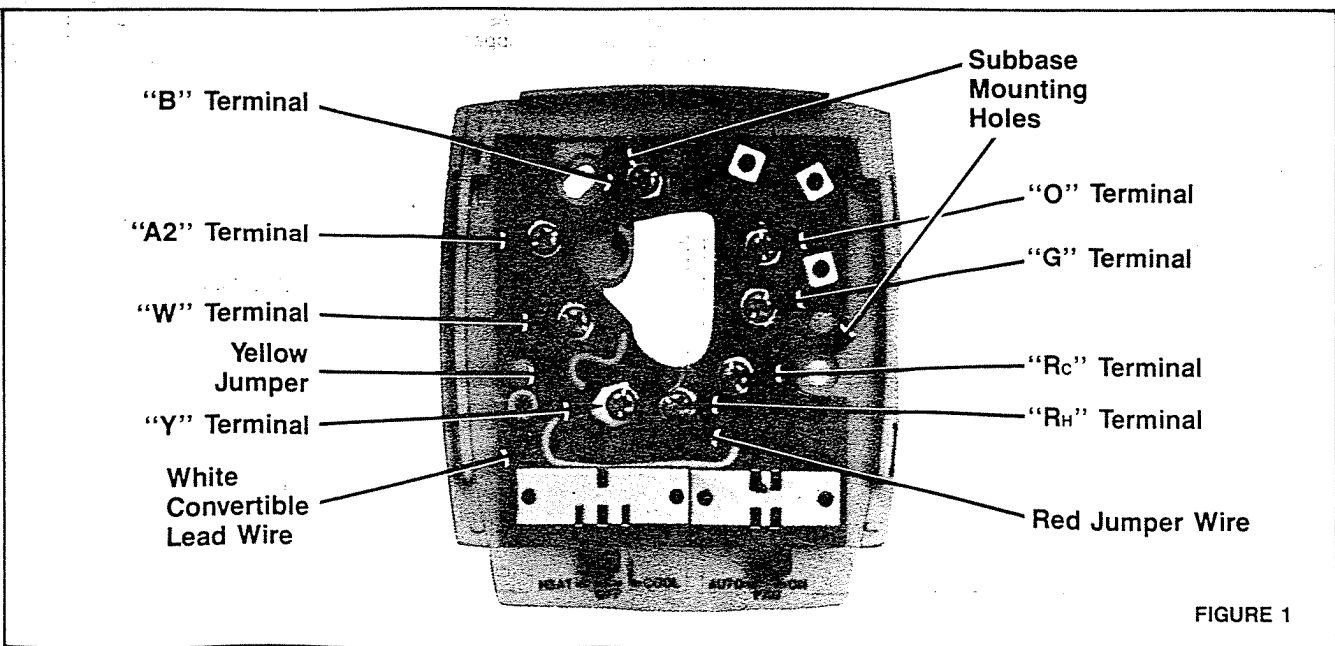


FIGURE 1

REPLACING ROBERTSHAW SUBBASES

EXISTING (ORIGINAL) SUBBASE			
TO MAKE OR REPLACE		APPLICATION	CIRCUIT WIRING DIAGRAM (OLD SUBBASE) SEE DIAGRAM
UNI-LINE PART NUMBER	FACTORY MODEL NUMBER		
DA490-401	SB4A SB4A-5 SB4A-5J SB4A-5JB SB4A-5JBO	Std. heating/cooling single transformer circuit	1
		Std. heating/cooling two transformer circuit	2
DA490-405	SB4D	Heating/cooling No fan switch circuit	3
DA490-410	SB4A-6	Std. heating/cooling with fan delay system	4
DA490-411	SB4A-1	Damper motor system Damper "on" continuously in cooling position	5
DA490-412	SB4A-11	Fan relay operates in Heating or cooling position	6
DA490-413	SB4A-9 SB4A-90B	Heat pump changeover valve or reversing valve is normally in the heating mode when NOT energized	7
DA490-414	SB4A-9A SB4A-90B	Heat pump changeover valve or reversing valve is normally in the cooling mode when NOT energized	8
DA490-415	SB4A-10	Std. heating/cooling with special auxiliary circuit (terminal "A") powered continuously when system switch is in "heat" position	9
DA490-416	SB4A-11A	Gas or electric heat system has a separate relay for fan operation in the heating cycle	10
DA490-417	SB4A-5S	Exact replacement for Carrier HH93YZ094 Single transformer circuit	11
		Two transformer circuit	12
DA490-418	SB4K	Fan switch circuit only	NOT SHOWN
DA490-419	SB4C-8	Heating/cooling — no fan switch — constant fan in heating and/or cooling position	
None	SB4A-10A	Heating/cooling Special for Lear-Seigler electric furnace	
None	SB3A	Heating only with fan switch	
None	SB3C	Cooling only with fan switch	
None	SB4C	Heating/cooling No fan switch	

REPLACING USING 490-400 SUBBASE			
USE RED JUMPER WIRE *	CONNECT CONVERTIBLE LEAD WIRE (WHITE) TO TERMINAL *	ADDITIONAL WIRING INSTRUCTIONS *	FIELD WIRE TO TERMINALS
As shipped	As shipped	None	W Y G Rc
Cut red jumper wire & remove	As shipped	None	W Y G R _H Heating trans. to "R _H " Cooling trans. to "Rc"
As shipped	As shipped	None	W Y Rc
As shipped	Move to "A2"	Cut yellow jumper wire	W Y G Rc A2 Connect old "A" terminal wire to "A2" terminal
As shipped	As shipped	None	W Y G Rc O Connect old "A" terminal wire to "O" terminal
As shipped	"A2"	None	W Y G Rc
As shipped	"A2"	Connect short green jumper wire to terminals "W" & "Y" (packaged loose)	Y G Rc O Connect old "A" terminal wire to "O" terminal
As shipped	"A2"	Connect short green jumper wire to terminal "W" & "Y" (packaged loose)	Y G Rc B Connect old "A" terminal wire to "B" terminal
As shipped	As shipped	None	W Y G Rc B Connect old "A" terminal wire to "B" terminal
CANNOT BE REPLACED BY 490-400. USE EXACT REPLACEMENT — ORDER 490-416 —			
As shipped	As shipped	"B" terminal was used on some older models	W Y G Rc (B)
Cut red jumper wire & remove	As shipped	None	W Y G Rc R _H Connect old no. 5 wire (if any) to "W" terminal
As shipped	"W"	None	W G Rc Connect old "J" terminal wire to "G" terminal and old "4" terminal wire to "Rc" terminal
CANNOT BE REPLACED BY 490-400			
As shipped	As shipped	None	W Y G Rc B Connect old "A" terminal wire to "B" terminal
As shipped	As shipped	None	W G Rc
As shipped	As shipped	None	Y G Rc
As shipped	As shipped	None	W Y Rc

* Refer to Figure 1 for identification and location.

REPLACING COMPETITIVE SUBBASES

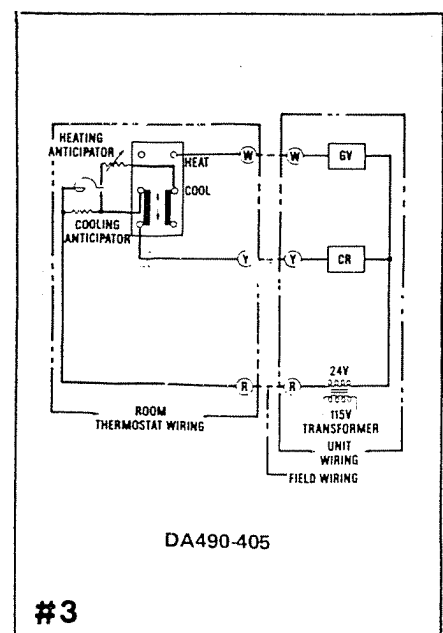
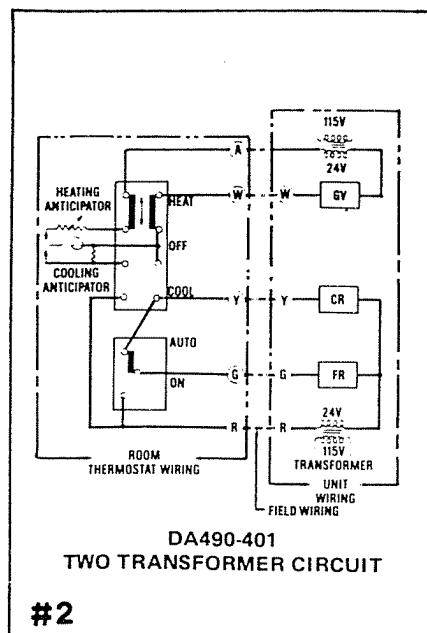
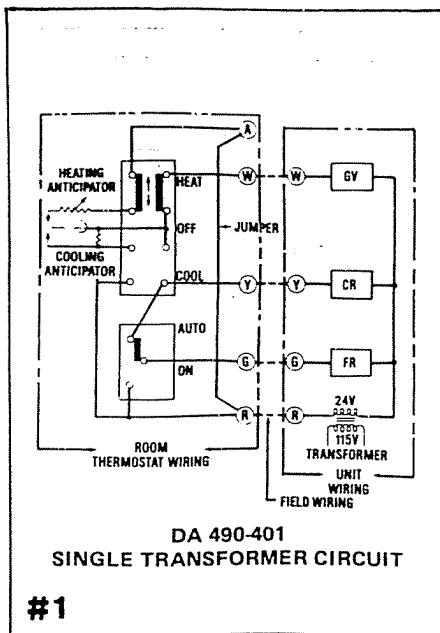
NOTE: An appropriate 400 Series thermostat will also be required.

TO MAKE OR REPLACE	USE RED JUMPER WIRE*	CONVERTIBLE LEAD WIRE (WHITE) TO TERMINAL*	ADDITIONAL WIRING INSTRUCTIONS*	FIELD WIRE TO TERMINALS	APPLICATION NOTES
Honeywell Q539A1014 Q527A	As shipped	"Y"	None	W Y G Rc B O	Do not use Terminals "Rh" and "A2"
Honeywell Q539C1020 Q527C	As shipped	"Y"	Normally used on gas air conditioning systems. Be sure replacement thermostat is a TX400-401 for gas air conditioning	Y G Rc O	"Heat" position on system switch is not used — disregard
Honeywell Q539F1001 Q405E	As shipped	"Y"	Old thermostat did not have a cooling resistor. Remove cooling resistor from replacement thermostat.	W G Rc O	"Heat" position on system switch is not used — disregard
Honeywell Q539G1000 Q405M	As shipped	"A2"	The cooling selector position will cycle the fan when cooling is called for.	W G Rc B	Fan switch must be left in "Auto" position. Do not use Terminals "Y", "O", "A2" and "Rh"
Honeywell Q539J1006	As shipped	"A2"	Wire going to terminal "P" on Honeywell is connected to terminal "A2" on new subbase.	W Y G Rc B O	Do not use Terminal "Rh"
ITT-General T199Y	As shipped	"Y"	Wire going to terminal "K" on ITT-General is connected to terminal "Rc" on new subbase.	W Y G Rc B O	Do not use Terminals - "Rh" and "A2"
ITT-General T199L	As shipped	"Y"	None	W Y G Rc	System has a separate heating fan relay.
White-Rodgers 1F56-301 Single Transformer	As shipped	"Y"	Wire going to terminal "Rc" on White-Rodgers is connected to terminal "Rc" on new subbase.	W Y G Rc	
White-Rodgers 1F56-301 Dual Transformer	Remove	"Y"		W Y G Rc A	
White-Rodgers 1F56-305 Gas Air Conditioning	As shipped	"Y"		W Y G Rc	Use TX400-401 thermostat for gas air conditioning
White-Rodgers 1F56-306 Electric Heating	As shipped	"A2"	Wire going to terminal "4" on White-Rodgers is connected to terminal "Rh" on new subbase.	W Y G Rc	Fan relay cycles on heating and/or cooling

* Refer to Figure 1 for identification and location.

WIRING DIAGRAMS

GV – gas valve, CR – cooling relay, FR – fan relay, FDS – fan delay switch, DM – damper motor, COV – change over valve, C – compressor



WIRING DIAGRAMS (Cont'd)

GV – gas valve, CR – cooling relay, FR – fan relay, FDS – fan delay switch, DM – damper motor, COV – change over valve, C – compressor

