Interoffice Letter

CARRIER TECHNOLOGIES
BUILDING SERVICES DIVISION

To: ALL DISTRICT MANAGERS
SERVICE MANAGERS
SERVICE ENGINEERS
TECHNICAL REPRESENTATIVES

Date: JUNE 16, 1986

From: MIKE DE CHIARO

Office: CBS CRANFORD

Subject: SANDWICHED DIFFUSER WALL DIS - ASSEMBLY F.E.R. 86 - 5

Purpose:

To provide information to the field about proper dis-assembly of sandwiched diffuser walls.

Machines Affected:

All 19DM & 19DR compressors built using a (3) digit compressor code.

Background:

Certain DM compressors built during 1985 utilized a sandwiched diffuser wall assembly. It consisted of a layer of teflon sandwiched between (2) pieces of steel. The purpose in mind was to avoid having the diffuser vanes rubbing against the diffuser plate. Also once the diffuser plate was removed you would see all (20) diffuser vanes tied together by a ring with springs under each blade.

This entire design was dropped once the hardened diffuser vanes were developed. Subsequently, the DM compressors were built as the original DM training tape shows, (see attachments).

The reason for this report is to point out the differences between the (2) types of walls should the time arise when a compiete disassembly of the diffuser wall and piston assembly be required.

Diffuser Wall Dis-Assembly:

Before beginning the dis-assembly process you should consult with the training catalogue entitled, 19DM compressor (volute) disassembly guide. This will help familiarize yourself with the way the entire assembly comes apart.

After reviewing the dis-assembly guide you will note that the diffuser assembly is bolted to the piston by (3) capscrews. It is at this point that the difference between the standard and the sandwiched wall takes place. To get to these (3) cap screws the following takes place for both walls:

Standard Wall

1. Remove all of the diffuser vanes and the capscrews will then be exposed.
2. Unscrew the (3) capscrews and the diffuser assembly comes right off of the piston.

Sandwiched Wall

1. Obtain (3) C-clamps and position them 120° apart around the diffuser wall assembly. The C-clamps will hold back in the spring force while you are completely removing the (20) slot headed screws that encircle the diffuser assembly. Once all of the screws are taken out the spring pressure can be relieved by evenly letting up on the C-clamps.

2. If the C-clamps cannot be installed for whatever reason, you must remove all of the (20) screws evenly to gradually release the spring force. The screws are long enough to release the spring force completely before the wall comes apart.

   Note: It should be pointed out that considerable spring tension is being exerted on the top half of the sandwiched wall. This spring tension can go up to 200 lbs of force and it should be released gradually to avoid any possibilities of personal harm.

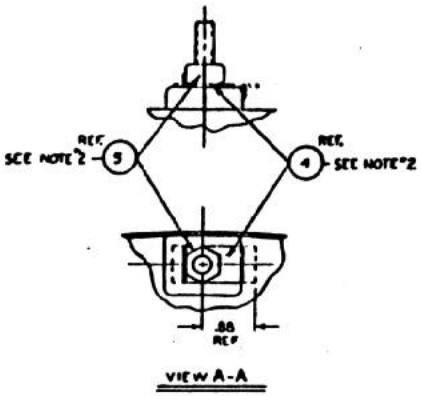
3. Once all of the screws are out you will then be able to lift the entire top half of the diffuser assembly apart. This will consist of the sandwiched plate, diffuser vanes, and springs which are all ganged together by a metal ring.

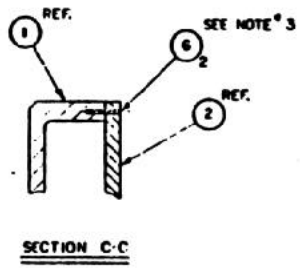
4. Once this top half is completely off you can now get to the (3) cap screws that hold the bottom half of the wall assembly to the piston.

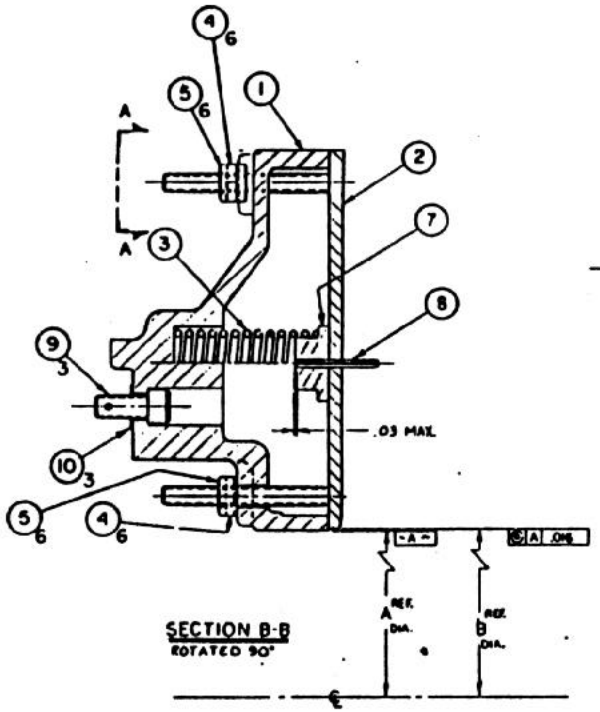
STANDARD DIFFUSER WALL

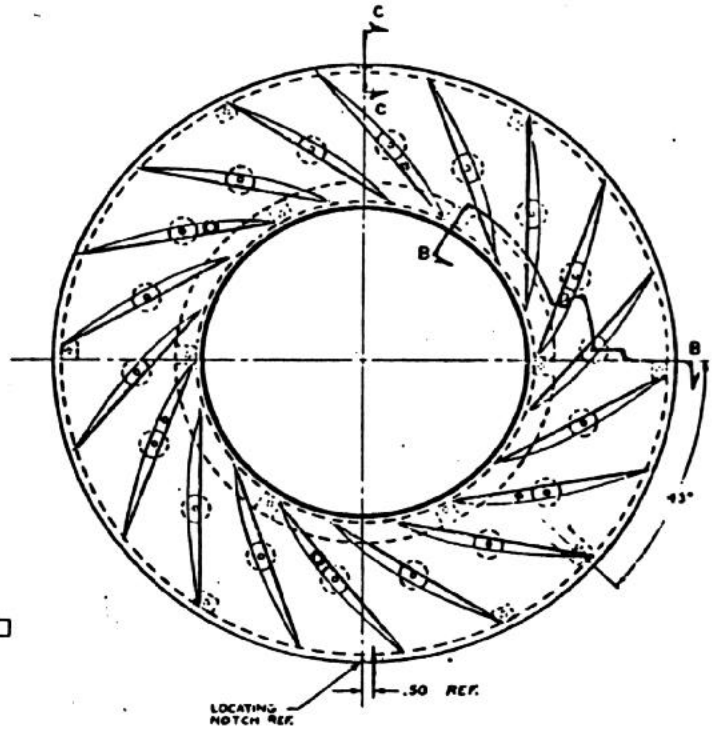
Note: You just have to remove the vanes and the (3) cap screws are exposed.

(See #9 for screw location).









CARRIER SENSITIVE
RESTRICTED DRAWING.
ASSIGNED TO: CARRIER BONE

SEE SHT 1

DIFFUSER WALL FINAL ASSY

D

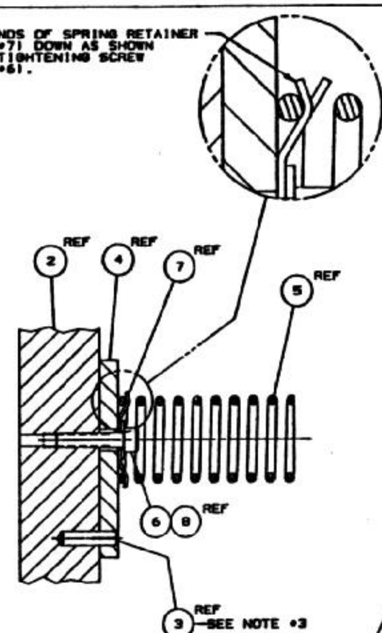
SUPERSEDES ______

REQ'D PER ASS'Y

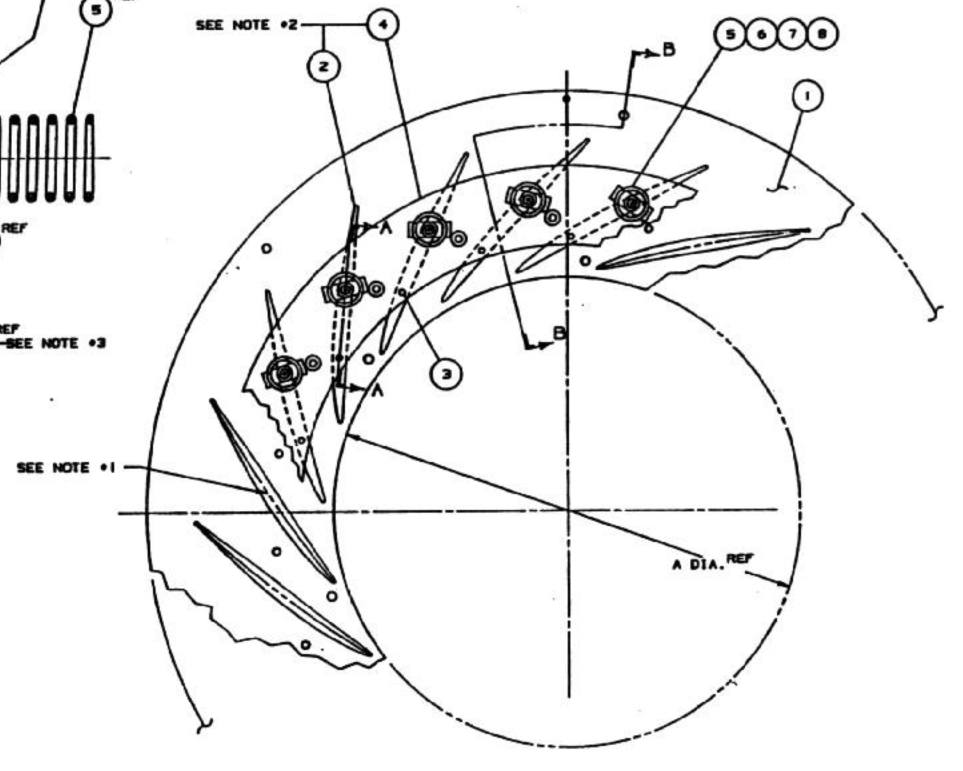
ITEM	PART NO.	19DM232-484	19DM232-494	19DM332-484	19DM332-494	DESCRIPTION
1	19DM232-564	1				DIFFUSER WALL ASSEMBLY (ON DRAWING 19DM232-564)
	19DM232-584		1			
	19DM332-564			1		
	19DM332-584				1	
2	19DM232-173	1				VANE SET MACHINING
	19DM232-193		1			
	19DM332-173			1		
	19DM332-193				1	
3	AX22AH127	19	20	19	20	GROOVE PIN 3/16" X 3/4" LG.
4	19DM232-1334	1				VANE RING MACHINING
	19DM232-1354		1			
	19DM332-1334			1		
	19DM332-1354				1	
5	19DM232-1032	19	20			SPRING
	19DM332-1032			19	20	
6	AA43AA128	19	20	19	20	SCREW, NYLOK #10-24 X 3/4" LG.
7	19DM232-1262	19	20			SPRING RETAINER
	19DM332-1262			19	20	
8	AU01AA131	19	20	19	20	WASHER, PLAIN #10
	B-234	.0001	.0001	.0001	.0001	ENGINEERING REQUIREMENT
	DIMENSION A REF	15.24	16.44	19.28	20.78	
	CACL. WT. (LBS.)	74•	72•	122•	119•	
	USED ON	19DM232, 242, 252, 262, 272-284	19DM232, 242, 252, 262, 272-274	19DM332, 342, 352, 362, 372-384	19DM332, 342, 352, 362, 372-374	

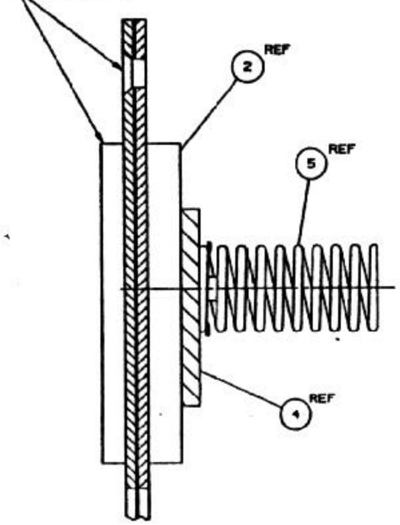
NOTES:

1. SLIT SEAL RING MATERIAL ALONG A LINE APPROX. IN THE CENTER (LENGTHWISE) OF THE VANE HOLE. PUSH VANES THRU HOLES FROM THE COUNTERSUNK HOLE SIDE OF THE DIFFUSER WALL ASSEMBLY.
2. VANE & RING ASSEMBLY AND DIFFUSER WALL ASSEMBLY TO BE KEPT AS A MATCHED SET, ONCE ASSEMBLED. MATCH MARK (1) VANE & VANE HOLE TO INSURE PROPER REASSEMBLY IF SEPARATED.
3. AFTER TIGHTENING SPRING RETAINER SCREW (ITEM #6), DRILL 3/16" DIA. HOLE (USING 5/32" DIA. HOLES IN RING (ITEM #4) AS A PILOT) THRU RING AND .50 MIN. DEEP INTO VANE. INSTALL GROOVE PIN (ITEM #3) FLUSH WITH RING (ITEM #4).
4. COMPONENT INSPECTION PROCEDURE PER ENGRG. REQ'MT. B-234.



SECTION A-A





REV.	DESCRIPTION	DATE	BY			
B	NEW RELEASE ASS'Y. NOS. 19DM232-494, 19DM332-484	8-19-85	T. KING	EGG		195-4733
A	RELEASE ASS'Y. NO.	1-30-85	T. KING	HWK	BSL	195-4673

THIRD ANGLE PROJECTION

MATERIAL: SEE B/M

APPLIED FINISH: PART(S) MUST COMPLY WITH ENGR. REQ'M.

ECO NO. | WEIGHT SEE B/M

AUTH. NO. 194-4714

ENGINEERING WSD 3-5-85 | MANUFACTURING EP 3-5-85

DR. T. KING 1-30-85

CARRIER AIR CONDITIONING — SYRACUSE, NEW YORK — DIVISION OF CARRIER CORPORATION — Carrier

TITLE: DIFFUSER WALL & VANE ASSEMBLY

SIZE D | 232-484 | REV. B

SHEET 1 OF 1

SIMILAR TO ______

Note: 1. Diffuser vanes and springs are all grouped together by rack A.

2. To disassemble the top half of the diffuser wall, remove the (20) slotted screws B.

3. It is important to remove the (20) screws evenly, (or to use (3) C-clamps), to relieve the cosiderable spring tension, otherwise possible injury could result.