



E. B. Badger & Sons Co.

75 Pitts Street, Boston, Mass.

Offices and Agencies
In Nineteen Leading Cities

PRODUCTS—Corrugated Copper Expansion Joints; Pipe Bends; Chemical Apparatus; Copper and Sheet Metal Work; Copper Boilers.

BADGER SELF-EQUALIZING EXPANSION JOINTS

Badger Expansion Joints distribute the expansion *uniformly* over the whole joint by means of cast iron or steel equalizing rings. These fit the corrugations, as shown, and prevent local concentration of the stress on any one corrugation. The tubes are made of the best deoxidized copper. No packing is used or needed. They will not leak.

Standard Badger Joints are built for pressures up to 200 lb. Single joints take care of expansions up to 3 in. at any one point. Double joints handle up to 6-in. expansions. Both flanged and welding types are made.

Low Pressure Joints—Single and Multiple Expansion—Especially suited to absorb vibration and shock and to provide a flexible connection between turbine or engine exhaust and the condenser. Guaranteed for pressures to 30 lb. Made with 1 to 5 corrugations. Fitted with flanges of low or standard pressure dimensions. Also made oval and rectangular to fit requirements.

Flanged Type, for Saturated Steam, Hot Water and Other Hot Liquids—For 4 and 5-In. Pipe—Made with 4 or 8 corrugations for 1 or 2 in. of expansion, respectively. Fitted with alignment bars. Made for low, standard or extra heavy pressure.

For 6-In. Pipe and Larger—Made with 2, 3, 4 or 5 corrugations for 1, 1½, 2 or 3 in. of expansion, respectively. Furnished with 125-lb. standard and 250-lb. extra heavy flanges. Sizes larger than 30 in. furnished on special order.

Also furnished in double units, including base plate, anchor and guides with or without service outlet.

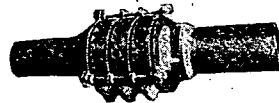
For Superheated Steam—Similar to preceding type, except that a telescoping monel metal sleeve is fitted inside the joint to protect the copper from deterioration due to the superheat in the steam.

Number of corrugations and dimensions same as for joints for 6-in. pipe and larger.

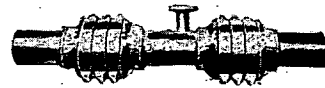
FLANGED TYPES Face to Face Dimensions in Inches					
Size	Number of Corrugations				
	2	3	4	5	8
4, 5	12½	16	19	23	19½
6	12½	16	19	23	19½
8	12½	16	19	23	19½
10	12½	16	19	23	19½
12	13	16½	19½	23½	19½
14	13½	17	20	24	19½
16	13½	17	20	24	19½
18	14	17½	21	24½	19½
20	15	18½	21½	25½	19½
22	15	18½	21½	25½	19½
24	15½	19	22	25½	19½
26	15½	19	22	25½	19½
28	15½	19	22	25½	19½
30	15½	19	22	25½	19½

Welding Type—Made for saturated steam and for superheated steam with monel metal sleeves. Open pipe nipples are homogeneously attached to the copper, with ends scarfed and ready for welding into pipe lines.

Single—For 3 and 4-in. pipe have 4 and 8 corrugations for 1 and 2 in. of expansion, respectively. For 5 to 20-in. pipe have 2, 3, 4 or 5 corrugations for 1, 1½, 2 or 3 in. of expansion, respectively.



Double—Similar to single type, except that two expansion joints are welded in tandem. Made with 4, 6, 8 or 10 corrugations for 2, 3, 4 and 6 in. of expansion, respectively. Also furnished as units including base plate, anchor and guides and with service connection if desired.



WELDING TYPES Face to Face Dimensions in Inches									
Size	Single Type No. of Corrugations					Double Type No. of Corrugations			
	2	3	4	5	8	4	6	8	10
3, 4	35½	38½	42	45½	43	56½	60½	70½	79½
5, 6	35½	38½	42	45½	43	60½	66½	73½	80½
8	35½	38½	42	45½	43	61	67½	74½	81½
10, 12	35½	38½	42	45½	43	62	68½	75½	82½
14, 16	35½	38½	42	45½	43	63½	69½	76½	83½
18, 20	35½	38½	42	45½	43	64½	70½	77½	84½

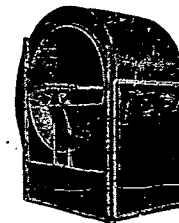
American Blower Corporation

General Offices: Detroit

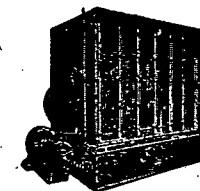
Works: DETROIT, MICH.—BOND HILL, CINCINNATI, OHIO

Branches and Sales Offices

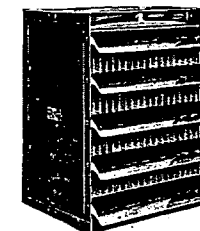
City and Address	Telephone	City and Address	Telephone
AKRON, OHIO, 225 W. Exchange Street	Main 6096	LOUISVILLE, KY., 1119 Heyburn Bldg.	City 952
ATLANTA, GA., 614-615 Bona-Allen Bldg.	Walnut 5643	MILWAUKEE, WIS., 1418-19 Majestic Bldg.	Grand 1986
BALTIMORE, MD., 207-8 Munsey Bldg.	Plaza 3774	MINNEAPOLIS, MINN., 808 La Salle Avenue	Main 0034
BIRMINGHAM, ALA., 1308 American Traders Bk. Bldg.	7-2383	NEWARK, N. J., 79-81 Ogden Street	Branch Brook 8540-41
BOSTON, MASS., 1003 Statler Bldg.	Liberty 8347-48	NEW ORLEANS, LA., Queen and Crescent Bldg.	Main 5971
BUFFALO, N. Y., White Bldg.	Seneca 2668	NEW YORK, N. Y., 50 Church Street	Cortlandt 1009
CHARLOTTE, N. C., 220 Builders Bldg.	Jackson 122	OKLAHOMA CITY, OKLA., 1722 Petroleum Bldg.	2-1542
CHATTANOOGA, TENN., 1104 James Bldg.	6-6057	OMAHA, NEBR., Peters Trust Bldg.	Atlantic 6348
CHICAGO, ILL., 228 N. La Salle Street	Central 1631-32	PHILADELPHIA, PA., Otis Bldg.	112 South 16th Street
CINCINNATI, OHIO, 905 Sycamore Street	Main 6846-47	PITTSBURGH, PA., 801 First Nat'l. Bank Bldg.	Atlantic 3496-3497
CLEVELAND, OHIO, 1302-3 Sweland Bldg.	Canal 8161-62	PORTLAND, ORE., 1002 Pacific Bldg.	BEacon 6197
COLUMBUS, OHIO, 921 Mercantile Bk. Bldg.	Main 3443	READING, PA., 506 American Casualty Bldg.	37112
DALLAS, TEXAS, 921 Mercantile Bk. Bldg.	X-5518	ROCHESTER, N. Y., 907 Gas & Elec. Bldg.	89 East Avenue
DAVENPORT, IA., 401 First Nat'l Bk. Bldg.	Dav. 4006	St. LOUIS, MO., 1221 Boatmen's Bk. Bldg.	Garf. 1278
DENVER, COLO., 1226 California Street	Main 5818	SALT LAKE CITY, UTAH, Dooly Bldg.	Wasatch 1680-1681
DETROIT, MICH., 2539 Woodward, Hofman Bldg.	Cad. 8880-81	SAN FRANCISCO, CALIF., Rialto Bldg.	Sutter 1024-1025
EL PASO, TEXAS, P. O. Box 240	Main 2739	SCHENECTADY, N. Y., 331 State St., Imperial Bldg.	7503
EXPORT DEPT., Rm. 1510, 30 Church Street, N. Y. C.	Cortlandt 4856	SEATTLE, WASH., 605 Leary Bldg.	Elliott 0713
FLINT, MICH., 206 Sherman Bldg.	9-3310	SOUTH BEND, IND., 505 Pythian Bldg.	3-5455
GRAND RAPIDS, MICH., 604 Bldg. & Loan Bldg.	Citizens 41122	STRACUSE, N. Y., 1200 Hills Bldg.	3-0170
HARTFORD, CONN., Rm. 605, 252 Asylum Street	2-2027	TACOMA, WASH., 1127 St. Paul Avenue	Main 3150
INDIANAPOLIS, IND., 819 Continental Bk. Bldg.	Lincoln 6745	TOLEDO, OHIO, Rm. 302, 320 Ontario Street	Adams 6512
KANSAS CITY, MO., 310-312 Mutual Bldg.	Victor 5965	YOUNGSTOWN, OHIO, 1008 Mahoning Bank Bldg.	4-3593
LOS ANGELES, CALIF., 427 Union Ins. Bldg., 1008 W. Sixth St.	Faber 3871	WASHINGTON, D. C., 934 Nat'l. Press Bldg.	Nat'l 4857



"Sirocco" Fans and Blowers for heating, ventilating, cooling, drying and mechanical draft.

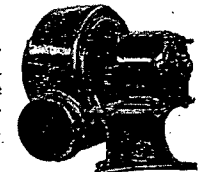


"Sirocco" Air Washer for purifying and humidifying air for dehumidifying and cooling.

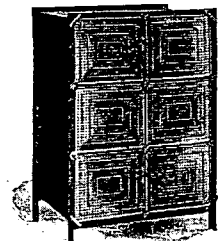


Venturafin Unit Heater—one small unit is equal to 500 feet of direct radiation—occupies only one-fourth the space and has only one-tenth the weight.

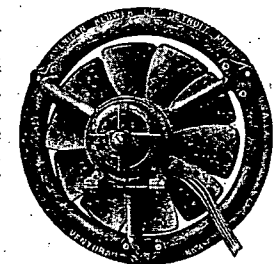
Descriptive folders on any subject of air handling—heating, ventilating and mechanical draft will be furnished free on request.



"Sirocco" Utility Blower—a compact, durable ventilator for installation with ducts.



A. B. C. Air Filter—Dry plate constant effect air filter—a highly efficient device for collecting dust in public and industrial buildings of every type and description.



"Ventura" Disc Fan for operation under free air delivery conditions—a complete ventilation system in itself.