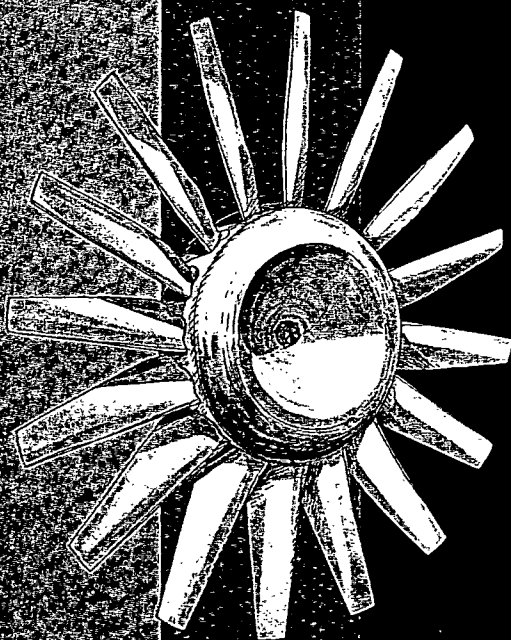
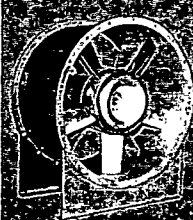


Save Space, Weight, and Money Specify Joy Adjustable Blade Fans

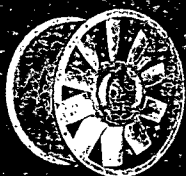


Joy axial-flow fans offer you substantial economies in space, weight, and money. Built around the motor, the fan becomes an integral part of the duct . . . requires no foundations, complicated duct offsets and elbows, or drives. Simple blade adjustment provides a wide pressure range for any volume, or change in volume, and permits on-the-job correction to meet changed conditions. Fewer blades of the modestly priced Series 800 Axitube give unusually low noise levels while maintaining high efficiencies. For even higher efficiency, Joy offers Series 900 and 1000 Axivanes. Both have the same performance characteristics, but Series 900 is more economical. Two-stage, controllable pitch, belt-driven, and custom modified units also available. For more information write to Joy Manufacturing Company, 900 Woodland Avenue, Michigan City, Indiana.

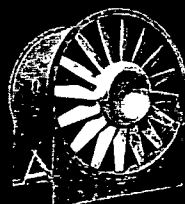
© 1978



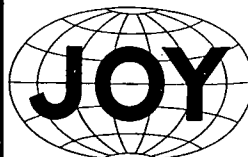
Series 800 Axitube



Series 900 Axivane



Series 1000 Axivane



Underground Thermal Conduits are "customized," designed by the engineer to perform properly in the ground condition for each specific project—Value engineering in practice.

Significant Features

WATERTIGHTNESS—New tougher heat resistant polyvinyl chloride plastic sheeting using compatible sealant adhesives insure conduit integrity.

INSPECTION—Continuous internal vents and emergency drains remove any water and signal accidental breakage.

RESPONSIBILITY—Specialty subcontractors under license and surveillance using trademarked components to provide quality installations.

STABILITY—Lightweight aggregate-Portland cement concrete develops uniform strength unaffected by time or temperature.

WATER RESISTANCE—Internal emergency drains and vents will remove area water or signal pipe break. Admixtures in the insulating concrete retard moisture absorption.

SIMPLICITY—Pipes are laid and tested on precast supports set to line and grade, coated with corrosion inhibitor waterproof and high temperature resistance grease, and embedded in the special "b-u" insulating concrete. Backfill and energize the next day.

INSULATING ENCASEMENT—New semi-structural air duct and pipe chase encasement provides positive protection, freedom from flotation and thermal insulation.

RELIABILITY—Air-placed lightweight concrete completely encloses air ducts or pipe chases to make a monolithic structure. New techniques insure rapid placement with high early strength, allowing backfill the next day.

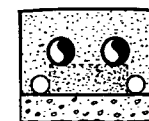
FLEXIBILITY—Air-placed lightweight concrete can be used to make small tunnels (chases) carrying piping in the usual manner without rollers and conventional insulation is not required. This concept ideal for moderate temperature hot water systems where temperature difference between pipes is slight. General Cost is only a fraction of conventional methods. Piping is free to expand and contract. Special access and inspection pits may be provided as desired.

PERFORMANCE—Chilled water and low temperature hot water insulation entering the second decade of service, improved by internal emergency drains and vents to remove possible condensation and signal pipe or casing breaks.

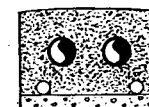
VERSATILE—Lightweight aggregate bound with high melt point asphalt will embed any number or size of piping. Strength acquired by cooling.

EFFICIENT—"k" factor for 16" /C.F. density material 0.45 Btu/S.F./hr./°F, provides a "U" factor of 0.15 to 0.10 for a 3 or 4 inch thickness.

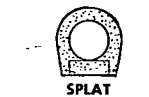
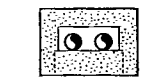
RAPID DRYOUT—Government engineers assume that all heat transmission conduits will become wet, hence recovery of design insulation value in a minimum time is required. Multiple vents and drains for optimum water removal plus formulated insulated concrete for rapid moisture release fulfills Government criteria.



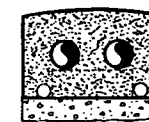
I-D



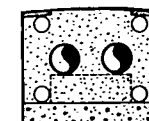
b-t-u



SPLAT



V-A



G-5

Components/Characteristics

BASE PAD—3" minimum structural concrete.
PARTING MEDIUM—special block-out material allows unrestricted longitudinal pipe movement.
INSULATING CONCRETE—water resistant mix, 25# /C.F. ODD, "k" factor 0.70, crushing strength 14,400# /S.F. minimum.
WATERPROOFING—external casing is 20 ga. special polyvinyl chloride continuous waterproof membrane. Internal drains and vents remove accidental water and signal pipe or casing breaks.

PARTING MEDIUM—Corrosion inhibitive grease or heat-degraded blockout around pipe allows unrestricted longitudinal pipe movement.

INSULATING CONCRETE—high strength water resistant mix, 30# /C.F. ODD, "k" factor 0.88, crushing strength 28,800# /S.F.

WATERPROOFING—integrally mixed "Z" crete brand waterproofing compounds and greater density resist intermittent water exposure. Internal drains and vents remove accidental water or signal pipe breaks. A watershed or drape of plastic sheeting is recommended in areas of heavy surface irrigation. Note: 2" Base Pad may be installed when ground conditions require.

STRUCTURAL VALUE—Air-placed lightweight concrete encasement meets or exceeds strength required of sewer tile. At 30# /C.F. density, crushing strength is 43,200# /S.F. minimum. The arch effect and backfill will tolerate any normal construction load.

INSULATION VALUE—This dual function material has a "k" factor of 0.90 Btu/S.F./hr./°F or 2 inch thickness is roughly equivalent to 1 inch of conventional insulation. Low heat capacity, approximately 1/12 that of structural rock concrete, insures rapid warm up and delivery of hot air at register.

WATER RESISTANCE—Integrally mixed additives resist temporary water exposure. Internal vents and drains or gravel and tile undergrains leading to sumps should be installed where ground water is expected.

BASE PAD—3" minimum structural concrete.
PARTING MEDIUM—special paper around pipe allows unrestricted longitudinal pipe movement.

INSULATING ASPHALTIC CONCRETE—special formulation lightweight aggregate bound with asphalt-16# /C.F. density, "k" factor 0.45, load carrying capacity 1,300# /S.F. minimum at 260°F. pipe temperature.

WATERPROOFING—20 gauge special polyvinyl chloride continuous external waterproof membrane . . . Internal drains and vents.

Note: Special underlab applications free of water may allow elimination of waterproofing, base pad and internal drains.

BASE PAD—3" minimum structural concrete.
PARTING MEDIUM BLOCK-OUT—special heat destroyed wrapping serves as secondary vent allows unrestricted longitudinal pipe movement.

INSULATING CONCRETE—new lightweight formulation 20# /C.F., oven dry density, "k" = 0.53, crushing strength 10,000# /S.F. minimum.

WATERPROOFING—External casing is 20 gauge special polyvinyl chloride continuous waterproof membrane . . . Multiple internal drains and vents remove accidental water and signal pipe or casing breaks.

FOR COMPLETE DETAILS AND SPECIFICATIONS REFER TO THE Zcrete DESIGN DATA HANDBOOK

CONCRETE THERMAL CASINGS, INC.

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