

These Features Make DART UNIONS OUTSTANDING

1. BRONZE-TO-BRONZE BALL JOINT

Bronze meets bronze in each Dart Union to form a true ball joint that is non-corroding.

2. DROP-TIGHT SEATS

These precision-ground bronze seats make a drop-tight connection which insures longer, more economical, leak-proof service. No heavy wrenching is necessary with Darts for they close and open easily.

3. RUGGED CONSTRUCTION

Body and nut made of highest, air-rehned malleable iron — practically indestructible.



Your supplier will gladly
show you these outstanding
money-saving features.

E. M. DART MANUFACTURING CO.
PROVIDENCE 3, RHODE ISLAND

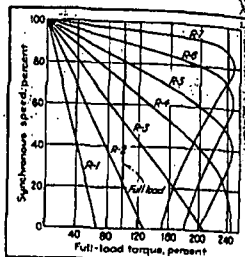
revolving field.); I_s = the allowable secondary current inrush; and K = factor allowing for voltage drop in line at starting, motor impedance leakage. Factor K equals .81 for 1/2 size motor allowing 200% current inrush.

For speed control, resistance to give a desired speed reduction is determined for a Y-connected circuit by formula:

$$R = \frac{ES}{1.73I}$$

Where R is total equivalent resistance of the motor including line; E , voltage with rotor locked; S , slip in percent secondary current.

The various resistance steps may be



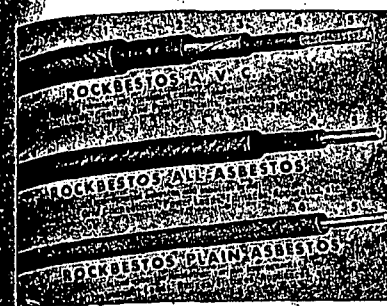
depicted graphically upon the above characteristic curves as follows: curve R_s , which gives maximum torque at standstill is followed until it reaches the full-load torque line where the controller may remain if that particular speed is desired. If the next higher speed is desired, a horizontal line is drawn to the R_s curve and the motor will accelerate along this curve until the full-load torque line is again reached, or until desired speed is obtained, corresponding to the torque on the motor. This process is repeated for each succeeding step until the desired conditions are secured. In each case where a resistor is cut out of circuit, the current inrush must be checked to ensure a safe percentage increase in current. Milton N. Kraus, Sunnyside, Long Island.

Rotor Current Calculated

VALUES OF STARTING CURRENT and resistance that IHV wishes to determine are governed by the torque and losses during starting. By changing the resistance in the rotor circuit, he can obtain any desired torque and speed, which the motor is capable of developing between standstill and full speed.

(Continued on page 148)

PERMANENTLY INSULATED TO RESIST HEAT FUMES - OIL - GREASE - MOISTURE - FLAME



From the three basic designs illustrated Rockbestos has developed a complete line of 125 failure resisting wires, cables and cords, a few of which are described. All have the same performance guaranteeing characteristics detailed below. Write for a catalog or samples.

Rockbestos Permanent Insulation Insures Long-Lived Service

- 1 A tough impregnated asbestos braid, resistant to heat, flame, moisture, oil, grease, alkalis and corrosive fumes.
- 2 Felted asbestos insulation impregnated with heat, flame and moisture resisting compounds will not dry out with age, burn, or bake brittle under high temperatures.
- 3 Lubricated varnished cambric for high dielectric strength and added moisture resistance — protected from heat, flame and oxidation by felted asbestos walls.
- 4 Impregnated asbestos insulation that withstands heat of overloads and aging and won't become brittle, crack, rot or burn.
- 5 Conductors are perfectly centered in helically applied non-flowing insulation, and will always remain so.

ROCKBESTOS 300 VOLT HEAT RESISTING FIXTURE WIRE

(Underwriters' Type AFD)
Size No. 10 to 18 AWG stranded plain copper conductor insulated with black or white impregnated felted asbestos.

Rockbestos asbestos insulated fixture wires, approved by the Underwriters' Laboratories for lighting fixture wiring, will not bake out under the high socket temperatures developed in modern high-wattage fixtures. Also used for small motor and apparatus leads, switchboards, etc.

ROCKBESTOS A.V.C. 300 VOLT BOILER ROOM WIRE

(National Electrical Code, Type AFI)
Size No. 10 to 18 AWG insulated with varnished cambric, impregnated felted asbestos and asbestos braid. Size 9 to 1/0 has a rubber wall of felted asbestos next to the conductor.

For lighting and control circuits exposed to heat and moisture, oil, grease, corrosive fumes or fire hazard around furnaces, ovens, lehrs, smoking pits, boilers, etc., this permanently insulated wire is ideal. It won't bake brittle, crack, rot, flow or swell.

ROCKBESTOS 300 VOLT HEAT RESISTING DUPLEX FLEXIBLE CORD

(Underwriters' Type APFD)
Size No. 10 to 18 AWG stranded plain copper conductor insulated with impregnated felted asbestos, protected together and covered with a cotton braid.

This heat-resisting cord is approved for use in lighting fixtures, and is recommended for pendant types as it does not dry out or crack at the socket. Also on apparatus and appliances which develop heat in operation or are used in hot, dry places. Twisted pair, tripled or triplex constructions also available.

ROCKBESTOS A.V.C. 300 VOLT SWITCHBOARD WIRE

(National Electrical Code, Type AFB)
Size No. 10 to 18 AWG insulated with varnished cambric and impregnated asbestos insulation and prep. Mark, white or colored flameproof braid.

Combine fire insurance and fine appearance in your switchboards with flame and heat resistant Rockbestos A.V.C. Switchboard Wire. Takes right angle bends without cracking because asbestos wall acts as a cushion beneath lead. Rockbestos A.V.C. Hinge and Switchboard Bus cables have same characteristics.

ROCKBESTOS THERMOSTAT CONTROL WIRE

Size No. 14, 16 and 18 AWG in two to five conductors with 210°-225° or (for 1/8 and 1/4) 231° of impregnated felted asbestos insulation and steel armor.

A multi-conductor wire for fuel burner controls, safety pilots, intercommunications and signal systems. Heatproof, fireproof insulation and steel armor give trouble-proof circuits.

ROCKBESTOS A.V.C. 300 VOLT MOTOR LEAD CABLE

(National Electrical Code, Type AVA)
Size No. 10 to 18 AWG in 1,000,000 CM insulated with two walls of impregnated asbestos and a high dielectric varnished cambric inner wall, with a heavy asbestos braid overall.

Use this apparatus cable for coil connections, motor and transformer leads exposed to overloads or high ambient temperatures. It makes a permanent installation as it is resistant to heat, flame, oil, grease and moisture.

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ROCKBESTOS ASBESTOS INSULATED MAGNET WIRE

Size No. 10 to 18 AWG insulated with impregnated felted asbestos, varnished cambric, and asbestos braid. The construction for service ratings to 500°.

This cable is recommended for power leads of heat-exposed equipment and circuits that run near boilers, steam lines, furnaces, kilns and other hot spots. It withstands high ambient temperature and has ample moisture resistance.

ROCKBESTOS 300 VOLT CONTROL CABLE

Size No. 10 to 18 AWG insulated with impregnated felted asbestos, varnished cambric, and asbestos braid. The construction for service ratings to 500°.

Designed for applications requiring a multi-conductor control cable capable of withstanding high temperatures, corrosive fumes, oil, grease and moisture. It also eliminates fire hazard as it will not burn. Used by equipment manufacturers, power companies, steel mills.

ROCKBESTOS ALL-ASBESTOS 300 VOLT RHEOSTAT CABLE

(National Electrical Code, Type AIA)
Size No. 10 to 18 AWG in 1,000,000 CM insulated with a heavy wall of felted asbestos, covered with a rugged asbestos braid designed in black, white or colors.

Use this cable for wiring rheostats, switchboards, elevator and locomotive control panels and equipment exposed to heat, fumes or fire hazard — also for open power circuits in hot, dry locations. For flexible conductor specify Rockbestos All-Asbestos Flexible Apparatus Cable — for solid conductor, Rockbestos All-Asbestos Rheostat Wire.

WRITE NOW FOR
Your copy of the
new No. 10-F
Catalog

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