

BRAKES

Air-Cooled Brakes 1.5 through 100 HP

Models AS-703 through AS-708 Air-Cooled Brakes



Description

The Dynamatic Adjustable Torque Brakes consist of a rotating member (rotor), keyed to a straight-through double extension shaft, and a stationary brake coil. The brake imposes controlled deceleration at variable speeds. There is no physical contact between rotating and stationary members. This results in smooth response, thereby eliminating shock loading and extending equipment life. These brakes may be equipped with an optional tachometer generator mounted externally to provide a feedback signal to the brake's controller. The controller provides the DC excitation for the brake coil. The feedback signal from the tachometer generator is compared against a reference signal within the controller to provide accurate, smooth, controlled braking or constant speed throughout the period of excitation. Constant torque can be obtained with highly accurate torque adjustments.

Features & Benefits

- Simple design. Brake consists of a rotor and shaft, stationary brake coil and separate controller. It's easy to understand, install, operate and maintain.
- Fewer wearing parts – all brakes only have two bearings, which offer minimum downtime and maximum production from initial startup.
- Low control power. Full control of maximum load is accomplished with low excitation power.
- Flexible use. Couple the brake shaft directly or with belts.
- Greaseable ball bearings allow extended bearing life with a regular maintenance program.
- Smooth, controlled braking for any type of load provides an ideal means of accurately controlling crane hoists.
- High cooling efficiency results in high horsepower capacities from small physical size brakes.

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Modifications

Specifications for Models AS-703 Through AS-708 Air-Cooled Brakes

| | | |
|------------------------------|--|--|
| Brake | HP and RPM Class F insulation Epoxy protection on coil Stationary coil Coil voltages Alternator AC tachometer generator Cooling | See selection table below Standard Optional Standard 45, 90 VDC - Standard; 110, 220 VDC - Optional Optional Optional Blower cooling |
| Environmental Ratings | Storage temperature Operating temperature Maximum operating temperature Altitude | -4° to 149° F (-20° to 65° C) Standard 32° to 104° F (0° to 40° C) Standard 150° F (65° C) Optional 3300 Ft. (1000 m) Standard |
| Codes and Standards | Mechanical NEMA, as applicable | Standard |
| Reliability Testing | Mechanical 100% dynamometer tested Controllers (sold separately) Pre-tested components Computer test and pre-calibrated PCBs | Standard Standard Standard |

Ordering Information

The air-cooled brake includes a double shaft extension for belted or direct-coupled service. The brake does not normally have a tachometer generator for a speed signal. The generator is offered as a modification. Refer to the engineering data in this section to select the correct size brakes.

Selection Table - Air-Cooled

| Input Speed (RPM) | Model Number |
|-------------------|--------------|
| 1800 | AS-703-01 |
| 4400 | AS-703-02 |
| 1800 | AS-704-01 |
| 4400 | AS-704-02 |
| 1200 | AS-705-01 |
| 2000 | AS-705-02 |
| 1200 | AS-706-01 |
| 2000 | AS-706-02 |
| 900 | AS-707-01 |
| 1800 | AS-707-02 |
| 900 | AS-708-01 |
| 1800 | AS-708-02 |

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Air-Cooled Brake Engineering Data

| Description | Brake Rpm | Model AS | | | | | |
|------------------------------------|-----------|----------|-------|-------|-------|------|-------|
| | | 703 | 704 | 705 | 706 | 707 | 708 |
| 45 VDC | - | | | | | | |
| Cold Ohms | - | 10.0 | 5.0 | 4.0 | 2.0 | 1.9 | .95 |
| Hot Amps | - | 3.5 | 7.0 | 7.3 | 14.5 | 15.5 | 31.0 |
| 90 VDC | - | | | | | | |
| Cold Ohms | - | 39.6 | 19.8 | 15.6 | 7.8 | 8.8 | 4.04 |
| Hot Amps | - | 1.75 | 3.5 | 4.4 | 8.8 | 7.2 | 14.54 |
| Horsepower, continuous dissipation | 3600 | 10.0 | 20.0 | - | - | - | - |
| | 1800 | 7.5 | 15.0 | 20.5 | 36.0 | 65.2 | 100.0 |
| | 1200 | 5.0 | 10.0 | 14.8 | 24.0 | 45.7 | 75.0 |
| | 900 | 3.5 | 7.5 | 11.1 | 18.0 | 34.3 | 56.0 |
| Inertia (Lb. Ft. Sq.) | - | .75 | 1.48 | 7.1 | 14.4 | 49.0 | 89.0 |
| Overhung Load, maximum (Lbs.) | 3600 | 360.0 | 410.0 | - | - | - | - |
| | 1800 | 460.0 | 525.0 | 570.0 | 640.0 | 1700 | 1810 |
| | 1200 | 530.0 | 605.0 | 655.0 | 705.0 | 2000 | 2130 |
| | 900 | 585.0 | 660.0 | 720.0 | 825.0 | 2200 | 2360 |
| Torque, maximum (Lb. Ft.) | 1800 | 53.0 | 110.0 | 210.0 | 420.0 | 870 | 1740 |
| | 1200 | 49.0 | 99.0 | 204.0 | 410.0 | 870 | 1740 |
| | 900 | 43.0 | 90.0 | 195.0 | 388.0 | 870 | 1740 |
| Weight, approximate (Lbs.) | - | 130 | 197 | 276 | 448 | 1025 | 2200 |

Recommended Brake Sizes:

Hook Type Crane Hoist Service

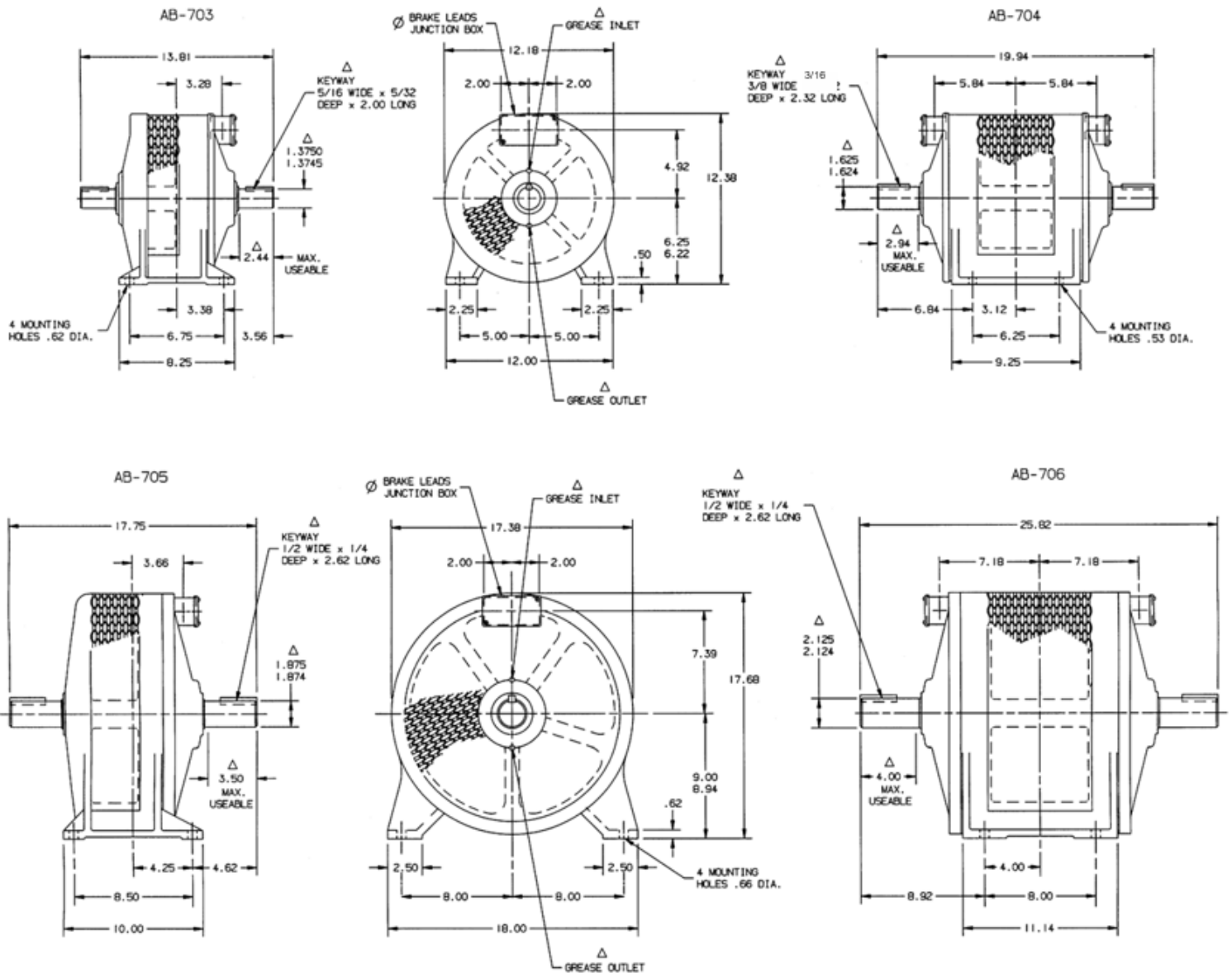
Model application is based on motor speed torque formula adjusted to 85% mechanical efficiency of gearbox and sheaves.

| Motor HP | Brake Model Recommended for Synchronous Speeds of | | | |
|----------|---|----------|---------|---------|
| | 1800 RPM | 1200 RPM | 900 RPM | 720 RPM |
| 15 | 704 | 704 | 705 | 705 |
| 20 | 704 | 705 | 705 | 705 |
| 25 | 704 | 705 | 705 | 706 |
| 30 | 704 | 705 | 705 | 706 |
| 40 | 705 | 705 | 706 | 707 |
| 50 | 705 | 706 | 706 | 707 |
| 60 | 705 | 706 | 707 | 707 |
| 75 | 706 | 706 | 707 | 707 |
| 100 | 706 | 707 | 707 | 707 |
| 125 | 707 | 707 | 707 | 708 |
| 150 | 707 | 707 | 707 | 708 |
| 200 | 707 | 707 | 708 | 708 |

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Outline Dimensions – AS-703 through AS-706



Models AS-703 Through AS-706 Air-Cooled Brakes

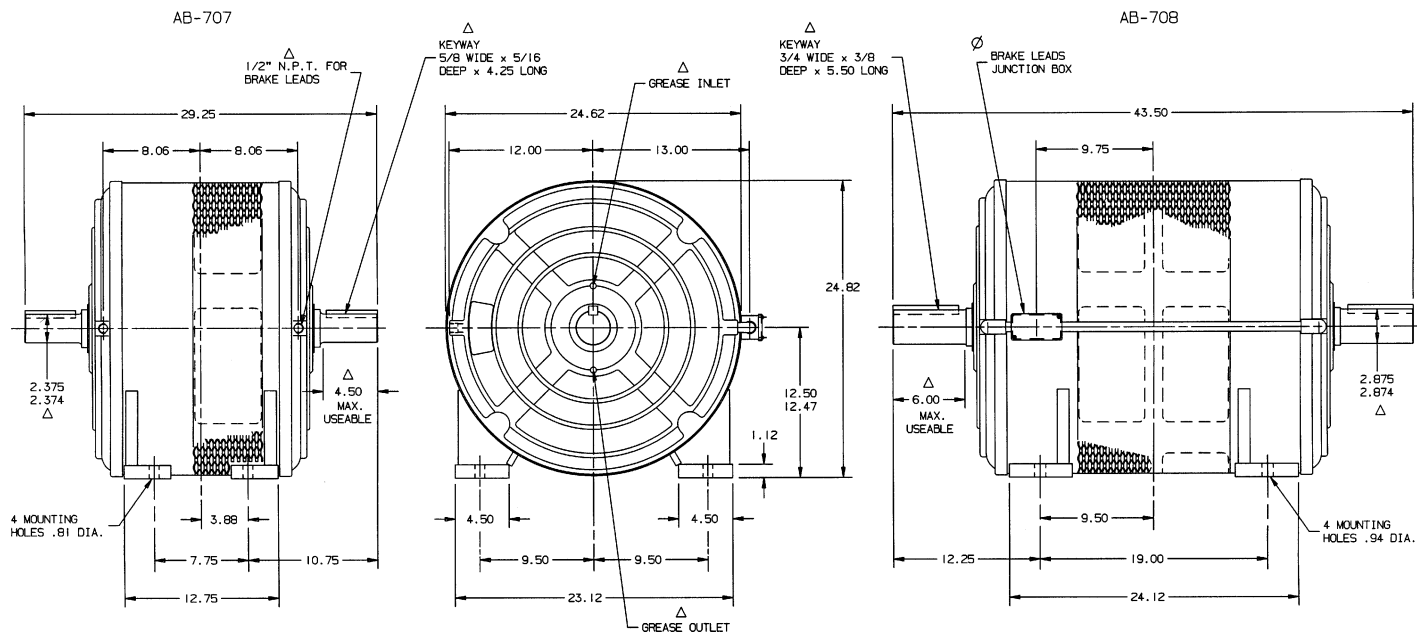
All models are furnished with 2 waterproof junction boxes. Customer must drill openings where desired.

DIMENSIONS ARE IN INCHES

BRAKES

**Air-Cooled Brakes
1.5 through 100 HP**

Outline Dimensions – AS-707 & AS-708



Models AS-707 & AS-708 Air-Cooled Brakes

All models are furnished with 2 waterproof junction boxes. Customer must drill openings where desired.

DIMENSIONS ARE IN INCHES

BRAKES

Air-Cooled Brakes 1.5 through 100 HP

Modifications, consult factory

- **Alternator, Shaft Mounted** - The alternator is sized to limit the fall speed of the load to 40% of base speed at rated torque. Consult the factory for belt driven alternator pricing.
- **Blower, External** - A blower is externally mounted to the brake which increases the thermal horsepower rating at low speeds; use 1200 RPM Dissipation rating. Specify blower-mounting location.
- **Coil, Encapsulated Brake** - Encapsulated brake coils are wound with epoxy varnish and glass tape, then totally encapsulated with epoxy for protection against corrosive chemicals, washdown and outdoor service.
- **Coil Voltage, Brake** - The standard coil voltage for air-cooled and water-cooled brakes is 45 or 90 VDC. Other voltages are available. Controller size is dependent on coil voltage and current.
- **Protection, No. 1** - Includes an encapsulated generator winding, epoxy filled coil, external epoxy paint, special shaft seals and sealed junction box.
- **Generator, G-2** – An externally mounted generator is supplied for speed control.
- **Shaft, Single Extension** - The standard air-cooled and water-cooled brake has a double shaft extension. The factory will remove the shaft on one side for locations where the extra shaft extension would be inappropriate.
- **Switch, Brake Thermal** - To safeguard the brake from excessive internal temperature a thermal switch is placed in the air stream. This switch has a NC contact. When ordered with a Mark III controller the switch will be connected in the stop circuit.