



# Air/Hydraulic Clutches & Brakes (AHA)

Static Torque Range 30 to 2,400 lbs. ft.

## ADVANTAGES

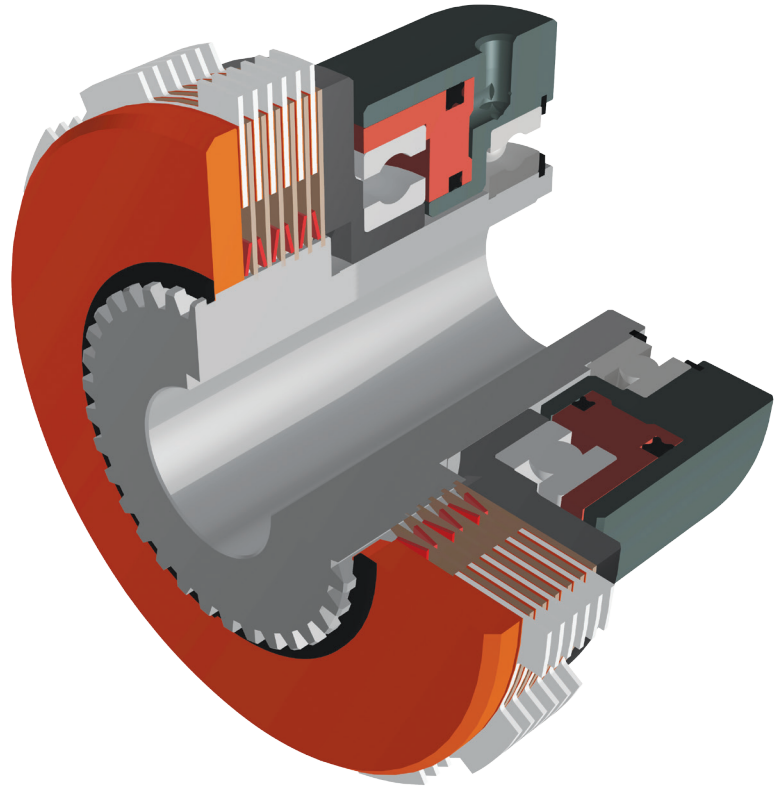
- Air/hydraulic actuation.
- Highest torque in the smallest space.
- No special tools required for repair or installation.
- Quick and easy installation.
- Long-life floating discs for minimal neutral heat and low neutral drag.

## OPERATION

- Wet or dry applications.
- Self-adjusting for wear.
- Stationary cylinder assembly.
- No levers, cams or highly-stressed parts.
- Static torque range 30 to 2,400 lbs. ft.

## CUSTOMIZATION

- Custom designs and alterations are available.



AHA model MAXITORQ® multiple disc air/hydraulic clutches and brakes provide high-performance operation, delivering more than 10 times the torque of single disc air/hydraulic units of the same package size. Featuring the patented MAXITORQ® floating disc principle, these clutches and brakes ensure minimal resultant heat when in neutral, fast disengagement and low neutral drag. Customization is available to meet specific operational needs, including wet or dry applications.

 **MAXITORQ®**

 **CARLYLE JOHNSON**

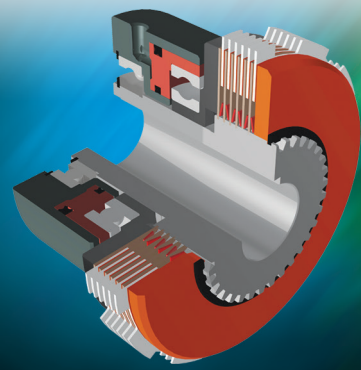
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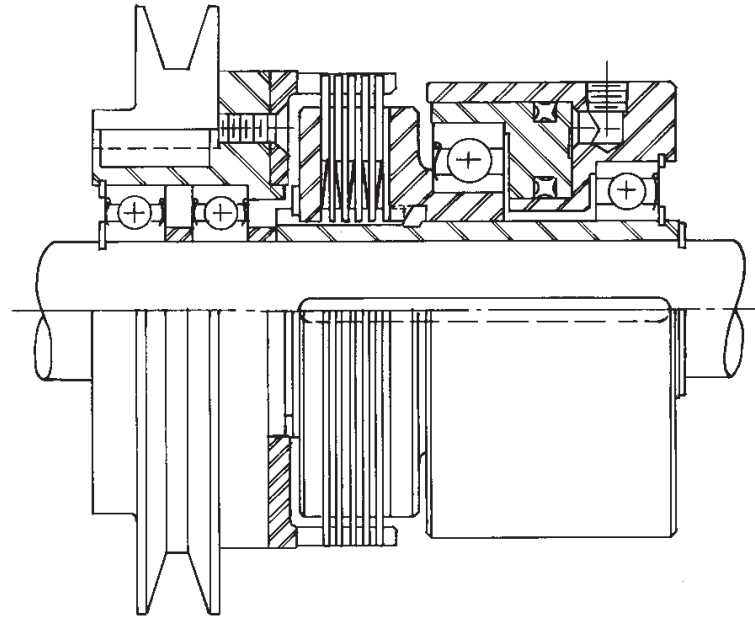
## Superior Performance, Proven Reliability

Innovative AHA model MAXITORQ® multiple disc air/hydraulic clutches and brakes provide users with reliable, effective solutions to fit specific operational needs. These clutches and brakes allow for high-performance and easy installation with many beneficial features such as:

- Stationary cylinder assembly mounted on deep groove ball bearings to accommodate thrust loads.
- Quad-ring seals for maximum performance without leakage of air/hydraulic fluid.
- Ample-sized ports and passages to provide fast piston action.
- Automatic compensation for wear, eliminating machine downtime for possible periodic clutch adjustment.
- MAXITORQ® floating disc principle incorporates separator springs between clutch/brake discs to ensure minimal resultant heat when in neutral, instant disengagement and low neutral drag.



## Typical Pulley Type Air/Hydraulic Clutch Application



## How the Air/Hydraulic Clutch or Brake Works

Air/hydraulic clutches and brakes include a non-rotating cylinder, making installation quick and easy. The clutch or brake is keyed to one shaft and can be used with either internal or external flange drive cups as the other member. Standard clutches and brakes are furnished with shielded, pre-lubricated bearings.

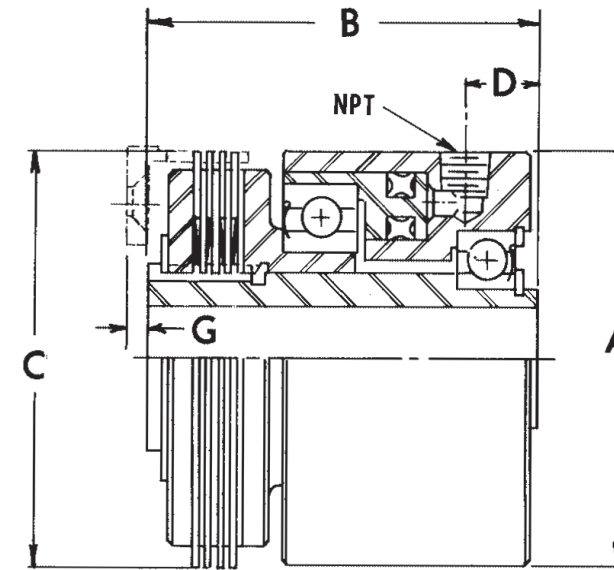
Clutches and brakes can have either electric actuation with solenoid-operated air or hydraulic valves, or manual actuation with a simple, three-way hand-operated valve. When actuated, air or hydraulic fluid enters the cylinder, moving the piston to exert force against the pressure ring. This causes the clutch disc and spring assembly to compress, resulting in full power transmission or braking action. When the actuating medium is vented, the separator springs separate the discs instantaneously, causing positive disengagement.

## Designed for Wet & Dry Operations

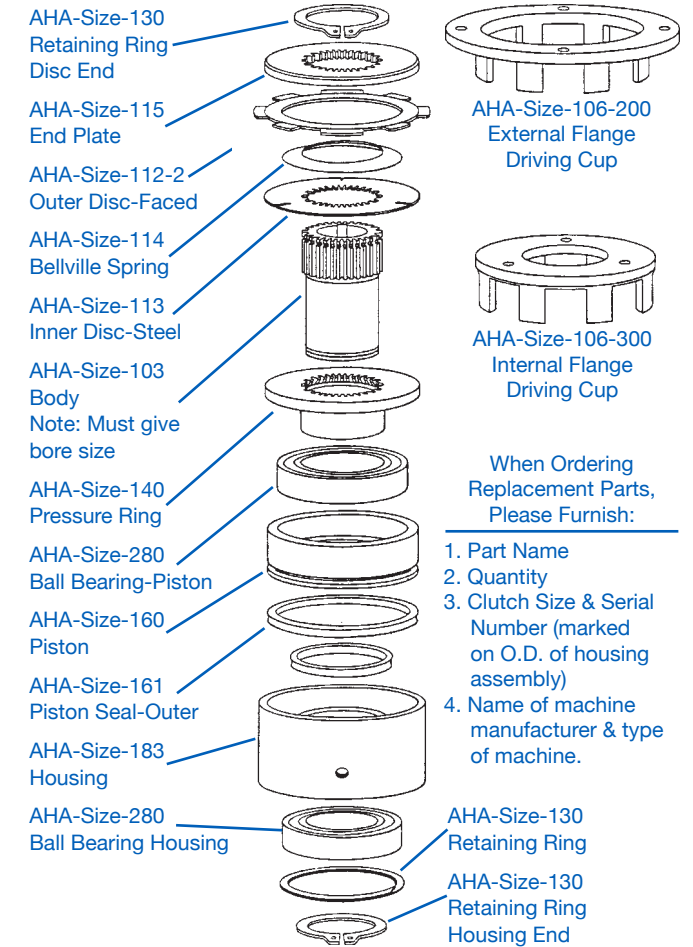
Wet and dry applications can be accommodated with these units. In wet applications (oil mist, spray, splash, bath, etc.) where the clutch or brake is enclosed, the component should be ordered without bearing shields. For dry applications, the clutch or brake is typically furnished with permanently lubricated ball bearings.

## Special Designs

While the clutches and brakes described in this catalog are standard models of Carlyle Johnson, a significant portion of our production is devoted to the design and manufacture of custom clutches and brakes. Our engineers are always available to help customers select the best solution to meet specific requirements, and provide additional recommendations beyond the clutch or brake.



## Model AHA Air/Hydraulic Clutch Replacement Parts



Important: When the Model AHA clutch or brake is operated with compressed air, it is necessary to incorporate an air filter and lubricator in the supply line near the clutch or brake to ensure clean air and sufficient lubrication to the piston seals.

NOTE: MAXITORQ® clutches and brakes as furnished can run dry or in oil. We specifically recommend Series A oils when operating wet. If extreme pressure additives that would reduce clutch torque are utilized, please contact the factory for recommendations.

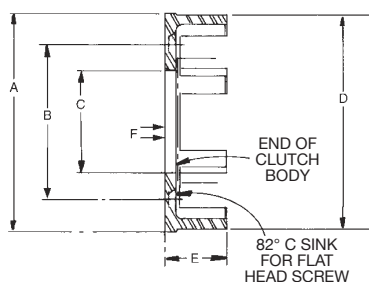
## Specifications for Model AHA Air/Hydraulic Clutches or Brakes

Clutch Number	Torque @ 60 psig		B <sup>10</sup> Bearing* Life @1800 rpm (Hours)	Torque @ 120 psig		B <sup>10</sup> Bearing* Life @1000 rpm (Hours)	A	B	Std. Bore	Keyway	C	D	G	NPT
	lbs. ft. Static	lbs. ft. Dynamic		lbs. ft. Static	lbs. ft. Dynamic									
AHA0015999	30	15	10,000	60	30	1,600	3.5000	3.34375	3/4 or 7/8	3/16 x 3/32	3.5000	.62500	.09375	.12500
AHA0025999	70	35	5,600	140	70	1,000	4.0000	3.6250	1 or 1 1/8	3/16 x 3/32	4.1875	.68750	.06250	.12500
AHA0050999	100	50	5,600	200	100	1,000	4.5000	3.9375	1 1/4 or 1 3/8	1/4 x 1/8	4.6875	.68750	.06250	.12500
AHA0100999	150	75	12,000	300	150	1,600	4.8750	4.21875	1 1/2 or 1 5/8	5/16 x 5/32	5.1875	.87500	.18750	.12500
AHA0200999	250	125	5,600	500	250	1,000	5.7500	4.6250	1 3/4 or 1 7/8	3/8 x 3/16	6.7500	.81250	.18750	.25000
AHA0400999	600	300	8,000	1,200	600	1,000	7.0000	5.53125	2 or 2 1/4	7/16 x 7/32	8.500	1.09375	.12500	.25000
AHA0800999	1,200+	600+	8,000+	2,400+	1,200+	2,000	9.5000	6.37500	2 3/4 or 3	9/16 x 7/3	10.0000	1.18750	.18750	.25000

\* B<sup>10</sup> Bearing Life means that there is a 10% chance of bearing failure at the end of the stated period of time.  
 + Torque rating for AHA 800 are for 120 psig and 240 psig.

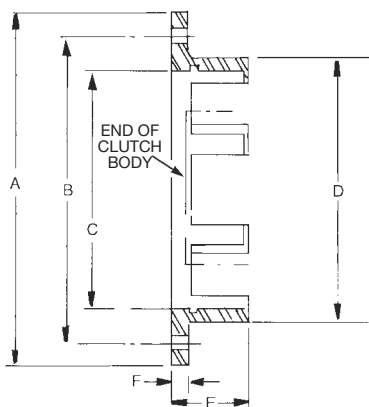
MAXITORQ® internal and external flange driving cups are designed to provide an economical means of adapting Model AHA air/hydraulic clutches and brakes to various types of driven, or driving members. Utilizing a simple screw assembly, holes are counter sunk for flat head screws and positive fastening. Cups can also be drilled for a dowel, if required. These reliable cups are hardened to increase durability and longevity. Internal and external flange cups are manufactured on a production basis, incorporating close tolerances for precise alignment of lug slots. Additionally, machinery manufacturers can save time and money by using MAXITORQ® internal and external flange driving cups rather than producing their own units.

## Internal Flange



Internal Flange												
Used with Clutch Number	Part Number	A	B	C	D	Screw Size	# of Holes	Pilot Dia. C	D	E	F	# of Slots
AHA0015999	EMA00325 106-300	3.562	2.5670	1/4	3	1.877 1.875	3.5000	1.0625	.1875	8		
		3.560	2.5570									
AHA0025999	AHA0025 106-300	4.250	3.067	1/4	3	2.377 2.375	4.1875	1.2500	.1875	8		
		4.248	3.057									
AHA0050999	EMA0425 106-300	4.750	3.630	1/4	3	2.517 2.515	4.6875	1.2500	.187	8		
		4.748	3.620									
AHA0100999	EMA0475 106-300	5.250	3.942	5/16	3	2.517 2.515	5.1875	1.3750	.2500	8		
		5.248	3.932									
AHA0200999	EMA0625 106-300	6.812	5.317	3/8	4	3.767 3.765	6.7500	1.6562	.3125	8		
		6.810	5.307									
AHA0400999	AHA0400 106-300	8.562	6.255	1/2	4	4.877 4.875	8.5000	1.9375	.3125	12		
		8.560	6.245									
AHA0800999	AHA0800 106-300	10.062	8.067	3/8	6	5.517 5.515	10.0000	2.0625	.3125	12		
		10.060	8.057									

## External Flange



External Flange												
Used with Clutch Number	Part Number	A	B	C	D	Screw Size	# of Holes	Pilot Dia. C	D	E	F	# of Slots
AHA0015999	EMA00325 106-200	4.625	4.130	1/4	3	3.300 3.298	3.5000	1.0625	.2500	8		
		4.623	4.120									
AHA0025999	AHA0025 106-200	5.625	4.880	1/4	3	3.814 3.812	4.1875	1.1875	.2500	8		
		5.623	4.870									
AHA0050999	EMA0425 106-200	6.125	5.380	1/4	4	4.314 4.312	4.6875	1.2500	.2500	8		
		6.123	5.370									
AHA0100999	EMA0475 106-200	6.875	6.005	5/16	4	4.814 4.812	5.1875	1.3750	.2500	8		
		6.873	5.995									
AHA0200999	EMA0625 106-200	8.500	7.692	3/8	4	6.377 6.375	6.7500	1.6562	.3125	8		
		8.498	7.682									
AHA0400999	AHA0400 106-200	10.625	9.630	1/2	4	8.095 8.093	8.5000	1.9375	.3125	12		
		10.623	9.620									
AHA0800999	AHA0800 106-200	12.250	11.130	3/8	6	9.533 9.531	10.0000	2.0625	.3125	12		
		12.248	11.120									

