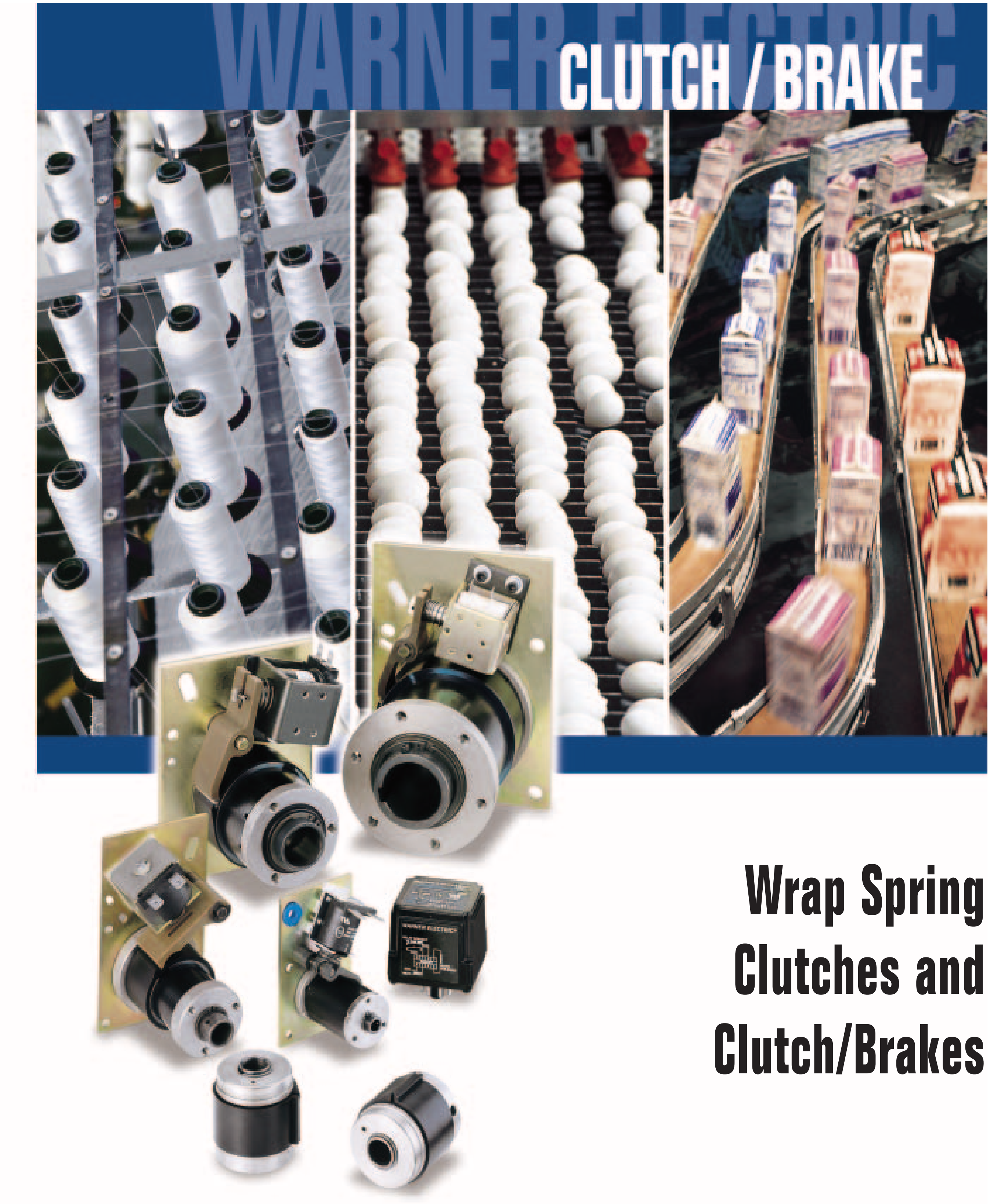

Wrap Spring Clutches and Clutch/Brakes

Warner Electric

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Warner Electric offers a complete line of standard wrap spring clutches and clutch/brakes, available for immediate delivery through our nationwide network of power transmission distributors. As the industry leader in clutch/brake technology you can count on Warner Electric for complete application assistance and after sale service.

Check Out warnerelectric.com

warnerelectric.com now features our new interactive eCATALOG making it faster and easier to find and spec the motion control products you need.

Within the Warner Electric Interactive eCATALOG, you can start your search for basic components, such as clutches or brakes, and then quickly refine your search from hundreds of possibilities to one that meets your specific power transmission requirements for NEMA, input/output configurations and other factors. You can also download specifications and PDF pages or submit an RFQ for any of your selections.

***Find it fast at* www.warnerelectric.com**

Warner Electric offers a complete line of wrap spring clutches and clutch/brakes, available for immediate delivery through our nationwide network of power transmission distributors. As the industry leader in clutch/brake technology, you can count on Warner Electric for complete application assistance and after-sale service.

CB Series Clutch/Brakes

Electrically actuated clutch/brake package. Designed for applications requiring a continuous rotational input that is converted into starting and stopping a load. Operate from either an AC or DC power source.

Super CB Series Clutch/Brakes

High performance clutch/brake packages feature extraordinary long life. Ideal for demanding applications involving continuous high cycle rates under heavy load conditions.

WSC Series Clutches

Basic design wrap spring clutches are mechanically actuated and require no electrical power. Available in three configurations for overrunning, start-stop and single revolution applications. Very compact. They deliver more torque than a friction clutch of the same size.

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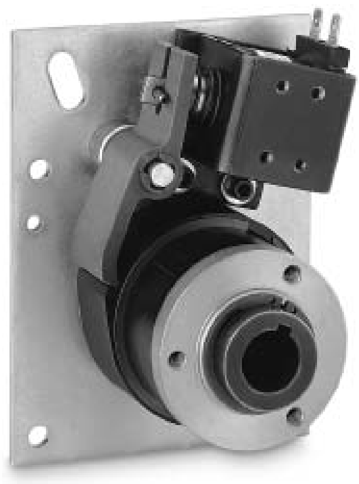
Wrap Springs Product Line

CB Series



Clutch/Brake Package

Each CB Series unit is a completely self-contained, packaged clutch/brake assembly designed to start and stop a load rapidly and accurately without any cumulative error. In fact, at speeds up to 1800 RPM, loads are started and stopped within ±1/2° per revolution. CB Series units are solenoid actuated with standard models available in 12, 24, or 90 VDC as well as 115 VAC configurations.

Accurate

Start and stop positioning can be maintained within ±1/2° at speeds up to 1800 RPM. The stop point is adjustable by using the adjustable control collar.

Self-Contained

Each CB Series unit is completely self-contained. Assembly and testing before shipment ensure reliable and trouble-free operation.

Interchangeability

The CB Series is completely interchangeable with other comparable clutch/brake packages.

Features

- ☐ CW or CCW rotation
- ☐ Anti-back: anti-overrun feature
- ☐ 12, 24 or 90 VDC, 115 VAC operation
- ☐ 1, 2 or 4 stop collars standard; special stop collars also available (up to 24 stops)
- ☐ Adjustable stop collar
- ☐ Six standard sizes
- ☐ Torque ratings from 25 lb.in. to 2500 lb.in.

SCB Series

Long Life Clutch/Brake

The Super CB Series is a high performance version of the standard CB Series, providing up to five times the life. The SCB Series is recommended for heavy-duty applications requiring maximum torque, high cycle rates and minimum maintenance. Like the CB Series, each Super CB Series unit is a complete, factory-assembled package, ready for installation.

Features

- ☐ Heavy duty design
- ☐ High cycle rate performance
- ☐ Long life - up to five times that of a standard CB model
- ☐ Three standard models
- ☐ Torque ratings up to 2500 lb.in.
- ☐ CW or CCW rotation
- ☐ Anti-back: anti-overrun feature
- ☐ 12, 24, 90 VDC or 115 VAC operation
- ☐ 1, 2 or 4 stop collars standard; special stop collars also available (up to 24 stops)
- ☐ Adjustable stop collars

WSC Series

Wrap Spring Clutches

WSC Series clutches are simple, mechanically actuated devices providing high torque in a compact design. Specific models are available for use as an overrunning/one-way clutch (Model O), as a start/coast-to-stop clutch (Model SS), or as a single revolution clutch (Model S).

Overrunning/One-Way (Model O)

This clutch continually drives the load. The load is allowed to overrun the input, should its speed exceed input speed. In the reverse direction the unit acts as a one-way clutch, preventing the load from backing up.

Start/Coast-To-Stop (Model SS)

The start/stop clutch is engaged until the collar that contains the spring tang is disengaged. Once its is stopped, the load is disengaged and coasts to a stop.

Start/Stop – Single Revolution (Model S)

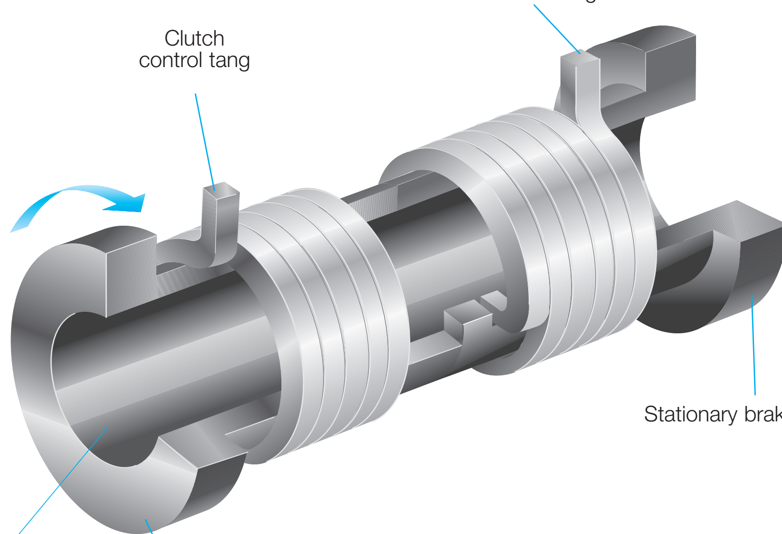
Attaching one end of the spring to the output hub results in a single revolution clutch. The load is stopped through the spring to the collar. Precise non-cumulative error single revolution cycling is achieved. Braking torque equals 10% of the maximum torque rating.

Features

- ☐ Five standard sizes
- ☐ Torque ratings from 25 lb.in. to 2500 lb.in.
- ☐ Hub or shaft input
- ☐ Multiple stop collars
- ☐ Over-travel stop
- ☐ Anti-overrun
- ☐ Adjustable stop feature

Principle of Operation

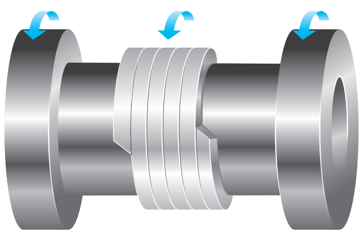
The three basic components of the wrap spring clutch are the input hub, output hub, and spring. The inside diameter of the spring is slightly smaller than the outside diameter of the two hubs. Rotation at the input hub in the direction of the arrow engages the spring and positively locks the two hubs together. Adding a control tang enables the spring to be disengaged, allowing the input hub to overrun.



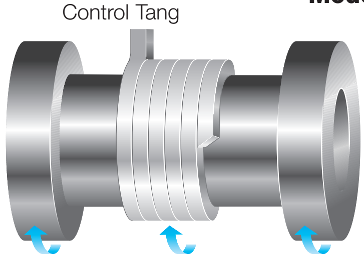
Combination Clutch/Brake

The control tangs are used to hold open the clutch or brake spring, which are wrapped in opposite directions. When the clutch and brake control tangs rotate with the input hub, the input hub and output shaft are engaged by the clutch spring. When the stop collar locks the control tang of the brake spring, it wraps down engaging the output shaft to the brake hub. The clutch spring unwraps at the same time, allowing the input hub to freely rotate.

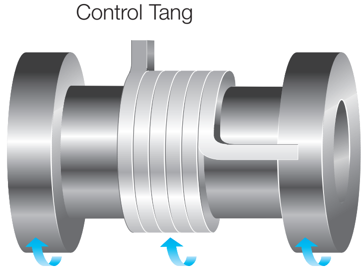
Design Configurations



Model O

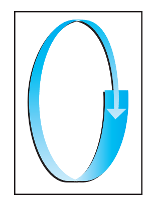


Model SS



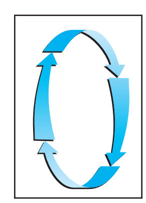
Model S

Overrunning (One Way Clutch)



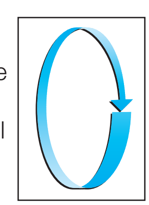
When the input hub is rotated in the direction shown, the spring wraps down and engages the input to the output hub. When the input hub is stopped or reversed, the spring unwraps, allowing the output hub to overrun. These clutches can also be used for backstopping and indexing. In the backstopping mode, either the input or output hub is attached to a fixed member and the other hub on a rotating part. Rotation is permitted in one direction, but locked in reverse rotation. Indexing provides an accurate and smooth intermittent rotary output from reciprocating input in variable angular increments.

Start/Coast-To-Stop Clutch (Random Positioning)



In this mode, the control tang rotates with the input hub, thus the clutch is engaged. When the stop collar locks the control tang, the spring unwraps, allowing the output hub to coast while the input hub continues to run.

Start/Stop – Single Revolution Clutch



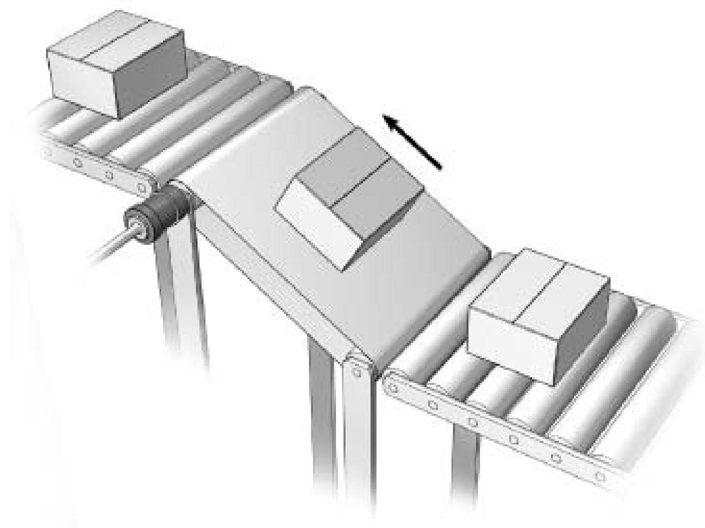
In this mode another control tang is added to the spring and fixed to the output hub. When the stop collar engages the control tang, the output hub will not overrun. Remember only a maximum of 10% of the load will be stopped with the single revolution clutch.

Application Examples

The features of wrap spring clutches and brakes; accuracy, repeatability, high torque-to-size ratio, low power consumption and long life make them an ideal solution for a wide range of motion control applications. Basic functions include overrunning, single revolution, random positioning start-stop, high cycle rate rapid start-stops and accurate, repeatable positioning.

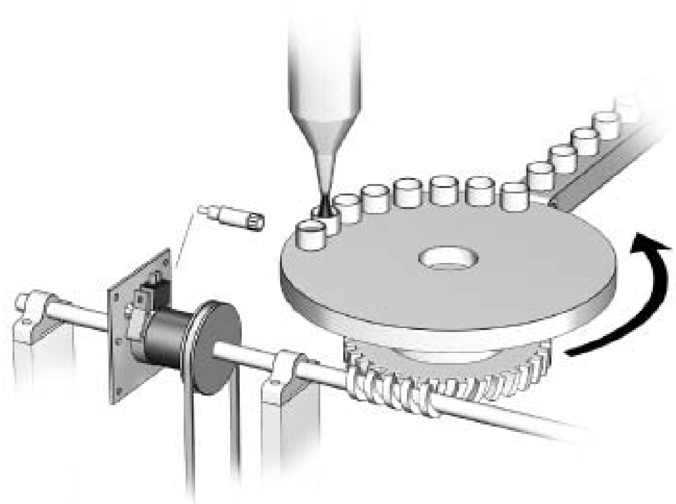
Typical Applications

- Conveyors
- Rotary indexing tables
- Packaging equipment
- Bagging machinery
- Collators
- Cut-off machines
- Vending machines
- Copiers
- Food processing equipment
- Paper feeds
- Folders
- Material handling equipment
- Riveters, staplers and stitching machines
- Sorters
- Punch presses
- Textile machines
- Film and wire processing



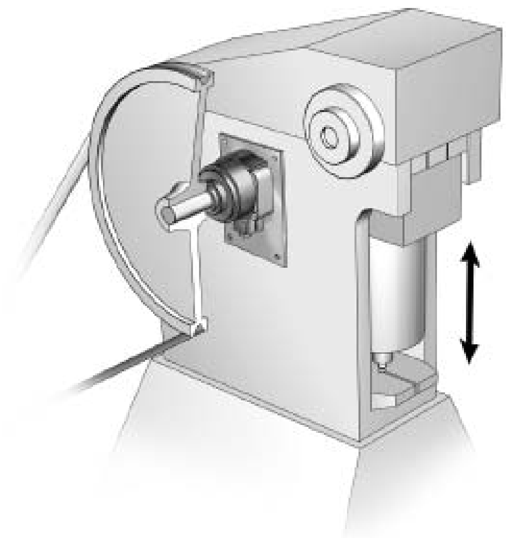
Incline Conveyor

The **WSC Model O** mechanical wrap spring clutch provides maintenance free anti-backup protection for this incline conveyor. While the conveyor is running, the wrap spring is in overrunning mode, allowing the clutch's output to freewheel. When the conveyor drive power is removed, either intentionally or unintentionally, the spring holds the hub stationary and will prevent the conveyor and its load from back-driving.



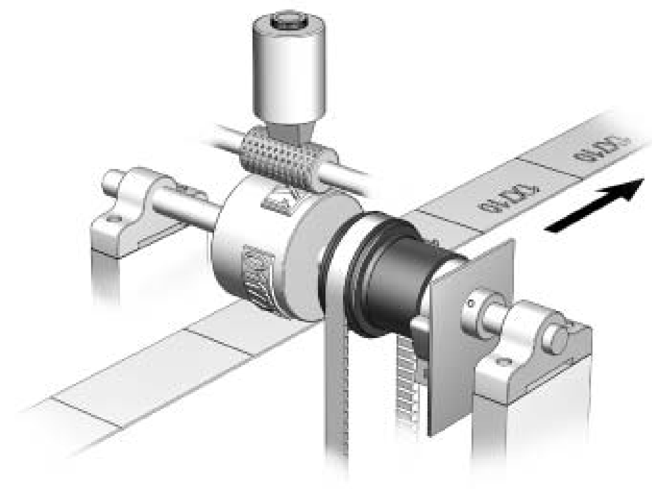
Indexing Rotary Table

Each time the power supply provides a pulse to the solenoid of the Standard CB wrap spring clutch/brake, the table indexes one position for filling, labeling, sorting, staging or inspecting products. **CB, Super CB or WSC Model S** (with customer supplied actuator) units may each be used to perform the indexing function. Please note that while the graphic shows open gearing, a standard enclosed gearbox will work just as effectively.



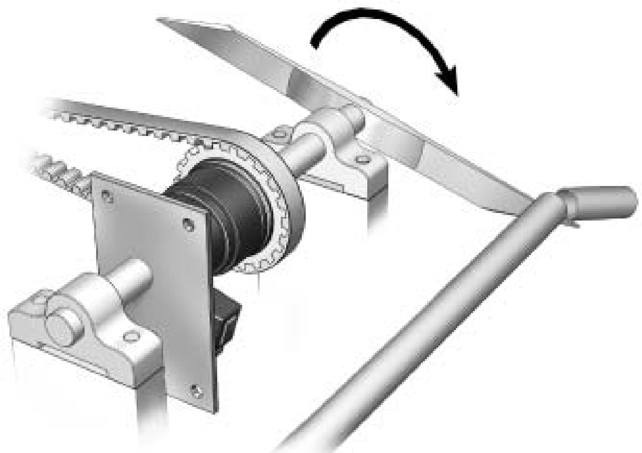
Industrial Stitchers and Staplers

The motor drives a large flywheel and a cam connected to the stitcher head. The **CB** or **Super CB** wrap spring clutch/brake provides one complete cycle, always stopping at the same precise position in time for the next cycle. Warner Electric's CB and Super CB units never require any adjustment or lubrication, and provide non-cumulative error for cycle-to-cycle accuracy and consistency.



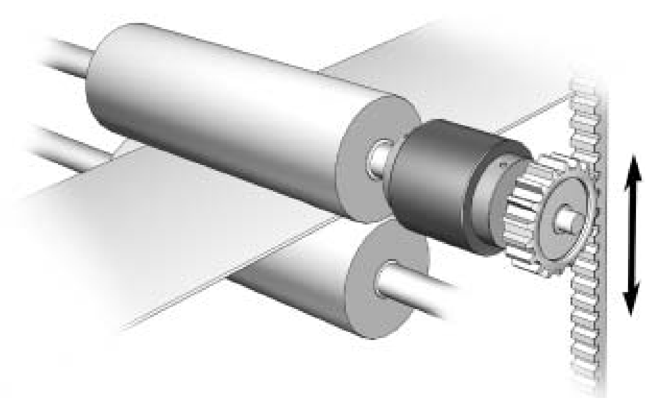
Print Head

In this printing application, a photoelectric sensor detects the registration mark on the web and signals the **CB** or **Super CB** clutch/brake to cycle. Each cycle drives the print wheel in registration with the continuously moving web material. Warner Electric wrap spring clutch/brakes provide start and stop positioning within a ± 1/2° per revolution (non-cumulative), making them an excellent solution for applications requiring highly accurate, consistent performance.



Cut-Off Knife

As tubing material is fed, a sensor determines when the appropriate length has been reached, and signals the lutch/brake to cycle, driving the knife to cut the tubing to the correct length. This application shows a standard option two-stop collar, which indexes 180° per sensor input, making two cuts per one complete 360° revolution. The **CB** or **Super CB** clutch/brake provides error free indexing, making the reaction time for the knife consistent from cycle-to-cycle.



Rack and Pinion Indexing

The unidirectional **WSC Model O** operates as an indexing drive for this application. As the rack moves upward, the wrap spring drives, providing torque to the in-feed rolls. When the rack moves downward, the wrap spring clutch freewheels, transmitting no torque to the rolls. Since the cam, pinion gear and rolls are all constant diameters, coupled with the accuracy of the WSC, the amount fed each cycle remains constant and consistent.

For Product Selection Follow 3 Easy Steps

Wrap spring clutches and brakes are pre-packaged, pre-assembled units which are as easy to select as they are to install. The simple three step selection process includes:

Step 1 Determine the clutch or brake function

Step 2 Determine size

Step 3 Verify design considerations

This selection process is based on the assumption that the diameter of the shaft at the clutch or clutch/brake location has been designed through good machine design practice. For most applications, this process will determine the correct size product. When the performance requirements of a given application are marginally within the capabilities of a specific product, consider using the next larger size. In instances where required load/speed performance data is known and unit size is uncertain, use the technical selection process starting on page 28 which will help you review the necessary aspects of your application.

Step 1

Determine clutch or brake function

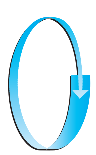
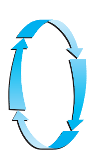
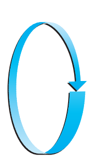
Wrap spring clutches and brakes can perform three control functions—overrunning, start/coast-to-stop, and single revolution. Determine the function which will provide the best control for your application. Using the chart below, select the series which best fits your application requirements.

Step 2

Determine size

To select the correct size unit, determine the maximum RPM at which the clutch or brake will be operated and the shaft diameter on which the wrap spring unit will be mounted. A wrap spring clutch engages almost instantly, and, since spring wrap increases with load, the unit must be sized carefully to insure that it is correct for the application. If there is any uncertainty regarding the correct unit size, we recommend using the technical selection process starting on page 32. To select the correct wrap spring unit, locate the corresponding speed and shaft diameter points on the appropriate chart on page 7. For applications requiring speed or diameter values higher than those illustrated, please contact your local Warner Electric Distributor, your Market Representative, or Warner Electric Technical Support at (800) 825-9050.

Selection by Function

Function	Performance	Wrap Spring Product	Max. Torque Starting lb. in. (N-m)	Max. Torque Stopping lb. in. (N-m)	Max. RPM	Actuation Method
Overrunning  Engaged in one direction only	An overrunning clutch will transmit torque in one direction only when the input hub is stopped or reversed. Consequently, the load is disengaged and free to rotate or overrun.	WSC Series Model O	2,500 (282.5)	N/A	1,800	Reverse input rotation
Start/Coast-To-Stop  Random Positioning	A start/coast-to-stop clutch will engage and disengage a load either by mechanical or electrical actuation. Start/coast-to-stop clutches provide a random stop position for the load.	WSC Series Model SS	2,500 (282.5)	0	1,800	Mechanical
Single Revolution  Accurate positioning for single or multiple stops	A single revolution clutch or clutch/brake will accurately position a load with no cumulative error for each single revolution cycle. Multiple stop collars with up to 24 stops (per revolution) provide fractional revolution capability.	WSC Series Model S	2,500 (282.5)	250 (282.5)	1,800	Mechanical
		Super CB	2,500 (282.5)	2,500 (282.5)	750	AC or DC Solenoid
		Standard CB	2,500 (282.5)	2,500 (282.5)	1,800	AC or DC Solenoid

Step 3

Verify design function considerations

Once the appropriate series and model size have been determined, review the design considerations. A complete checklist of these and other options available are detailed in the How to Order section for each series.

Design Considerations

All Models

- ☐ CW or CCW rotation
- ☐ Single or multiple stop collar
- ☐ Bore size

Super CB and CB Series

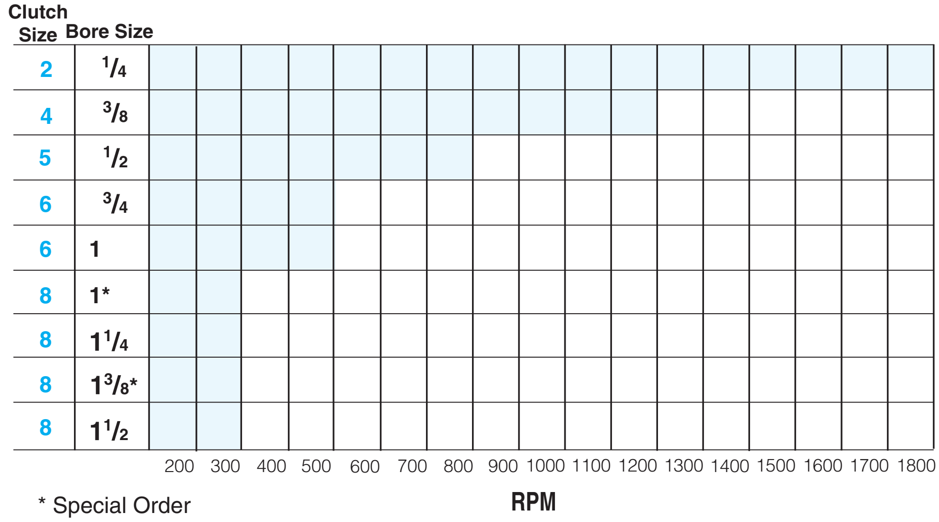
- ☐ AC or DC solenoid
- ☐ CB-5, CB-6 and CB-8 sizes available in the long life, Super CB Series. See pages 19–23 for specific details.

WSC Series

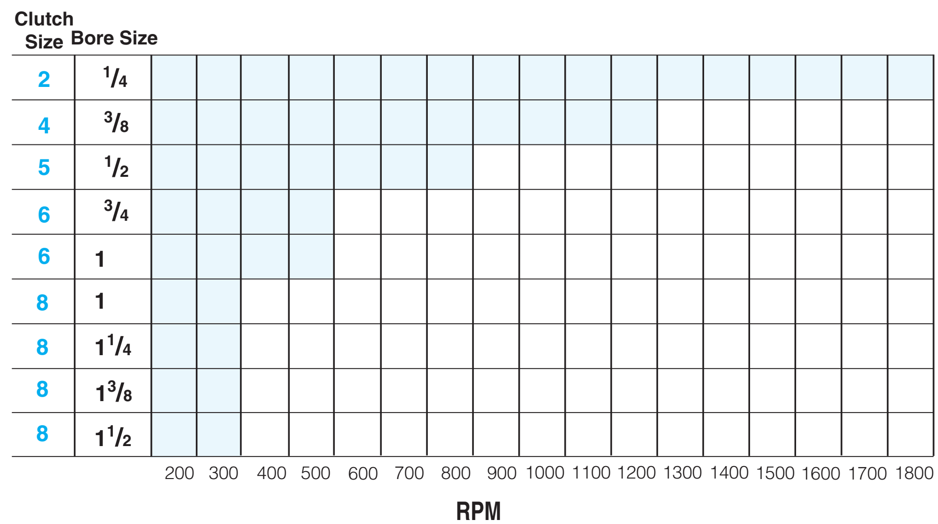
- ☐ Hub input/shaft output or shaft input/hub output
- ☐ Overrunning Model O, start/coast-to-stop Model SS or single revolution Model S

Selection Charts – RPM vs. Shaft Diameter

Super CB and Standard CB Series



WSC Series

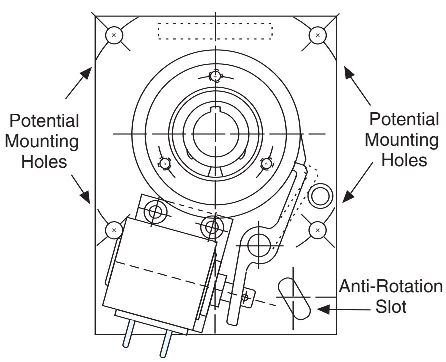


CB Mounting Requirements

While Warner Electric wrap spring clutches are self-contained, packaged products, which are easy to mount, a few simple precautions should be taken to ensure maximum life.

All Warner Electric wrap spring clutch products are designed to be installed in parallel shaft applications where they are fully supported by the shaft on which they are mounted.

Each clutch/brake backing plate assembly has three or four mounting holes, plus an anti-rotation slot, and is designed to serve as a torque arm rather than as a rigid mounting plate. The plate should be restrained from rotating by a pin or shoulder bolt, <u>while allowing for the plate to float axially</u>. The anti-rotation device must be capable of withstanding the braking torque required by the load.



Clockwise Rotation Shown

Important: Do not rigidly mount unit. Plate must be allowed to "float" axially.

On CB type units, the input rotation is always connected to the input hub, and the output is always through the shaft through the hollow bore of the clutch/brake.

Connecting the unit to the parallel shaft may be accomplished by pinning (for sizes 2, 4, and 5) or by key and set screw (for sizes 6 and 8).

When connecting the parallel shaft to the CB by using a belt, chain or gear drive, the input hub's radial bearing load capacity must not be exceeded. (See chart in next column). It may be necessary to counter bore or bearing mount the input pulley sprocket or gear.

Maximum Radial Bearing Load at Maximum Speed

CB-2 = 7.5 lbs.
CB-4 = 14 lbs.
CB-5/Super CB-5 = 32 lbs.
CB-6/Super CB-6 = 63 lbs.
CB-8/Super CB-8 = 300 lbs.

CB and Super CB style clutch/brakes are designed for horizontal shaft mounting. While it is possible to mount units vertically, vertically mounted units will see lower life than those mounted horizontally due to the wear between hubs resulting from gravity.

Horizontal Mounting

Figure 1 illustrates an ideal CB mounting. The unit is attached to the output shaft with both a key and set screws. The plate is restrained from rotating, but not from axial movement, reducing the side load on the CB's internal plate bearing.

In cases where easy access to the input is desirable, the clutch/brake can be mounted on a stub shaft. However, the unit must still be fully supported, while overhung loads on the input member must be avoided to maintain the life of the radial bearing.

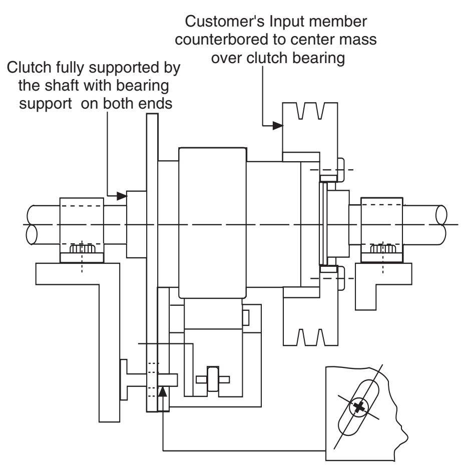


Figure 1

Figures 2 and 3 illustrate alternate mounting configurations for achieving proper support. Inputs are usually face-mounted to the input hub of the CB unit as shown in Figure 1. This type of mounting is facilitated by the drilled and tapped holes provided in the free hub flange. The configuration shown in Figure 2 is a possibility, if the radial load on the input hub of the CB is small compared to the specified load.

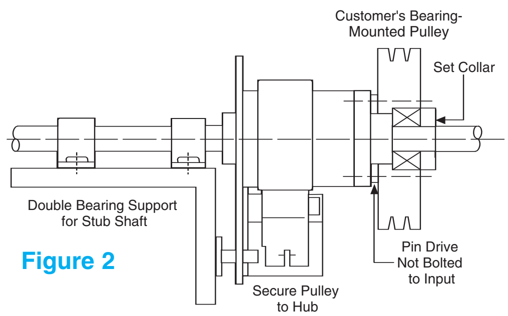


Figure 2

If the application contains a substantial radial bearing load, arrange the pulley over the centerline of the clutch free hub as illustrated in Figure 3. Place one support bearing as close to the pulley as possible, using a torque arm for anti-rotation.

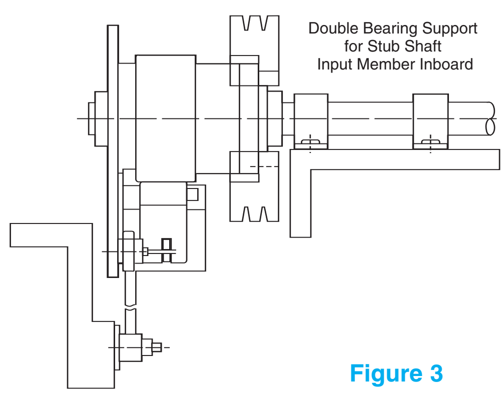


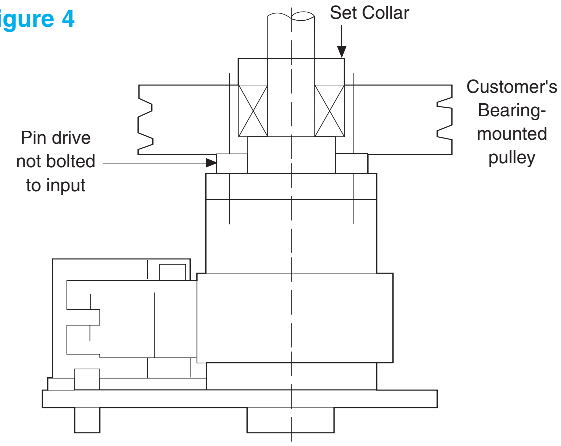
Figure 3

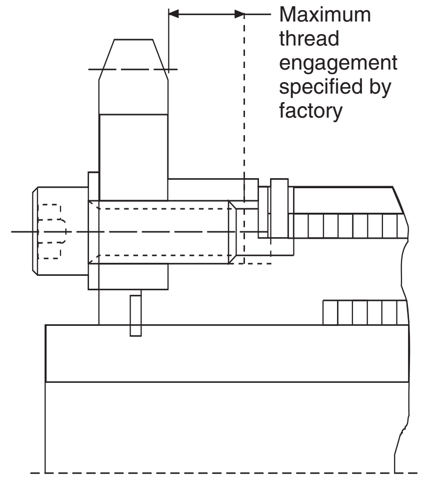
The smaller CB units (sizes 2, 4 and 5) have pilot holes in the output shaft, which guide drilling through the machine shaft for attaching the unit with a pin.

Vertical Mounting

When it is necessary to mount a unit vertically, mount it so the input hub is oriented in the upward position as illustrated in Figure 4.

Figure 4



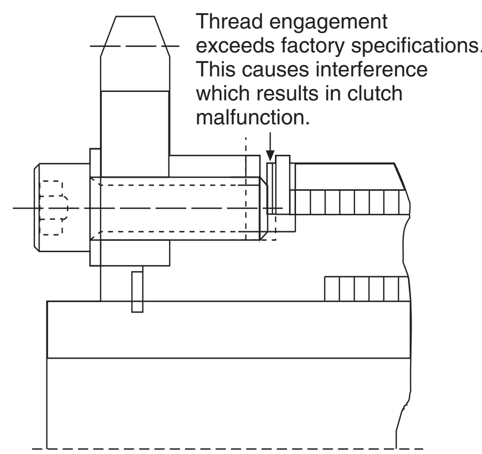


Correct Mounting

Thread Engagement Requirements

Just a reminder . . . While mounting a sprocket or pulley to the input hub of your CB-2, CB-4, CB-5, CB-6 or CB-8 the screws/bolts used must not protrude through the flange or hub. This will interfere or jam the control collar assembly, therefore causing the clutch to malfunction by failing to "drive" or causing the clutch to "slip." Please refer to the following chart for maximum thread engagement:

CB-2	= .150 in.
CB-4	= .280 in.
CB-5/Super CB-5	= .350 in.
CB-6/Super CB-6	= .312 in.
CB-8/Super CB-8	= .360 in.

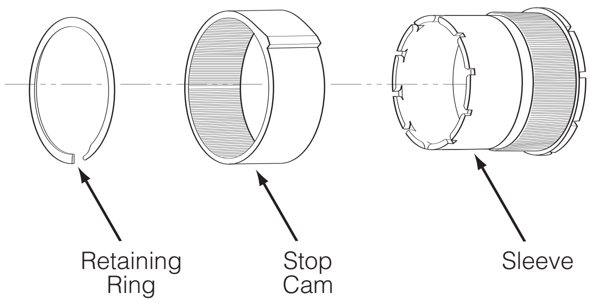


Incorrect Mounting

For further information and/or assistance, please call Warner Electric Technical Support at 800-825-9050.

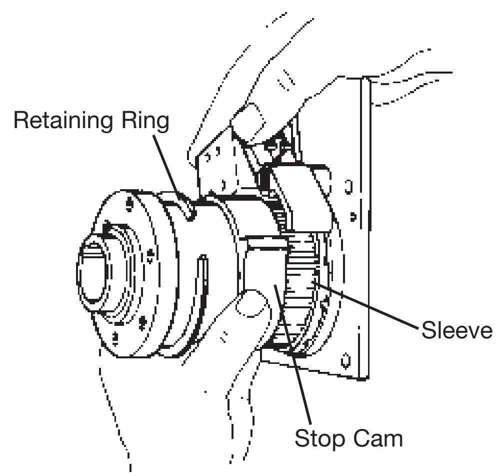
CB Stop Collar Adjustment

Each CB and Super CB Series unit has an incrementally adjustable collar, which allows for changes to the output orientation.



To adjust the stop collar output orientation:

- Wrap the brake spring down completely by rotating the output shaft in the driving direction until it cannot travel any further;
- Remove the retaining ring from its groove and slide it forward on the sleeve; then,
- Hold the actuator clear, while sliding the stop cam off the sleeve. Rotate the cam to the desired stop position, and slide it back onto the sleeve; and,
- Slide the retaining ring back into position.



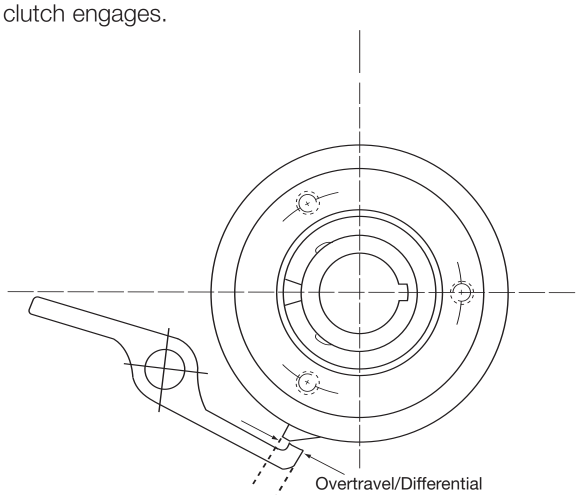
Adjustment Increments With Standard Stop Collars

CB-2	Infinitely Adjustable
CB-4	2.4º Adjustable
CB-5/Super CB-5	1.8º Adjustable
CB-6/Super CB-6	1.8º Adjustable
CB-8/Super CB-8	1.6º Adjustable

CB Spring Differential Setting

All CB and Super CB Series clutch/brakes are factory-set to the proper spring differential overtravel. If a spring must be replaced, prior to disassembly, make sure the two spring tang slots are marked to help ensure proper reassembly. (There should be punch marks from the factory on either side of the spring tang slots marking those used for the correct differential setting.)
If the slots are unmarked and the unit has been disassembled, use the following procedure to reset the spring differential.

1. Remove the retaining ring from the input hub.
2. Rotate the clutch so the brake spring is fully wrapped down by rotating the output shaft in the driving direction until it cannot travel any farther.
3. With the brake fully engaged (per step 2), pull the input hub assembly out, and push the clutch spring out of its slot, allowing it to jump to wherever it comes to rest.
4. Unwrap the clutch spring and push it backwards into the nearest slot.
5. Push the input hub back into place, release the actuator, and rotate the clutch until the brake spring fully wraps down again.
6. With the brake fully engaged (wrapped down per step 2), hold the shaft with one hand and release the actuator. The stop collar will rotate forward as the brake is released and the clutch engages.



7. To calculate the overtravel, use a scale to measure the distance between the tip of the actuator, and the tip of the stop on the cam

The Amount of Acceptable Overtravel Varies with the Size of the Unit

CB-2	.09 to .19"
CB-4	.09 to .19"
CB-5/Super CB-5	.09 to .19"
CB-6/Super CB-6	.22 to .38"
CB-8/Super CB-8	.39 to .60"

8. If the overtravel measurement is within these specified limits, reinstall the retaining ring and the unit's overtravel is reset.

9 A. If the overtravel *exceeds* the specified limit, move the brake spring backwards one slot (against the direction of rotation) and repeat steps two through seven.

B. If the overtravel *is less than* the specified limit, move the brake spring forward one slot (in the direction of rotation,) and repeat steps two through seven.

If Spring Replacement Is Not Required

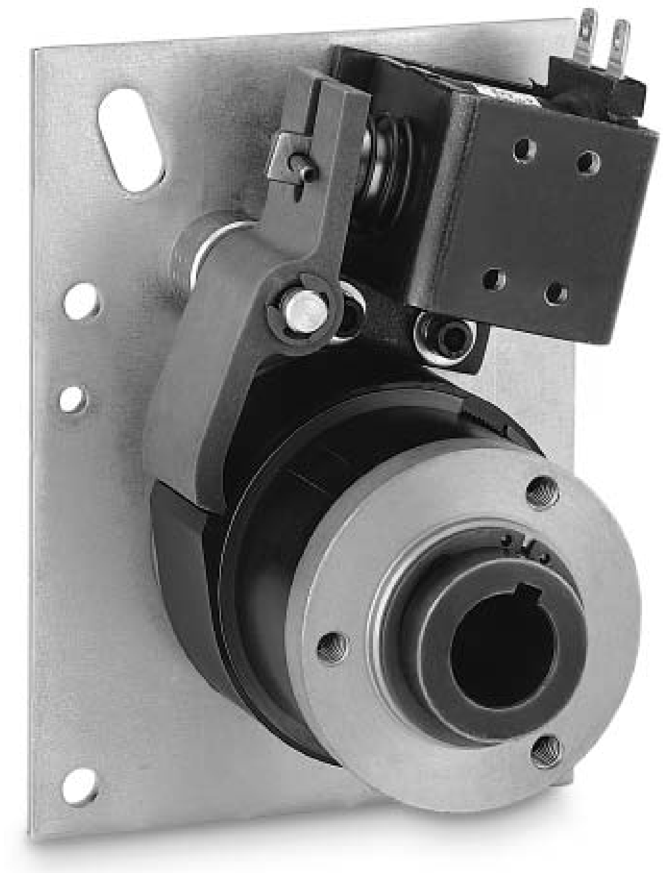
If the unit is disassembled and the drive and/or brake springs do not need to be replaced, proceed as follows:

- Reposition the drive and brake springs into their original positions onto the output shaft assembly.
- Reassemble the clutch, and position the spring tangs of the drive and brake springs in the factory marked locations on the control collar assembly (on the control collar, the designated tang slots are indicated with punch marks on either side of each slot).
- After the unit is completely reassembled, the differential setting should match that of the original factory setting.

CB Series Clutch/Brakes

Combination Clutch/Brake Packages

CB Series clutch/brake combinations are designed for applications requiring a continuous rotational input being converted into starting and stopping a load. To start motion, the solenoid is pulsed, moving the actuator arm away from the control collar. This allows the clutch spring to wrap (wind) down onto the output assembly while the brake spring is unwinding, allowing the output to drive. Motion is stopped when the actuator returns to its rest position and the control collar rotates, stopping against the actuator. This forces the clutch spring to unwind releasing the input from the output and wraps the brake spring down, stopping the output. Anti-back and anti-overrun springs maintain position accuracy by eliminating any backward movement or bounce when stopped. The actual stopping position can be adjusted after installation by moving the splined cam of the control collar assembly.



The input hub is drilled and tapped to allow for mounting of sprockets, gears, sheaves, etc. The output is a hollow quill that mounts onto the customer's driven shaft. The backing plate is not mounting plate. It must be held in place by a loose fit pin to eliminate any side or radial loads from preloading the unit's bearings.

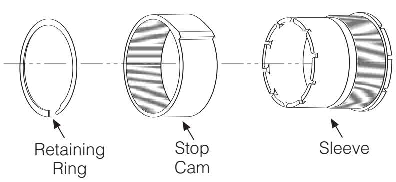
Features

- Stop Position Accuracy ±1/2°
- Adjustable Output Stop Positions
- Standard Features
  - – CW or CCW Rotation
  - – Hub Input – Shaft Output
  - – Anti-Overrun Output does not overrun Input
  - – Anti-Back Output does not Backup
- 1, 2 and 4 stop collars for 360°, 180°, and 90° output increments standard
  - – Special multi-stop collars also available (up to 24 stops)
- 115 VAC and 24 VDC Solenoids Standard
  - – Other Voltages Available
- Dimensionally Interchangeable With Competitive Units
- 5 Standard Models
  - CB-2
  - CB-4
  - CB-5
  - CB-6
  - CB-8

Specifications	CB-2	CB-4	CB-5	CB-6	CB-8
Static Torque	25 lb.in. (2.825 N-m)	120 lb.in. (13.56 N-m)	250 lb.in. (28.25 N-m)	500 lb.in. (56.5 N-m)	2,500 lb.in. (282.5 N-m)
Maximum anti-overrun holding capability	10 lb.in. (1.13 N-m)	25 lb.in. (2.825 N-m)	45 lb.in. (5.085 N-m)	300 lb.in. (33.9 N-m)	600 lb.in. (67.8 N-m)
Maximum anti-back holding capability	10 lb.in. (2.034 N-m)	80 lb.in. (9.04 N-m)	160 lb.in. (18.08 N-m)	300 lb.in. (33.9 N-m)	600 lb.in. (67.8 N-m)
Inertia, rotating parts	.034 lb.in.^{2}	.064 lb.in.^{2}	.195 lb.in.^{2}	1.718 lb.in.^{2}	12.84 lb.in.^{2}
Maximum radial bearing load at maximum speed	7.5 lbs.	14 lbs.	32 lbs.	63 lbs.	300 lbs.
Maximum operating speed	1,800 RPM	1,200 RPM	750 RPM	500 RPM	300 RPM
Response time, voltage on at full speed	20 MS	24 MS	27 MS	45 MS	50 MS
Weight	1 lb.	2 lbs.	3 lbs.	7 lbs.	15 lbs.

See page 32 for Minimum Inertia Requirements.
See page 8 for Mounting Examples.

Control Collars



These clutch/brakes (except CB-2) offer unique splined stop collars which can be adjusted radially in fine increments. This feature allows the user to reposition the output to comply with specified shaft and keyway placements. Standard stop collar positioning increments are shown below for all models:

CB-2	Infinitely Adjustable
CB-4	2.4° Adjustable
CB-5	1.8° Adjustable
CB-6	1.8° Adjustable
CB-8	1.6° Adjustable

Optional Multiple Stop Collars

A one, two or four stop collar is standard on CB Series clutch/brakes.
A variety of stop collar configurations, up to 24 stops maximum, are available. Consult Warner Electric Technical Support at 800-825-9050 for complete information.

Basic Selection

See pages 6–7 for basic product selection guidelines.

For complete Application Engineering information see pages 32–34.

How to Order

Order by part number (see chart on dimensions page) or specify as follows.

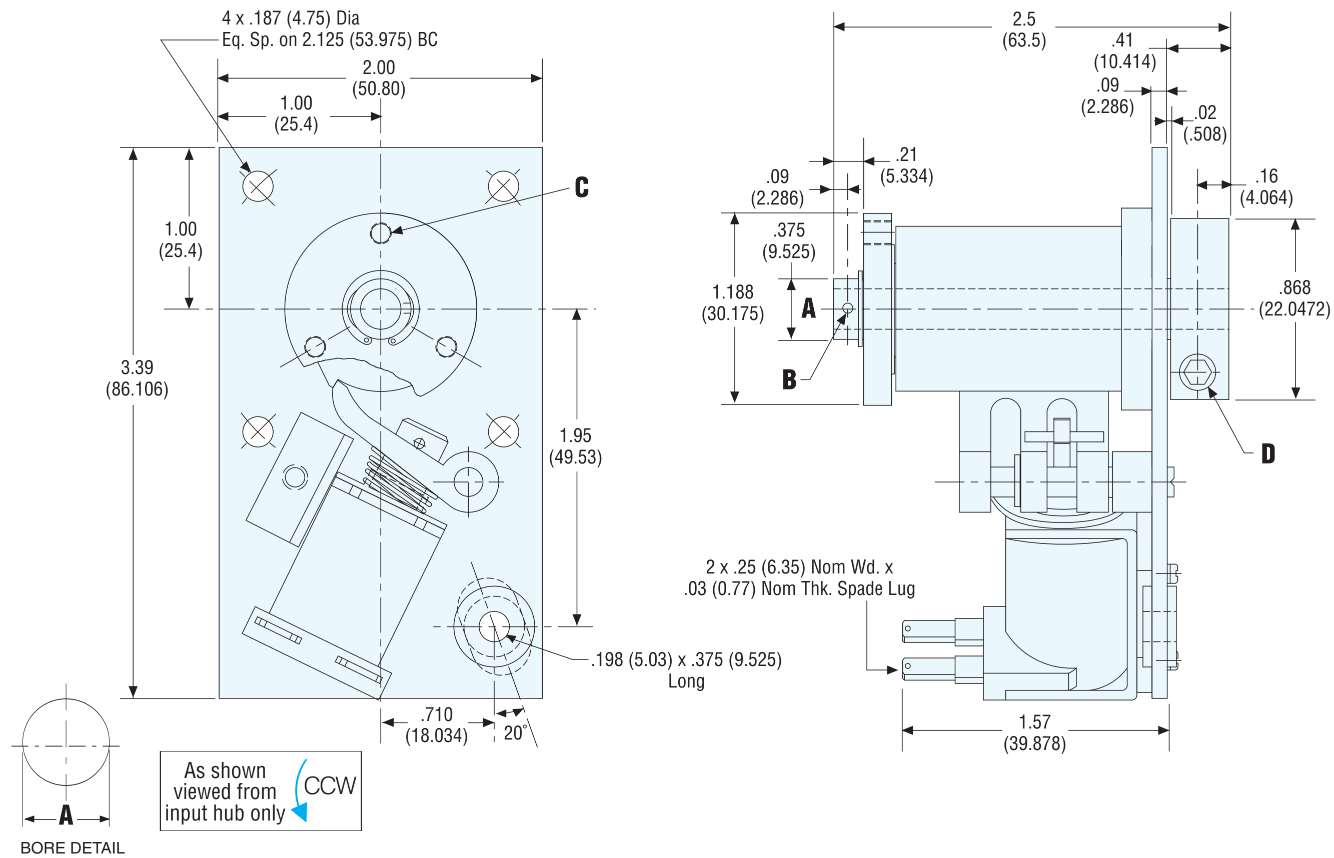
Specify:

1. Series CB
   English
   Metric
2. Size: CB-2, CB-4, CB-5, CB-6, CB-8
3. Direction of rotation:
   CW Clockwise
   CCW Counterclockwise
4. Coil voltage:
   115 AC or 24 DC are standard
   12 DC or 90 DC are options
5. Bore size:
   CB-2 = ¼"
   CB-4 = ⅜"
   CB-5 = ½"
   CB-6 = ¾" or 1"
   CB-8 = 1¼" or 1½" standard
   1" or 1⅜" special order
6. Stop collar:
   1, 2 or 4 stops standard
   Other stop collars are available as specials

Example: CB-8, CCW, 115VAC, 1" bore, 4 stop collar.

CB	-8	CCW	115VAC	1"	4
1	2	3	4	5	6

Dimensions in. (mm)



Bore Sizes

		Bore A	Pin Hole B	Mtg. Holes C	Set Screws D
English	in. (mm)	.2505-.253 (6.3627-6.4262)	.062 (1.5748)	3x #6-32 Eq. Sp. on .938 BC	#8 SHCS
Metric	mm (in.)	6.0 H9 (.2362-.2374)	1.5 (.055–.062)	3x M4 x 0.7 Eq. Sp. on 23.83 BC	M4 x 0.7 SHCS

All dimensions are nominal unless otherwise noted.

CB-2 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
0.25"	24 VDC	CW CCW	302-17-001 302-27-001	302-17-002 302-27-011	302-17-003 302-27-003
0.25"	115 VAC	CW CCW	302-17-007 302-27-007	302-17-008 302-27-008	302-17-009 302-27-009

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.10*	825	Standard
24 DC	.23	104	Standard
12 DC	.46	26	Option
90 DC	.06	1510	Option

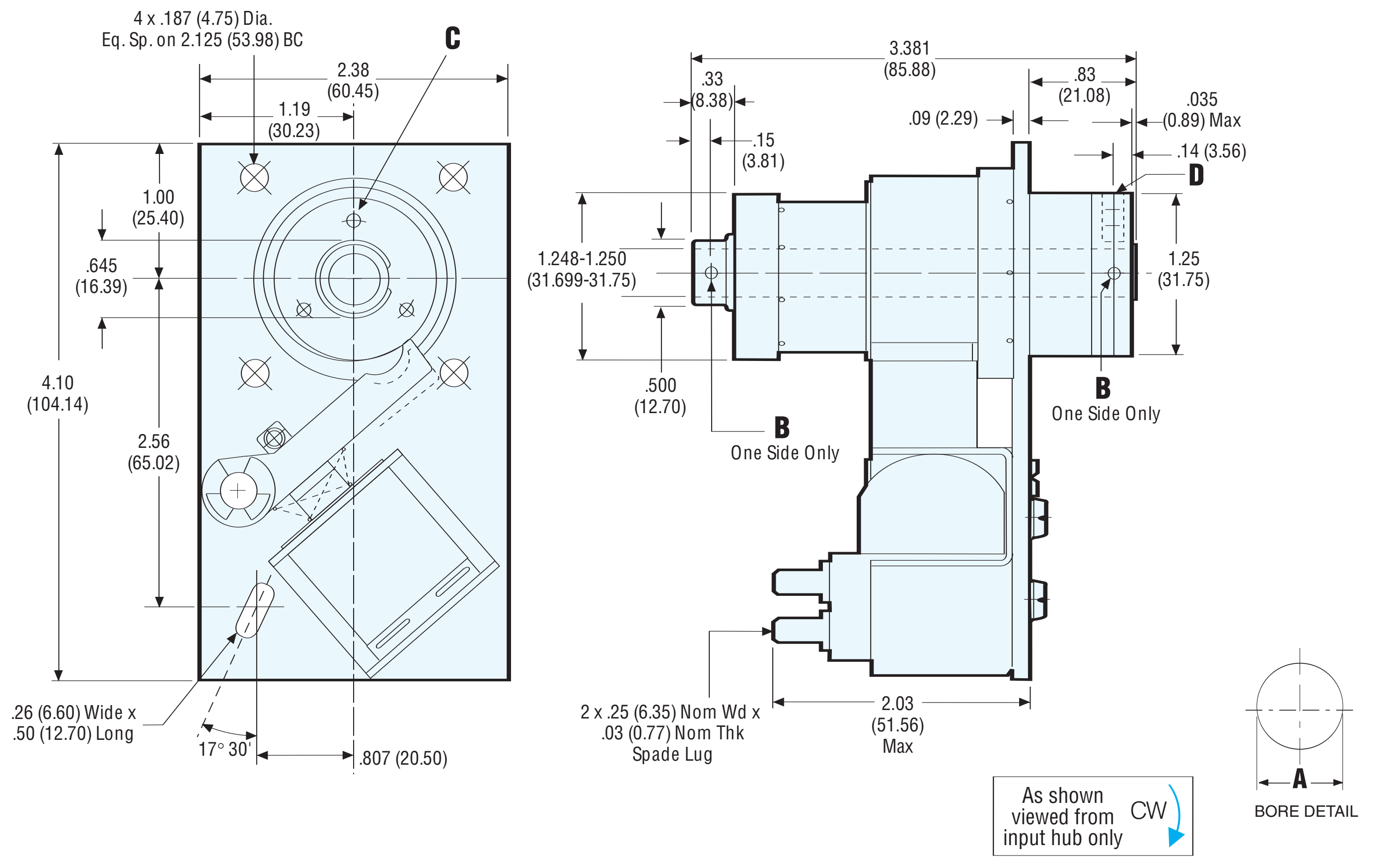
(Coils are rated for continuous duty)

*115 AC—In rush current .10 amps, Holding current .05 amps

Specifications

Static Torque	25 lb.in.
Maximum anti-overrun holding capability	10 lb.in.
Maximum anti-back holding capability	10 lb.in.
Inertia, rotating parts	.034 lb.in.^{2}
Maximum radial bearing load at maximum speed	7.5 lbs.
Maximum operating speed	1800 RPM
Response time, voltage on at full speed	20 MS
Weight	1 lb.

Dimensions in. (mm)



Bore Sizes

	Bore A	Pin Hole B	Mtg. Holes C	Set Screws D
English in. (mm)	.376-.378 (9.55-9.60)	.125 (3.175)	3x #6-32 Eq. Sp. on .938 BC	#8-32 x .188 Lg. Hex Skt. Set Screw
Metric mm (in.)	10.0 H9 (.3937-.3951)	3.0 (.117-.121)	3x M4 x 0.7 on 23.83 BC	M4 x 0.7 x 5.0 Lg. Hex Skt. Set Screw

All dimensions are nominal unless otherwise noted.

CB-4 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
0.375"	24 VDC	CW	304-17-001	304-17-011	304-17-007
		CCW	304-27-001	304-27-007	304-27-026
0.375"	115 VAC	CW	304-17-003	304-17-008	304-17-018
		CCW	304-27-003	304-27-015	304-27-025

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.10*	280	Standard
24 DC	.32	74	Standard
12 DC	.73	16.4	Option
90 DC	.10	936	Option

(Coils are rated for continuous duty)

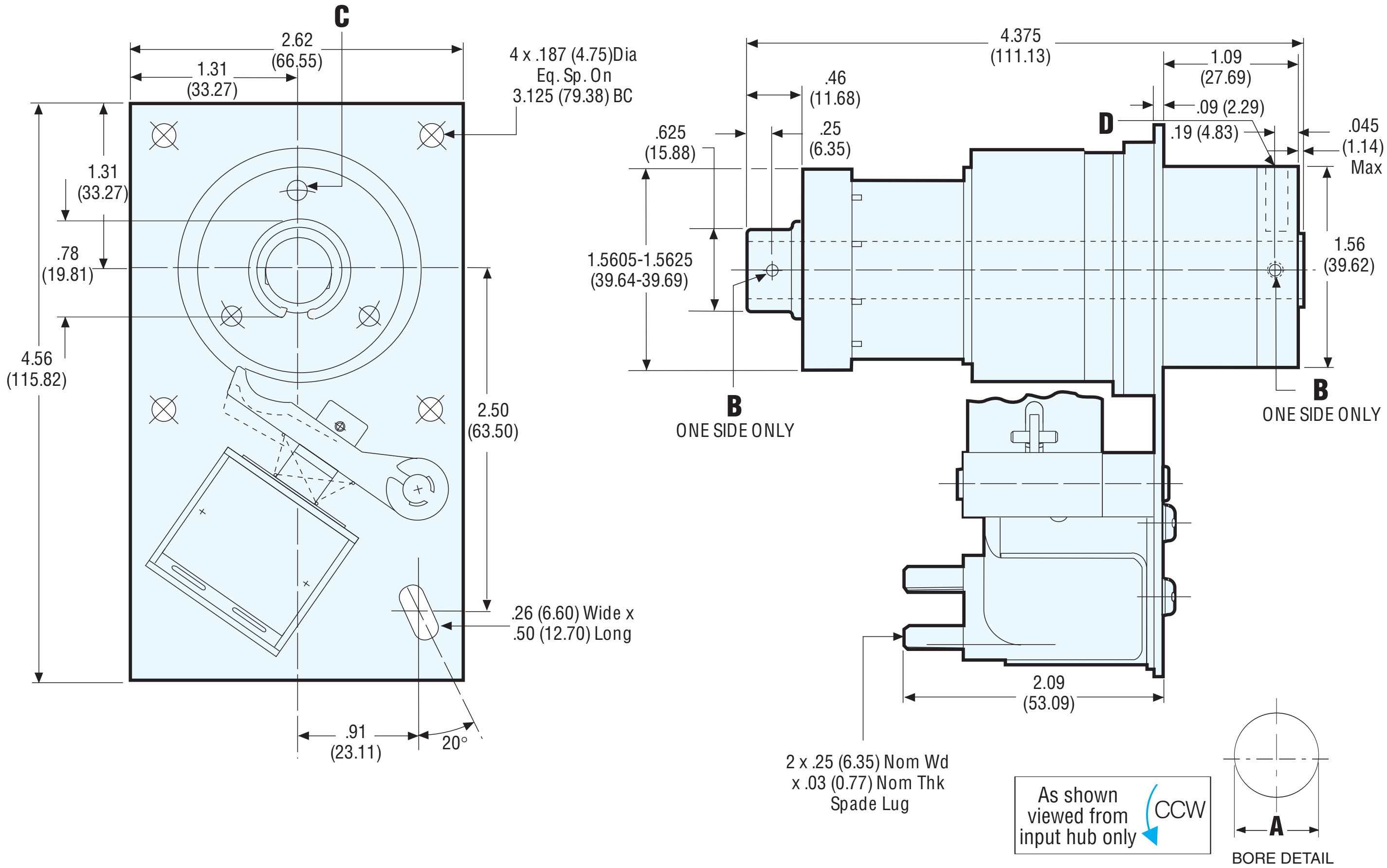
*115 AC—In rush current .22 amps, Holding current .09 amps

Specifications

Static Torque	120 lb.in.
Maximum anti-overrun holding capability	25 lb.in.
Maximum anti-back holding capability	80 lb.in.
Inertia, rotating parts	.064 lb.in.^{2}
Maximum radial bearing load at maximum speed	14 lbs.
Maximum operating speed	1,200 RPM
Response time, voltage on at full speed	24 MS
Weight	2 lbs.

CB-5 Clutch/Brake

Dimensions in. (mm)



Bore Sizes

		Bore A	Pin Hole B	Mtg. Holes C	Set Screws D
English	in. (mm)	.5005-.5025 (12.712-12.764)	.125 (3.175)	3x #10-32 UNF-2B Eq. Sp. on 1.25 BC	#8-32 x .25 Skt. Set Screw
Metric	mm (in.)	12.0 H9 (.4724-.4741)	3.0 (.117-.121)	3x M5 x 0.8 on 31.75 BC	

All dimensions are nominal unless otherwise noted.

CB-5 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
0.5"	24 VDC	CW CCW	305-17-001 305-27-001	305-17-002 305-27-002	305-17-003 305-27-003
0.5"	115 VAC	CW CCW	305-17-007 305-27-007	305-17-008 305-27-008	305-17-009 305-27-009

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.10*	280	Standard
24 DC	.32	74	Standard
12 DC	.73	16.4	Option
90 DC	.10	936	Option

(Coils are rated for continuous duty)

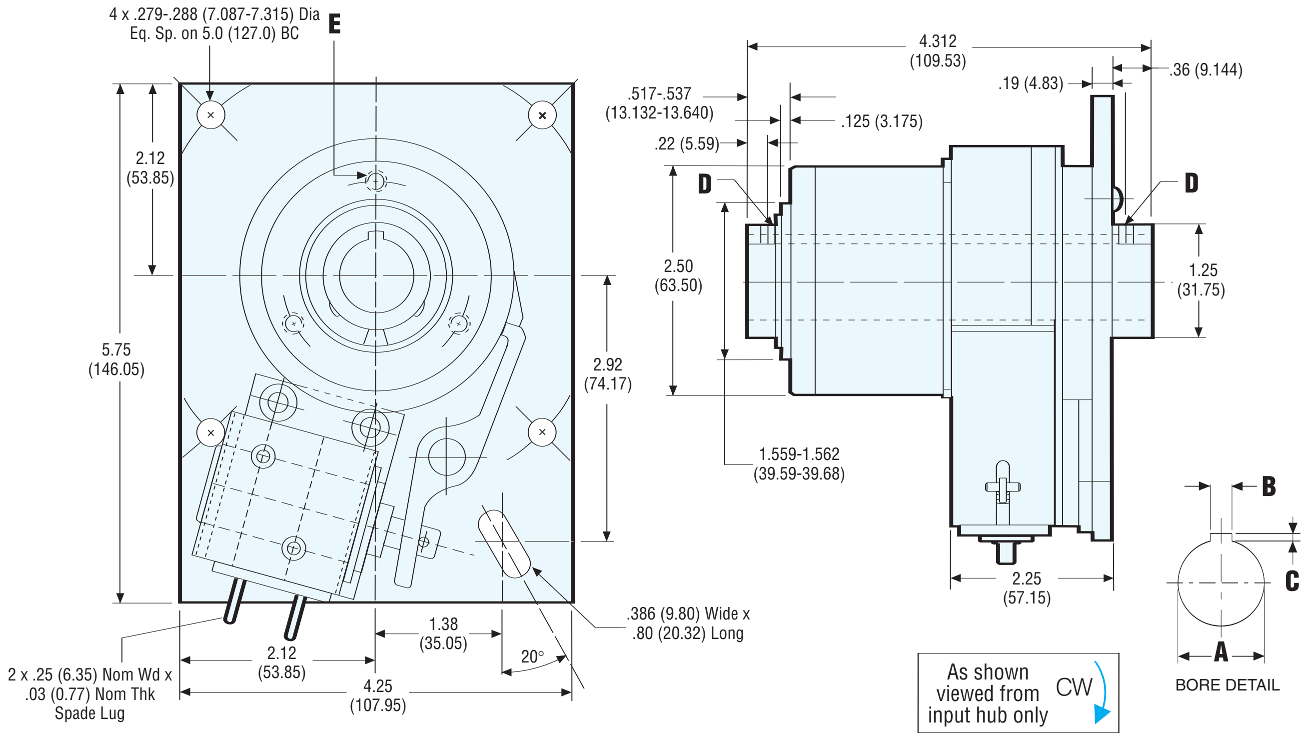
*115 AC—In rush current .22 amps, Holding current .09 amps

Specifications

Static Torque	250 lb.in.
Maximum anti-overrun holding capability	45 lb.in.
Maximum anti-back holding capability	160 lb.in.
Inertia, rotating parts	.195 lb.in.^{2}
Maximum radial bearing load at maximum speed	32 lbs.
Maximum operating speed	750 RPM
Response time, voltage on at full speed	27 MS
Weight	3 lbs.

CB-6 Clutch/Brake

Dimensions in. (mm)



Bore & Keyway Sizes

		Bore A	Keyway Width B	Keyway Depth C	Set Screws/Pin Hole D	Mtg. Holes E
English	in. (mm)	.7505-.7525 (19.062-19.114)	.1875 (4.7625)	.09375 (2.381)	2x #10-32 UNF-2B	3x #1/4-20 UNC-2B Eq. Sp. on 2.062 BC
		1.0005-1.0025 (25.412-25.464)	—	—	2x .187 Hole (4.7498)	3x #1/4-20 UNC-2B Eq. Sp. on 2.062 BC
Metric	mm (in.)	20.0 H9 (.7874-.7894)	6.0 (.2362)	2.8 (.1102)	2x M5 x 0.8 x 5.0 Lg. Hex Soc. Set Screw	3x M6 x 1.0 on 52.38 BC
		25.0 H9 (.9842-.9862)	—	—	2x 5.0 Hole (.191-.203)	3x M6 x 1.0 on 52.38 BC

All dimensions are nominal unless otherwise noted.

CB-6 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
0.75"	24 VDC	CW CCW	306-17-051 306-27-029	306-17-074 306-27-046	306-17-162 306-27-134
0.75"	115 VAC	CW CCW	306-17-053 306-27-031	306-17-060 306-27-039	306-17-073 306-27-045
1.0"	24 VDC	CW CCW	306-17-057 306-27-032	306-17-061 306-27-147	306-17-031 306-27-150
1.0"	115 VAC	CW CCW	306-17-059 306-27-034	306-17-062 306-27-044	306-17-075 306-27-037

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.33*	53.5	Standard
24 DC	.60	39.9	Standard
12 DC	1.15	10.4	Option
90 DC	.15	598	Option

(Coils are rated for continuous duty)

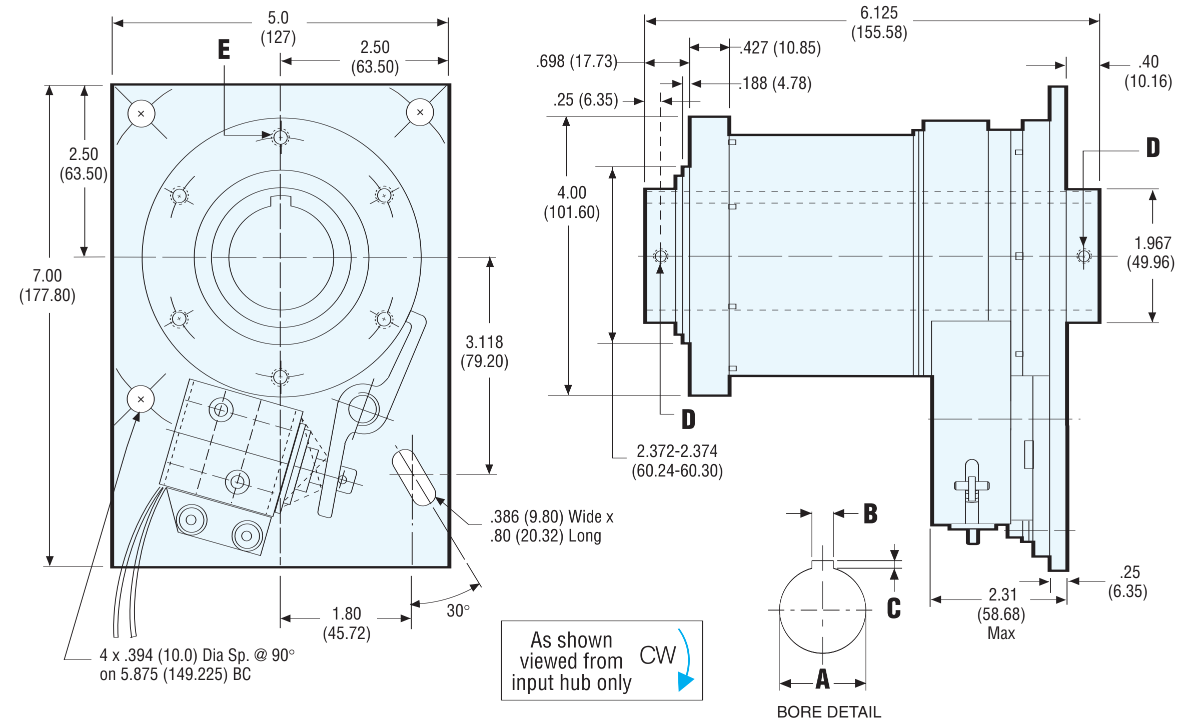
*115 AC—In rush current .62 amps, Holding current .31 amps

Specifications

Static Torque	500 lb.in.
Maximum anti-overrun holding capability	300 lb.in.
Maximum anti-back holding capability	300 lb.in.
Inertia, rotating parts	1.718 lb.in.^{2}
Maximum radial bearing load at maximum speed	63 lbs.
Maximum operating speed	500 RPM
Response time, voltage on at full speed	45 MS
Weight	7 lbs.

CB-8 Clutch/Brake

Dimensions in. (mm)



Bore & Keyway Sizes

		Bore A	Keyway Width B	Keyway Depth C	Set Screws D	Mtg. Holes E
English	in. (mm)	1.2505-1.2525 (31.762-31.814)	.3125 (7.9375)	.15625 (3.9688)	2x #1/4-20 UNC-2B	6x 5/16-18 UNC-2B Eq. Sp. on 3.375 BC
		1.5005-1.5025 (38.112-38.164)	.375 (9.525)	.125 (3.175)	2x #1/4-20 x UNC-2B	6x 5/16-18 UNC-2B Eq. Sp. on 3.375 BC
Metric	mm (in.)	35.0 H9 (1.3780-1.3804)	10.0 (.3937)	3.3 (.1299)	2x M6 x 1.0 x 10.0 Lg. Hex Soc. Set Screw	6x M8 x 1.25 on 85.73 BC
		40.0 H9 (1.5784-1.5772)	—	—	2x M6 x 1.0 x 10.0 Lg. Hex Soc. Set Screw	6x M8 x 1.25 on 85.73 BC

All dimensions are nominal unless otherwise noted.

CB-8 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
1.25"	24 VDC	CW	308-17-101	308-17-102	308-17-103
		CCW	308-27-101	308-27-102	308-27-103
1.25"	115 VAC	CW	308-17-107	308-17-108	308-17-109
		CCW	308-27-107	308-27-108	308-27-109
1.5"	24 VDC	CW	308-17-119	308-17-120	308-17-121
		CCW	308-27-119	308-27-120	308-27-121
1.5"	115 VAC	CW	308-17-125	308-17-126	308-17-127
		CCW	308-27-125	308-27-126	308-27-127

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.33*	53.5	Standard
24 DC	.60	39.8	Standard
12 DC	1.15	10.4	Option
90 DC	.15	598	Option

(Coils are rated for continuous duty)

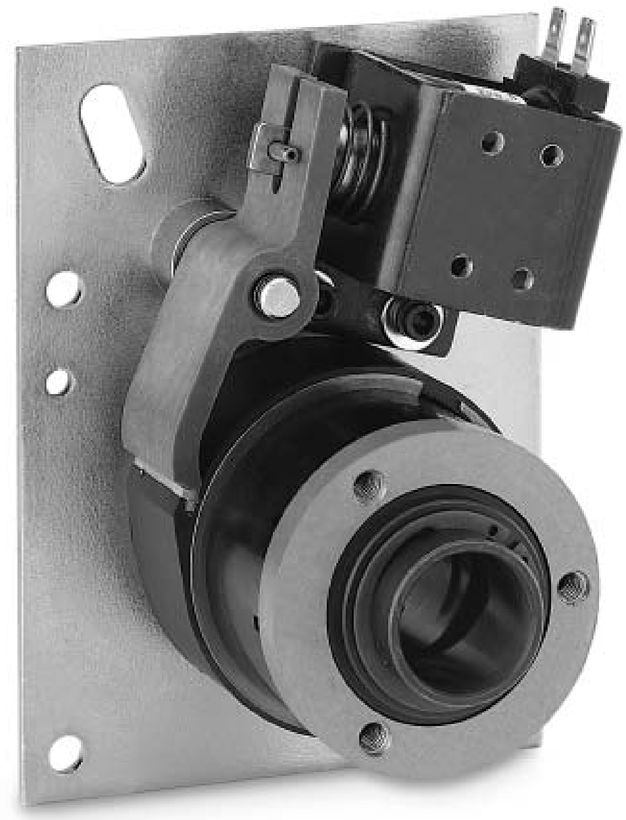
*115 AC—In rush current .62 amps, Holding current .31 amps

Specifications

Static Torque	2,500 lb.in.
Maximum anti-overrun holding capability	600 lb.in.
Maximum anti-back holding capability	600 lb.in.
Inertia, rotating parts	12.840 lb.in.^{2}
Maximum radial bearing load at maximum speed	300 lbs.
Maximum operating speed	300 RPM
Response time, voltage on at full speed	50 MS
Weight	15 lbs.

Long Life, High Performance Design

The Super CB Series Clutch/Brakes function in the same manner as the standard CB Series. The major advantage of the Super CB Series is extraordinary long life, up to five times longer than a standard unit. This makes the Super CB Series the ideal choice for applications involving high cycle rates and continuous heavy-duty operation.



Super CB Series design features

The standard CB Series and SCB Series units both employ three primary hubs that are oil impregnated; the input hub, the brake hub and an internal hub pinned to the output shaft. On standard units, the oil lubricates the bearing surfaces of the input and brake hub, while the Super CB Series uses needle bearings in the input and brake hubs to increase the radial bearing load capacity. Both types require oil in the hubs to lubricate the springs. The Super CB Series units also feature hardened steel wear rings on the primary hubs at the crossover point of the clutch, brake and shaft hubs to further increase life. The control collar assemblies are glass reinforced nylon, strengthened by steel or aluminum inserts. The actuators are Delrin' AF on all models.

Features

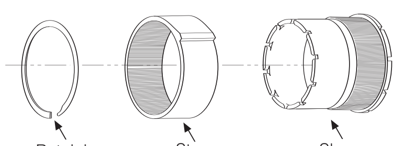
- ☐ Increased life-up to five times longer than standard models
- ☐ Stop Position Accuracy ±1/2°
- ☐ Adjustable Output Stop Positions
- ☐ Standard Features
  - – CW or CCW Rotation
  - – Hub Input – Shaft Output
  - – Anti-Overrun Output does not overrun Input
  - – Anti-Back Output does not Backup
- ☐ 1, 2 and 4 stop collars for 360°, 180°, and 90° output increments standard
  - – Special multi-stop collars also available (up to 24 stops)
- ☐ 115 VAC and 24 VDC Solenoids Standard
  - – Other Voltages Available
- ☐ Dimensionally Interchangeable With Competitive Units
- ☐ 3 Standard Models
  - SCB-5
  - SCB-6
  - SCB-8
- ☐ High torque in small package.
- ☐ Actuating solenoid is AC or DC operated.
- ☐ Brake engages automatically when de-clutched.
- ☐ Maintenance-free self-lubricating hubs are 18% oil by volume.
- ☐ Hardened thrust washers on input and brake end.
- ☐ Sintered metal hub offers easy machining for custom drive attachments.
- ☐ Hardened and ground shaft.
- ☐ Hub mounting holes for simple pulley or sprocket mounting.
- ☐ Hardened crossover points on input, output and brake hubs provide increased life.
- ☐ Steel tip insert on control cam collar.
- ☐ Single or multi-stop collars available.

Super CB Series Clutch/Brakes

Specifications	SCB-5	SCB-6	SCB-8
Static Torque	250 lb.in. (28.25 N-m)	500 lb.in. (56.5 N-m)	2,500 lb.in. (282.5 N-m)
Maximum anti-overrun holding capability	125 lb.in. (14.125 N-m)	300 lb.in. (33.9 N-m)	600 lb.in. (67.8 N-m)
Maximum anti-back holding capability	125 lb.in. (14.125 N-m)	300 lb.in. (33.9 N-m)	600 lb.in. (67.8 N-m)
Inertia, rotating parts	.236 lb.in.^{2}	1.718 lb.in.^{2}	12.840 lb.in.^{2}
Maximum radial bearing load at maximum speed	35 lbs.	65 lbs.	300 lbs.
Maximum operating speed	750 RPM	500 RPM	300 RPM
Response time, voltage on at full speed	27 MS	45 MS	50 MS
Weight	3 lbs.	7 lbs.	15 lbs.

See page 32 for Minimum Inertia Requirements.
See page 8 for Mounting Instructions.

Control Collars



These clutch/brakes offer unique splined stop collars which can be adjusted radially in fine increments. This feature allows the user to reposition the output to comply with specified shaft and keyway placements. Standard stop collar positioning increments are shown below for all models:

SCB-5	1.8° Adjustable
SCB-6	1.8° Adjustable
SCB-8	1.6° Adjustable

Optional Multiple Stop Collars

A one, two or four stop collar is standard on SCB Series clutch/brakes.
A variety of stop collar configurations, up to 24* stops maximum, are available. Consult Warner Electric Technical Support at 800-825-9050 for complete information.

***Note:** 4 stop maximum with steel tip cam.

Basic Selection

See pages 6–7 for basic product selection guidelines.

For complete Application Engineering information see pages 32–34.

How to Order

Order by part number (see chart on dimensions page) or specify as follows.

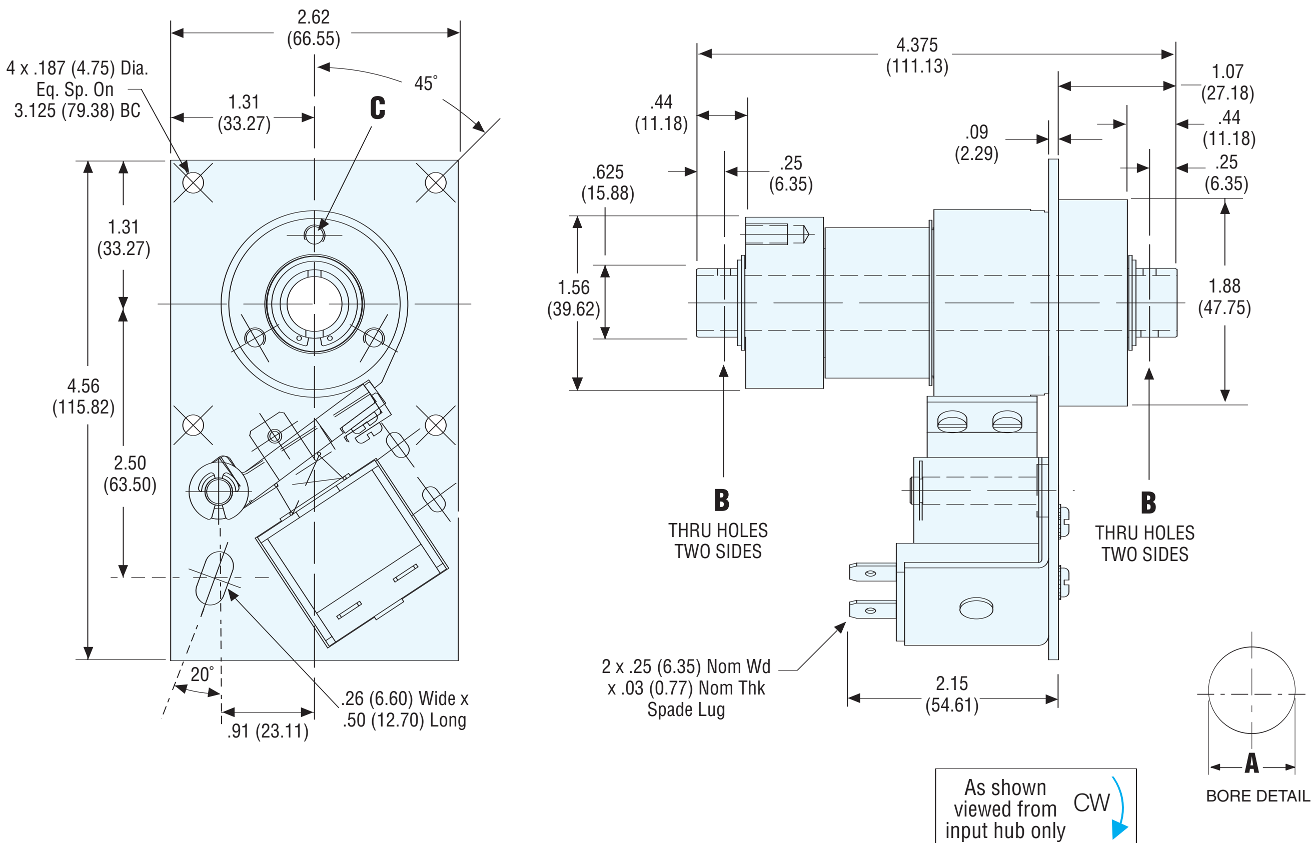
Specify:

1. Series Super CB
   English
   Metric
2. Size: SCB-5, SCB-6, SCB-8
3. Direction of rotation:
   CW Clockwise
   CCW Counterclockwise
4. Coil voltage:
   115 AC or 24 DC are standard
   12 DC or 90 DC are options
5. Bore size:
   SCB-5: 1/2" standard
   SCB-6: 3/4", 1" standard
   SCB-8: 1 1/4", 1 1/2" standard
   1", 1 3/8" special order
6. Stop collar:
   1, 2 or 4 stop standard
   Other stop collars are available as specials

Example: SCB-8, CCW, 115VAC, 1-1/4" bore, 1 stop collar.

SCB Series	-8	CCW	115VAC	1-1/4"	1
1	2	3	4	5	6

Dimensions in. (mm)



Bore Sizes

	Bore A	Pin Hole B	Mtg. Holes C	Set Screws D
English in. (mm)	.5005-.5025 (12.712-12.764)	.125 (3.175)	3x #10-32 UNF-2B Eq. Sp. on 1.25 BC	#8-32 x .25 Skt. Set Screw
Metric mm (in.)	12.0 H9 (.4724-.4741)	3.0 (.117-.121)	3x M5 x 0.8 on 31.75 BC	

All dimensions are nominal unless otherwise noted.

SCB-5 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
0.5"	24 VDC	CW CCW	325-17-001 325-27-001	325-17-002 325-27-002	325-17-003 325-27-003
0.5"	115 VAC	CW CCW	325-17-004 325-27-004	325-17-005 325-27-005	325-17-006 325-27-006

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.10*	280	Standard
24 DC	.32	74	Standard
12 DC	.73	16.4	Option
90 DC	.10	936	Option

(Coils are rated for continuous duty)

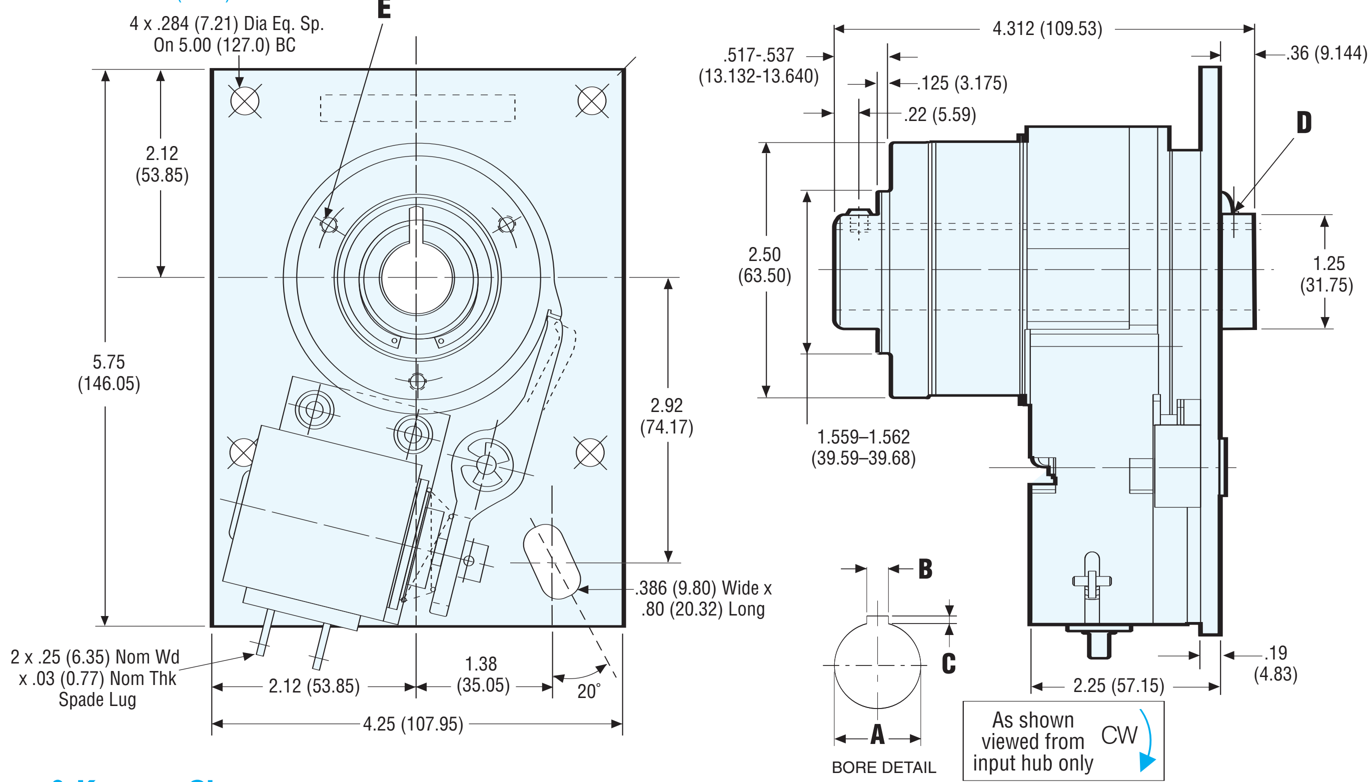
*115 AC—In rush current .22 amps, Holding current .09 amps

Specifications

Static Torque	250 lb.in.
Maximum anti-overrun holding capability	125 lb.in.
Maximum anti-back holding capability	125 lb.in.
Inertia, rotating parts	.236 lb.in.^{2}
Maximum radial bearing load at maximum speed	35 lbs.
Maximum operating speed	750 RPM
Response time, voltage on at full speed	27 MS
Weight	3 lbs.

Super CB-6 Clutch/Brake

Dimensions in. (mm)



Bore & Keyway Sizes

		Bore A	Keyway Width B	Keyway Depth C	Set Screws/Pin Hole D	Mtg. Holes E
English	in. (mm)	.7505-.7525 (19.062-19.114)	.1875 (4.7625)	.09375 (2.381)	2x #10-32 UNF-2B	3x #1/4-20 UNC-2B Eq. Sp. on 2.062 BC
		1.0005-1.0025 (25.412-25.464)	—	—	2x .187 Hole (4.7498)	3x #1/4-20 UNC-2B Eq. Sp. on 2.062 BC
Metric	mm (in.)	20.0 H9 (.7874-.7894)	6.0 (.2362)	2.8 (.1102)	2x M5 x 0.8 x 5.0 Lg. Hex Skt. Set Screw	3x M6 x 1.0 on 52.38 BC
		25.0 H9 (.9842-.9862)	—	—	2x 5.0 Hole (.191-.203)	3x M6 x 1.0 on 52.38 BC

All dimensions are nominal unless otherwise noted.

SCB-6 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
0.75"	24 VDC	CW	326-17-007	326-17-008	326-17-009
		CCW	326-27-007	326-27-008	326-27-009
0.75"	115 VAC	CW	326-17-019	326-17-020	326-17-021
		CCW	326-27-019	326-27-020	326-27-021
1.0"	24 VDC	CW	326-17-010	326-17-011	326-17-012
		CCW	326-27-010	326-27-011	326-27-012
1.0"	115 VAC	CW	326-17-022	326-17-023	326-17-024
		CCW	326-27-022	326-27-023	326-27-024

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.33*	53.5	Standard
24 DC	.60	39.8	Standard
12 DC	1.15	10.4	Option
90 DC	.15	598	Option

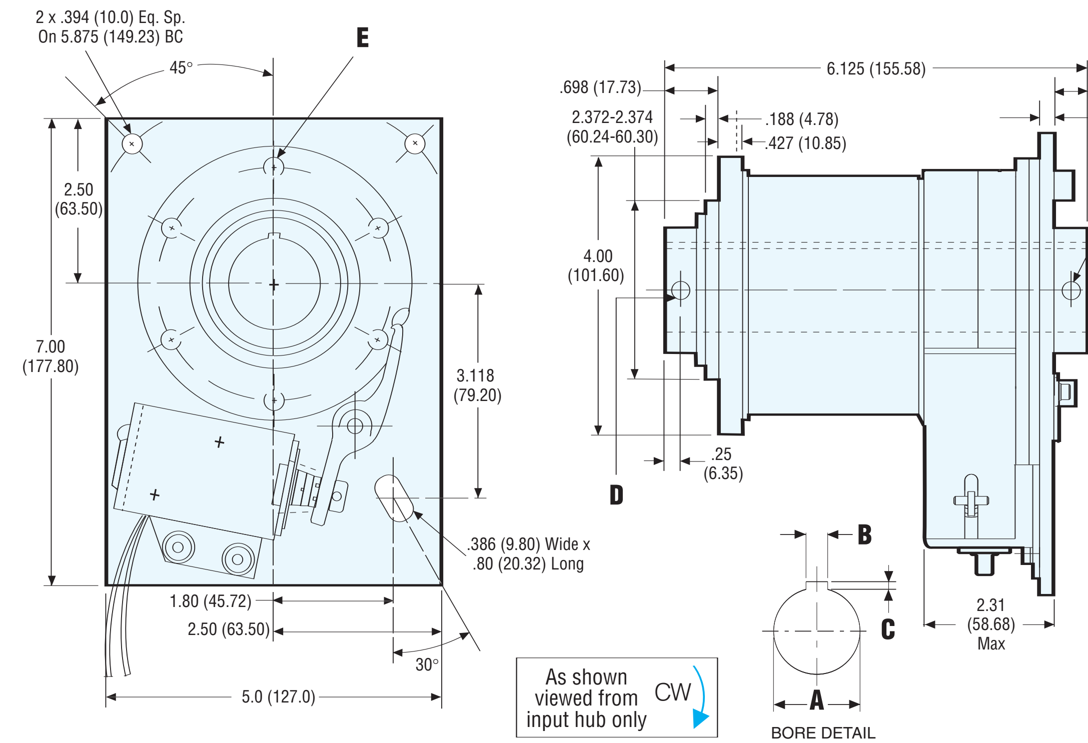
(Coils are rated for continuous duty)

*115 AC—In rush current .62 amps, Holding current .31 amps

Specifications

Static Torque	500 lb.in.
Maximum anti-overrun holding capability	300 lb.in.
Maximum anti-back holding capability	300 lb.in.
Inertia, rotating parts	1.718 lb.in.^{2}
Maximum radial bearing load at maximum speed	65 lbs.
Maximum operating speed	500 RPM
Response time, voltage on at full speed	45 MS
Weight	7 lbs.

Dimensions in. (mm)



Bore & Keyway Sizes

		Bore A	Keyway Width B	Keyway Depth C	Set Screws D	Mtg. Holes E
English	in. (mm)	1.2505-1.2525 (31.762-31.814)	.3125 (7.9375)	.15625 (3.9688)	2x #1/4-20 UNC-2B	6x 5/16-18 UNC-2B Eq. Sp. on 3.375 BC
		1.5005-1.5025 (38.112-38.164)	.375 (9.525)	.125 (3.175)	2x #1/4-20 UNC-2B	6x 5/16-18 UNC-2B Eq. Sp. on 3.375 BC
Metric	mm (in.)	35.0 H9 (1.3780-1.3804)	10.0 (.3937)	3.3 (.1299)	2x M6 x 1.0 x 10.0 Lg. Hex Skt. Set Screw	6x M8 x 1.25 on 85.73 BC
		40.0 H9 (1.5784-1.5772)	—	—	2x M6 x 1.0 x 10.0 Lg. Hex Skt. Set Screw	6x M8 x 1.25 on 85.73 BC

All dimensions are nominal unless otherwise noted.

SCB-8 Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
1.25"	24 VDC	CW CCW	328-17-019 328-27-019	328-17-020 328-27-020	328-17-021 328-27-021
1.25"	115 VAC	CW CCW	328-17-043 328-27-043	328-17-044 328-27-044	328-17-045 328-27-045
1.5"	24 VDC	CW CCW	328-17-013 328-27-013	328-17-014 328-27-014	328-17-015 328-27-015
1.5"	115 VAC	CW CCW	328-17-037 328-27-037	328-17-038 328-27-038	328-17-039 328-27-039

These are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

Electrical Data (±10%)

Voltage	Current (amps)	Resistance (ohms)	Status
115 AC 60 Hz	.33*	53.5	Standard
24 DC	.94	25.4	Standard
12 DC	1.87	6.43	Option
90 DC	.24	378	Option

(Coils are rated for continuous duty)

*115 AC—In rush current .62 amps, Holding current .31 amps

Specifications

Static Torque	2,500 lb.in.
Maximum anti-overrun holding capability	600 lb.in.
Maximum anti-back holding capability	600 lb.in.
Inertia, rotating parts	12.840 lb.in.^{2}
Maximum radial bearing load at maximum speed	300 lbs.
Maximum operating speed	300 RPM
Response time, voltage on at full speed	50 MS
Weight	15 lbs.

WSC Series Clutches

Mechanically Activated, Basic Wrap Spring Clutch Design

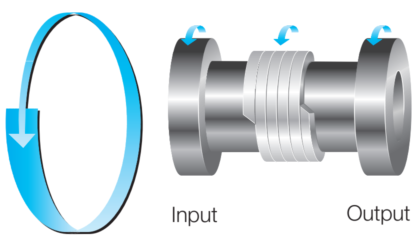
WSC Series wrap spring clutches are mechanically actuated, eliminating the need for external electrical control devices. These simple, trouble free, easy-to-install clutches feature a high torque capacity in a small, compact package.

A choice of three different operating styles is available.

Features

- Five standard sizes
- Standard bore sizes from 1/4" to 1-1/2"
- Static torque rating from 25 lb.in. to 2500 lb.in.
- Mechanically actuated
- Choice of hub or shaft input
- 1, 2 or 4 stop collars standard
- Overtravel stop
- Anti-overrun
- Adjustable stop feature
- Self-lubricating, no maintenance
- Simple mechanical actuation
- Easy-to-machine hubs readily adapt to application needs
- Single stop collars for single revolution operation
  Multistops for less than one turn

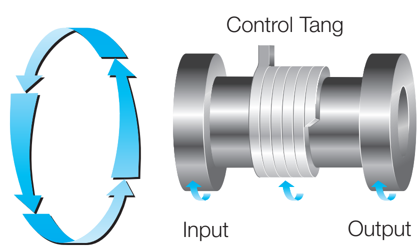
Overrunning/One-Way (Model O)



The overrunning clutch (Model O) transmits torque up to the rated value in the positive direction, when disengaged it only transmits some drag torque in the reverse direction. Major applications for this unit are anti-overrun protection and anti-backup devices.

The load is allowed to overrun the input, should the load speed exceed the input speed. In reverse it acts as a one-way clutch, preventing reverse rotation.

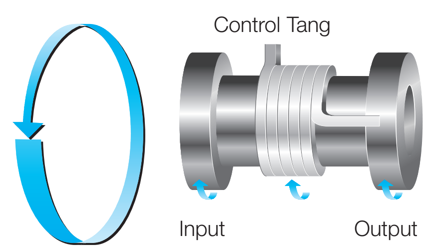
Start/Coast-To-Stop (Model SS)



The start/coast-to-stop clutch (Model SS) accelerates the load just after the control collar has been released, thus the collar is free to rotate allowing the spring to grip both hubs together. To disconnect the clutch, the collar has to be restrained, stopping the collar from rotating via the stop face. The spring will then be opened and the clutch will be disengaged. The output is free to rotate and will be stopped by system friction and clutch drag torque.

The start/coast-to-stop clutch is engaged until the collar is stopped, which disengages the clutch allowing the load to coast to a stop.

Single Revolution (Model S)



The single revolution clutch (Model S) accelerates in the same manner as the model SS. The deceleration starts when the collar is restrained, and the spring is opened, disengaging the clutch.

For Model S, the brake torque capability is limited to 10% of the rated torque.

All WSC Series clutches are easy to install. The shaft can be pinned or, on larger units, delivered with keyways, a simple solution for applications requiring accurate positioning. One, two or four stop per revolution collars are available.

Specifications	WSC-2	WSC-4	WSC-5	WSC-6	WSC-8
Static Torque (lb.in.)	25	120	250	500	2500
Inertia, shaft input rotating parts (lb.in.^{2})	0.006	0.015	0.059	0.570	4.99
Inertia, hub input rotating parts (lb.in.^{2})	0.008	0.023	0.069	0.73 (0.75" Bore) 0.68 (1.00" Bore)	11.91 (1.25" Bore) 11.60 (1.50" Bore)
Maximum radial bearing load at maximum speed (lbs.)	6.75	13.5	31.5	63.0	300.0
Maximum operating speed (RPM)	1800	1200	750	500	300
Weight (lbs.)	0.13	0.22	0.62	2.60	8.25

See page 32 for Minimum Inertia Requirements.
See page 8 for Mounting Instructions.

Optional Multiple Stop Collars

The WSC Series clutches feature a choice of collars with one, two or four stops as standard. Other stop collar configurations are available on special order.

Basic Selection

See pages 6–7 for basic product selection guidelines.

For complete Application Engineering information see pages 32–34.

How to Order

Order by part number (see chart on dimension pages) or specify as follows:

Specify:

1. WSC Series
2. Size: WSC-2, WSC-4, WSC-5, WSC-6, or WSC-8
3. Type of Operation:
   S—Single revolution
   SS—Start/Coast-To-Stop
   O—Overrunning
4. Direction of rotation:
   CW Clockwise
   CCW Counterclockwise
   (Direction of rotation is determined from the perspective of the input end.)
5. Hub input (HI) or shaft input (SI)
6. Standard Bore size:
   WSC-2 = 1/4"
   WSC-4 = 3/8"
   WSC-5 = 1/2"
   WSC-6 = 3/4" or 1"
   WSC-8 = 1 1/4" or 1 1/2"
7. Stop collar:
   Standard Stops: 1, 2 or 4

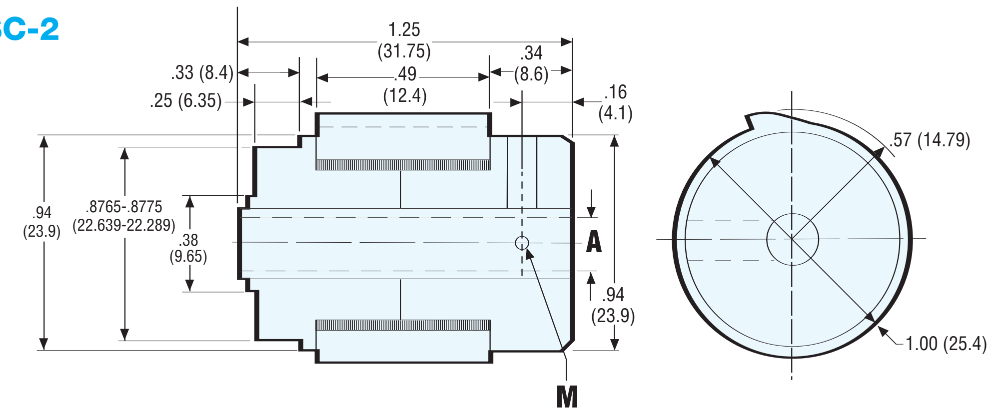
Example: WSC-6, S, CCW, HI, 1" bore, 4 stop collar.

WSC	-6	S	CCW	HI	1"	4
1	2	3	4	5	6	7

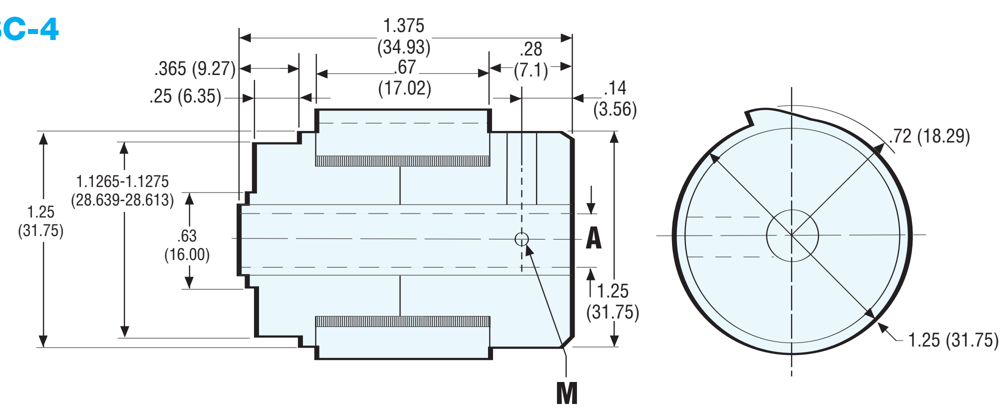
WSC-2, WSC-4, WSC-5 Clutches

Dimensions (mm)

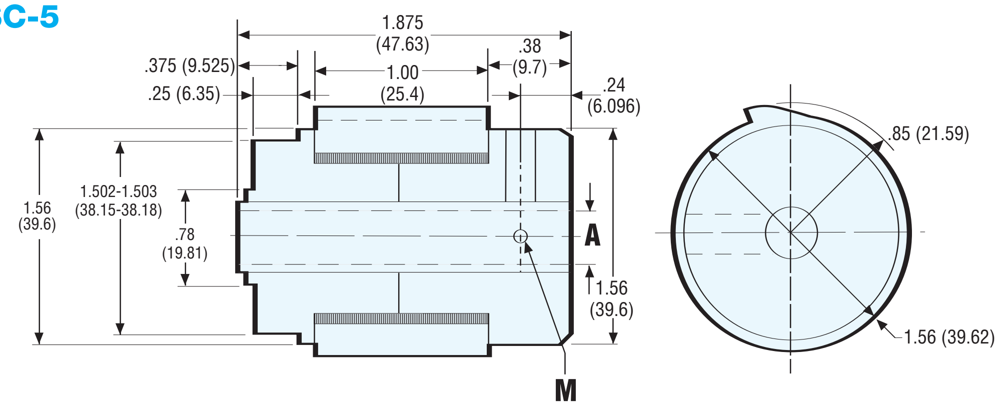
WSC-2



WSC-4



WSC-5



Part Numbers

WSC-2

Bore Size	Operation	Rotation	Input	Stops 1	Stops 2	Stops 4
0.25"	S (start/stop)	CW	Hub	202-10-016	202-10-009	202-10-020
0.25"	S (start/stop)	CCW	Hub	202-20-016	202-20-015	202-20-017
0.25"	S (start/stop)	CW	Shaft	202-30-011	202-30-007	202-30-015
0.25"	S (start/stop)	CCW	Shaft	202-40-014	202-40-008	202-40-017

These are the most commonly requested parts. Other units offering overrunning or start/coast-to-stop operation are available.

WSC-4

Bore Size	Operation	Rotation	Input	Stops 1	Stops 2	Stops 4
0.375"	S (start/stop)	CW	Hub	204-10-001	204-10-016	204-10-010
0.375"	S (start/stop)	CCW	Hub	204-20-004	204-20-008	204-20-016
0.375"	S (start/stop)	CW	Shaft	204-30-001	204-30-007	204-30-009
0.375"	S (start/stop)	CCW	Shaft	204-40-001	204-40-006	204-40-012

These are the most commonly requested parts. Other units offering overrunning or start/coast-to-stop operation are available.

WSC-5

Bore Size	Operation	Rotation	Input	Stops 1	Stops 2	Stops 4
0.5"	S (start/stop)	CW	Hub	205-10-001	205-10-014	205-10-017
0.5"	S (start/stop)	CCW	Hub	205-20-001	205-20-006	205-20-011
0.5"	S (start/stop)	CW	Shaft	205-30-001	205-30-014	205-30-016
0.5"	S (start/stop)	CCW	Shaft	205-40-004	205-40-016	205-40-007

These are the most commonly requested parts. Other units offering overrunning or start/coast-to-stop operation are available.

Bore Data

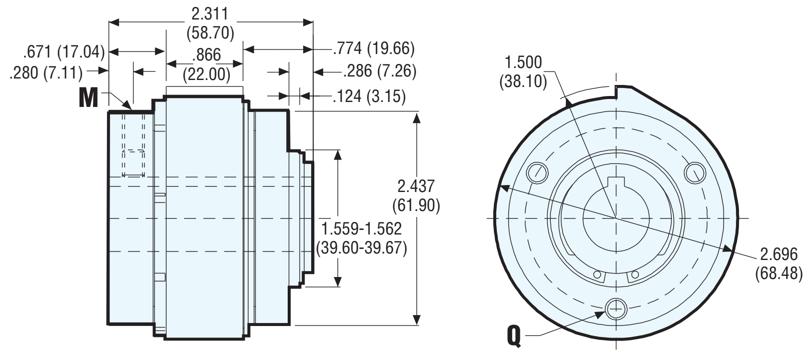
Model	Bore A	M
WSC-2	.2505-.2503 (6.363-6.426)	#8-32
WSC-4	.3755-.3780 (9.538-9.601)	.125 dia. (3.175 dia.)
WSC-5	.5005-.5030 (12.713-12.776)	.187 dia. (4.75 dia.)

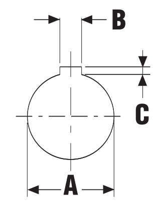
All dimensions are nominal unless otherwise noted.

Specifications	WSC-2	WSC-4	WSC-5
Static Torque (lb.in.)	25	120	250
Inertia, shaft input rotating parts (lb.in.^{2})	0.006	0.015	0.059
Inertia, hub input rotating parts (lb.in.^{2})	0.008	0.023	0.069
Maximum radial bearing load at maximum speed (lbs.)	6.75	13.5	31.5
Maximum operating speed (RPM)	1500	1200	750
Weight (lbs.)	0.13	0.22	0.62

WSC-6, WSC-8 Clutches

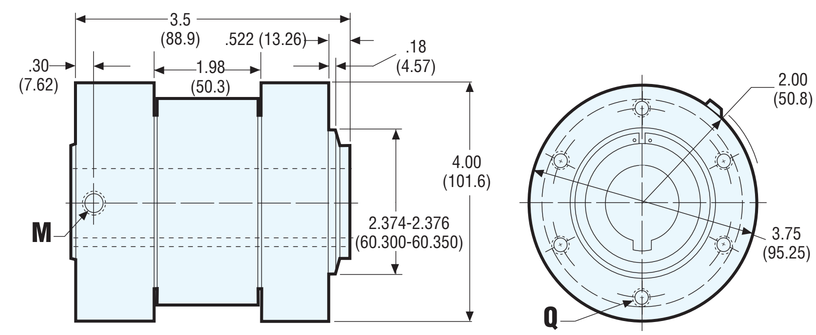
WSC-6





BORE DETAIL

WSC-8



Bore & Keyway Data All dimensions are nominal unless otherwise noted.

Model	Bore A	Keyway Width B	Keyway Height C	M	Q
WSC-6	.7505-.7525 (19.063-19.114)	.1885 (4.788)	.09375 (2.381)	#1/4-20 Tap	3x #1/4-20 Tap on 2.062 (52.375) BC Max. Thread Engagement .310 (7.87)
WSC-6	1.0005-1.0025 (25.412-25.464)	—	—	#1/4-20 Tap	3x #1/4-20 Tap on 2.062 (52.375) BC Max. Thread Engagement .310 (7.87)
WSC-8	1.2505-1.2530 (31.762-31.814)	.3125 (7.9375)	.15625 (3.9688)	3/16-16	6x 5/16-18 on 3.375 (85.725) BC Max. Thread Engagement .375 (9.53)
WSC-8	1.5005-1.5030 (38.113-38.176)	.375 (9.525)	.125 (3.175)	3/16-16	6x 5/16-18 on 3.375 (85.725) BC Max. Thread Engagement .375 (9.53)

Part Numbers

WSC-6

Bore Size	Operation	Rotation	Input	Stops 1	Stops 2	Stops 4
0.75"	S (start/stop)	CW	Hub	206-10-002	206-10-062	206-10-064
0.75"	S (start/stop)	CCW	Hub	206-20-002	206-20-023	206-20-058
0.75"	S (start/stop)	CW	Shaft	206-30-011	206-30-052	206-30-025
0.75"	S (start/stop)	CCW	Shaft	206-40-002	206-40-014	206-40-020
1.0"	S (start/stop)	CW	Hub	206-10-003	206-10-057	206-10-059
1.0"	S (start/stop)	CCW	Hub	206-20-003	206-20-060	206-20-013
1.0"	S (start/stop)	CW	Shaft	206-30-003	206-30-051	206-30-056
1.0"	S (start/stop)	CCW	Shaft	206-40-013	206-40-023	206-40-025

These are the most commonly requested parts. Other units offering overrunning or start/coast-to-stop operation are available.

WSC-8

Bore Size	Operation	Rotation	Input	Stops 1	Stops 2	Stops 4
1.25"	S (start/stop)	CW	Hub	208-10-004	208-10-027	208-10-028
1.25"	S (start/stop)	CCW	Hub	208-20-001	208-20-028	208-20-030
1.25"	S (start/stop)	CW	Shaft	208-30-001	208-30-021	—
1.25"	S (start/stop)	CCW	Shaft	208-40-013	208-40-015	208-40-017
1.50"	S (start/stop)	CW	Hub	208-10-007	208-10-025	208-10-030
1.50"	S (start/stop)	CCW	Hub	208-20-003	208-20-032	208-20-021
1.50"	S (start/stop)	CW	Shaft	208-30-003	208-30-025	208-30-027
1.50"	S (start/stop)	CCW	Shaft	208-40-003	208-40-020	208-40-022

These are the most commonly requested parts. Other units offering overrunning or start/coast-to-stop operation are available.

Specifications	WSC-6	WSC-8
Static Torque (lb.in.)	500	2500
Inertia, shaft input rotating parts (lb.in.^{2})	0.570	4.99
Inertia, hub input rotating parts (lb.in.^{2})	0.73 (0.75" Bore) 0.68 (1.00" Bore)	11.91 (1.25" Bore) 11.60 (1.50" Bore)
Maximum radial bearing load at maximum speed (lbs.)	63	300
Maximum operating speed (RPM)	500	300
Weight (lbs.)	2.60	8.25

One Shot Octal Socket Power Supply Model WSCC-102

Warner Electric's One Shot Power Supply is a plug-in clutch/brake control designed for operation of AC or DC wrap spring clutches and brakes with a D-frame coil. The One Shot provides a single voltage pulse of 160 or 325 VDC for approximately 20MS, whether the customer supplied switch is momentarily closed or held closed.

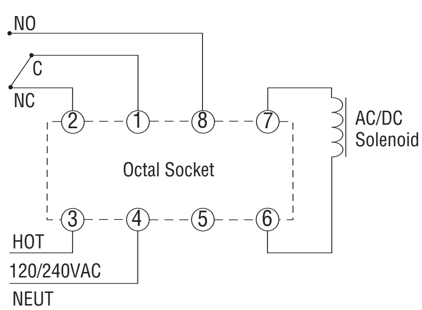
The One Shot Power Supply is UL Listed when used with Warner Electric's octal socket, part no. 6001-101-001, or DIN rail mount octal socket, part no. 6001-101-002 (each purchased separately) and only UL-Recognized when used with other sockets. This unit may be mounted in any convenient position using the two mounting holes provided on the socket.

Actuating the single pole, double throw (SPDT) switch energizes the solenoid coil. Releasing or resetting the switch charges an internal capacitor. A minimum of 20 milliseconds cycle time is required between operations.

Note: Designed for use with actuator limit stop option.

One Shot Octal Socket Control P/N 901-00-019

Connection Diagram



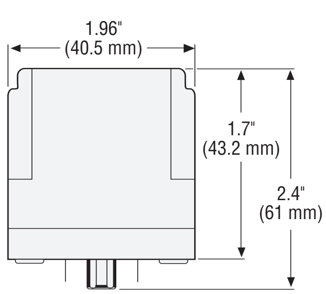
Specifications

Input:	120/240 VAC, 50/60 Hz
Output:	160/290 VDC Peak, 3 Amps Max at 160 VDC output, 5 Amps Max. at 290 VDC Ouput
Ambient Temperature:	+ 32° F to + 122° F 0° C to + 50° C

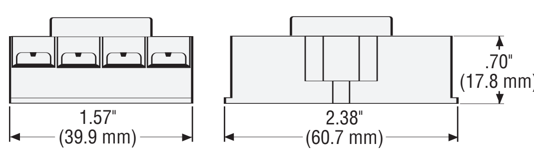
For use with D-Frame coils only.

Solenoid	VAC Input	Maximum Cycle Rate
12 VDC	120	200 CPM
	240	35 CPM
24 VDC	120	300 CPM
	240	40 CPM
90 VDC	120	400 CPM
	240	60 CPM
115 VAC	120	350 CPM
	240	45 CPM

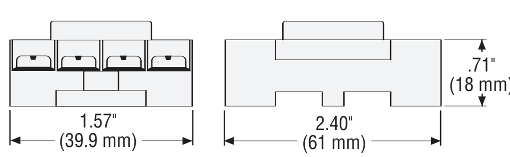
Dimensions (mm)



One Shot Control PN 901-00-019



Octal Socket P/N 6001-101-001



DIN Rail Mount 05 P/N 6001-101-002

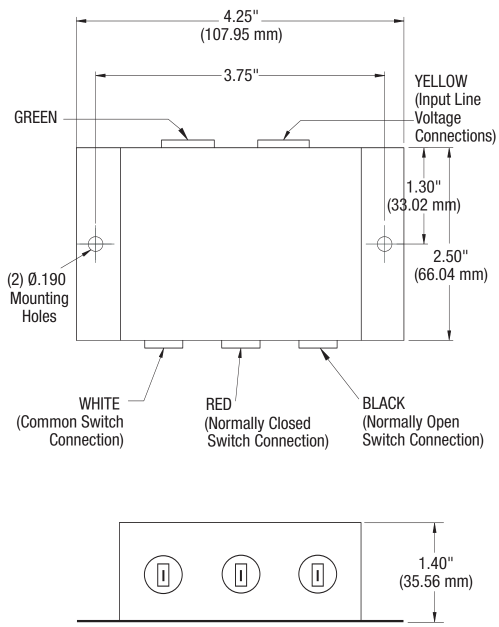
One Shot Power Supply
Model WSCC-101

The One Shot Power Supply is available for use with standard AC as well as DC D-Frame coils. The one shot provides a single overexcite voltage pulse whether the switch is momentarily closed, or held closed. The unit operates on either 120 or 230 AC, 50/60 Hz power and may be mounted in any convenient position by use of two mounting holes for #8-32 screws.

Note: Designed for use with actuator limit stop option and D-Frame coil.

One Shot Control
P/N 901-00-014

Dimensions (mm)

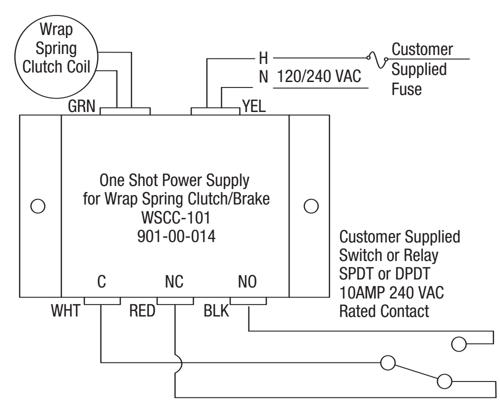


Specifications

Input:	120/240 VAC, 50/60Hz
Output:	160/290 VDC Peak, 3 Amps Max at 160 VDC output, 5 Amps Max at 290 VDC output
Ambient Temperature:	+32°F to +122°F 0°C to +50°C
Terminals:	Amp Inc., Fast-on 250 Series Tabs (.250 X .032), For 14-16AWG AMP #640905-1 For 18-22AWG AMP #640903-1

Solenoid	VAC Input	Maximum Cycle Rate
12 VDC	120	200 CPM
	240	35 CPM
24 VDC	120	300 CPM
	240	40 CPM
90 VDC	120	400 CPM
	240	60 CPM
115 VAC	120	350 CPM
	240	45 CPM

Connection Diagram



Actuating the single pole, double throw (SPDT) switch energizes the solenoid coil. Releasing or resetting the switch charges an internal capacitor. A minimum of 20 milliseconds cycle time is required between operations.

Selection Considerations

Application Analysis

1. Function

The process for establishing the clutch or brake function is illustrated in Step 1 on page 4. In review, the three functions and the appropriate series selections are noted below.

Overrunning (One Way Clutch)
Unidirectional torque transmission with free wheeling in opposite direction.

Selection
WSC (Model O)

Start/Coast-to-Stop (Random Positioning)
Engage/disengage with random stop position.

Selection
WSC (Model SS)

Start/Stop (Single Revolution)
Accurate stop position in single or fraction revolution cycles.

Selection
WSC (Model S)
Standard CB
Super CB

2. Calculate load inertia (WR2)

Use the inertia chart on page 33 to determine the inertia of the application components. To determine WR^2 of a given shaft or disc, multiply the WR^2 from the chart by the length of shaft or thickness of disc in inches. Note: For hollow shafts, subtract WR^2 of the I.D. from the WR^2 of the O.D. and multiply by length.

In order to calculate the inertias of components which are made of material other than steel, use the multipliers found in the conversion chart (right) to establish the inertias of these components.

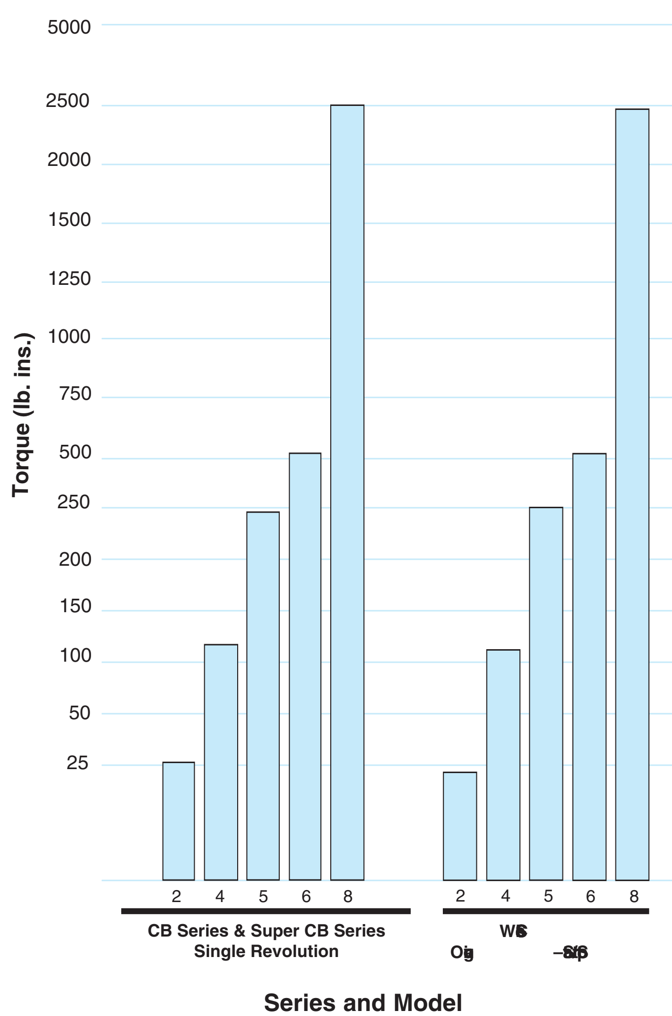
For applications involving machined parts or reflected rotational or linear inertia, please refer to the inertia discussion in the Application Engineering section of Warner Electric's Packaged Electromagnetic Clutches/Brakes Catalog, P-1234.

Inertia Conversion Chart

In order to determine the inertia of a rotating member (shaft, disc, etc.) of a material other than steel, multiply the inertia of the appropriate steel diameter from the chart on page 33 by:

Material	Multiplier
Bronze	1.05
Steel	1.00
Iron	.92
Powdered Metal Bronze	.79
Powdered Metal Iron	.88
Aluminum	.35
Nylon	.17

Torque vs. Model Comparison



Inertia of Steel Shafting (Per Inch of Length or Thickness)

Dia. (in.)	WR^2 (lb.in.^{2})	Dia. (in.)	WR^2 (lb.in.^{2})	Dia. (in.)	WR^2 (lb.in.^{2})
¼	.00011	7	66.816	13	803.52
⅜	.00055	7¼	77.04	13¼	858.24
½	.00173	7½	87.984	13½	924.48
¾	.00864	7¾	100.656	13¾	995.04
1	.0288	8	113.904	14	1068.48
1¼	.072	8¼	128.88	14¼	1147.68
1½	.144	8½	144	14½	1229.75
1¾	.288	8¾	162.72	14¾	1317.6
2	.432	9	182.88	15	1404
2¼	.72	9¼	203.04	16	1815.84
2½	1.152	9½	223.2	17	2314.08
2¾	1.584	9¾	252	18	2910.24
3	2.304	10	277.92	19	3611.52
3½	4.176	10¼	306.72	20	4433.76
3¾	5.472	10½	338.4	21	5389.92
4	7.056	10¾	371.52	22	6492.96
4¼	9.072	11	407.52	23	7757.28
4½	11.376	11¼	444.96	24	9195.84
5	17.28	11½	486.72	25	10827.36
5½	25.488	11¾	529.92	26	12666.24
6	36	12	576	27	14731.2
6¼	42.624	12¼	626.4	28	17036.64
6½	49.68	12½	679.68	29	19604.16
6¾	57.888	12¾	735.84	30	22452.48

Torque & Inertia Values

Model	T_c	t	I_c
CB-2	1.65	0.003	0.0116
CB-4	6.60	0.004	0.0450
CB-5	6.88	0.004	0.1663
CB-6	8.75	0.005	1.221 (0.75 in. bore) 1.138 (1.0 in. bore)
CB-8	20	0.005	9.43 (0.75 in. bore) 9.32 (1.0 in. bore) 8.15 (1.5 in. bore)

Selection Considerations

3. Determine clutch or brake torque value

With the inertia value calculated in Step 2, determine the torque requirement for the function determined in Step 1.

A) For Overrunning and Start-Stop (random start-stop) (WSC Models SS and O)

$$T = \frac{WR^2 \times RPM}{3700 \times t} + \text{friction torque}$$

Where—
T = Torque required from wrap spring
WR^2 = load inertia (Step 2)
RPM = shaft speed at clutch location
t = time to engagement (.003 for clutch)

B) For single revolution applications (CB and WSC Model S)

$$T = \frac{WR^2 \times RPM}{3700 \times t} - \text{friction torque*}$$

Where—

T = torque required from wrap spring
WR^2 = Load inertia (Step 2)
RPM = Shaft speed at clutch or brake location
t = time to disengagement (.0015 for brake)

Find the value of T on the Torque vs. Model Comparison Chart on page 32.

*Frictional (drag) torque is the torque necessary to overcome static friction. It may be measured by a spring-scale or by dead-weights, applied to a known moment arm so gradually as to make inertia negligible. It is that torque found just sufficient to induce motion.

4. Verify selection with unit inertia

From the individual product specifications find the unit inertia of the model selected in Step 3. Add this to the load inertia previously determined to arrive at the total torque requirement.

A) For Overrunning and On-Off (WSC Models SS and O)

$$\text{A) } T_t = \frac{(WR^2_{LOAD} + WR^2_{UNIT})RPM}{3700 \times t} + \text{friction torque}$$

B) For Single Revolution Start-Stop (CB, Super CB and WSC Model S)

$$\text{B) } T_t = \frac{(WR^2_{LOAD} + WR^2_{UNIT})RPM}{3700 \times t} - \text{friction torque}$$

Where–T_t = total system torque
(WR^2_{LOAD}) = load inertia
(WR^2_{UNIT}) = clutch inertia

Find this new torque value on the Torque vs. Model Comparison Chart on page 32 to verify the model selected in Step 3.

Minimum Load Inertia— Super CB and CB Clutch/Brakes

In order to achieve the CB accuracy capability of ±1/2°, a minimum load inertia is required to fully engage the brake spring and disengage the clutch spring. This minimum inertia (I) can be calculated from the accompanying formula and chart:

$$I = \frac{(t)(T_c + T_o)(3700)}{RPM} - I_c$$

I = Minimum inertia required to fully activate the clutch/brake—lb.in.^{2}
t = Time—Seconds
T_c = Torque required to fully activate the clutch/brake—in.lb.
T_o = Drag torque—in.lb.
RPM = Revolutions per minute
I_c = Inertia at the output side of the clutch—lb.in.^{2}

EXAMPLE: CB-6 in a system running at 200 RPM with ¾" bore and 20 in.lb. drag. What inertia is required to fully activate the clutch/brake?

$$I = \frac{(0.005)(8.75 + 20)(3700)}{(200)} - 1.221 = 1.438 \text{ lb.in.}^2$$

NOTE: When calculated inertia is zero or negative, no further action is required. If the calculation result is positive, additional inertia equal to or exceeding the result should be added.

How to determine maximum inertia load of CBs

$$\frac{T \times 3700 \times t}{RPM} = WR^2$$

T = Clutch Torque
t = .0015

Part Numbers

Part Numbers

Bore Size	Voltage	Rotation	Stops 1	Stops 2	Stops 4
CB-2					
0.25"	24 VDC	CW	302-17-001	• 302-17-002	• 302-17-003
		CCW	302-27-001	302-27-011	302-27-003
0.25"	115 VAC	CW	• 302-17-007	302-17-008	302-17-009
		CCW	302-27-007	302-27-008	302-27-009
CB-4					
0.375"	24 VDC	CW	• 304-17-001	• 304-17-011	304-17-007
		CCW	• 304-27-001	• 304-27-007	304-27-026
0.375"	115 VAC	CW	• 304-17-003	• 304-17-008	• 304-17-018
		CCW	• 304-27-003	304-27-015	• 304-27-025
CB-5					
0.5"	24 VDC	CW	• 305-17-001	• 305-17-002	305-17-003
		CCW	• 305-27-001	305-27-002	305-27-003
0.5"	115 VAC	CW	• 305-17-007	305-17-008	305-17-009
		CCW	• 305-27-007	• 305-27-008	• 305-27-009
CB-6					
0.75"	24 VDC	CW	• 306-17-051	• 306-17-074	306-17-162
		CCW	• 306-27-029	• 306-27-046	• 306-27-134
0.75"	115 VAC	CW	• 306-17-053	• 306-17-060	• 306-17-073
		CCW	• 306-27-031	• 306-27-039	• 306-27-045
1.0"	24 VDC	CW	• 306-17-057	306-17-061	306-17-031
		CCW	• 306-27-032	306-27-147	306-27-150
1.0"	115 VAC	CW	• 306-17-059	306-17-062	306-17-075
		CCW	• 306-27-034	• 306-27-044	• 306-27-037
CB-8					
1.25"	24 VDC	CW	• 308-17-101	• 308-17-102	308-17-103
		CCW	• 308-27-101	308-27-102	308-27-103
1.25"	115 VAC	CW	• 308-17-107	308-17-108	308-17-109
		CCW	• 308-27-107	• 308-27-108	308-27-109
1.5"	24 VDC	CW	• 308-17-119	308-17-120	308-17-121
		CCW	308-27-119	308-27-120	308-27-121
1.5"	115 VAC	CW	• 308-17-125	• 308-17-126	308-17-127
		CCW	• 308-27-125	308-27-126	308-27-127
SCB-5					
0.5"	24 VDC	CW	• 325-17-001	325-17-002	325-17-003
		CCW	325-27-001	325-27-002	325-27-003
0.5"	115 VAC	CW	• 325-17-004	325-17-005	325-17-006
		CCW	• 325-27-004	325-27-005	325-27-006
SCB-6					
0.75"	24 VDC	CW	• 326-17-007	• 326-17-008	326-17-009
		CCW	• 326-27-007	326-27-008	326-27-009
0.75"	115 VAC	CW	• 326-17-019	• 326-17-020	326-17-021
		CCW	• 326-27-019	• 326-27-020	326-27-021
1.0"	24 VDC	CW	• 326-17-010	326-17-011	• 326-17-012
		CCW	• 326-27-010	326-27-011	• 326-27-012
1.0"	115 VAC	CW	• 326-17-022	326-17-023	326-17-024
		CCW	• 326-27-022	326-27-023	326-27-024

Control Part #'s
One Shot, 150 Ohms • 901-00-014
One Shot, Octal Socket • 901-00-019

Part Numbers

Bore Size	Voltage	Rotation	Input	Stops 1	Stops 2	Stops 4
SCB-8						
1.25"	24 VDC	CW		• 328-17-019	• 328-17-020	328-17-021
		CCW		• 328-27-019	328-27-020	328-27-021
1.25"	115 VAC	CW		• 328-17-043	328-17-044	328-17-045
		CCW		• 328-27-043	• 328-27-044	328-27-045
1.5"	24 VDC	CW		• 328-17-013	328-17-014	328-17-015
		CCW		328-27-013	328-27-014	328-27-015
1.5"	115 VAC	CW		328-17-037	328-17-038	328-17-039
		CCW		328-27-037	328-27-038	328-27-039
WSC-2						
0.25"	S	CW	Hub	202-10-016	202-10-009	202-10-020
0.25"	S	CCW	Hub	202-20-016	202-20-015	202-20-017
0.25"	S	CW	Shaft	202-30-011	202-30-007	202-30-015
0.25"	S	CCW	Shaft	202-40-014	202-40-008	202-40-017
WSC-4						
0.375"	S	CW	Hub	204-10-001	204-10-016	204-10-010
0.375"	S	CCW	Hub	204-20-004	204-20-008	204-20-016
0.375"	S	CW	Shaft	204-30-001	204-30-007	204-30-009
0.375"	S	CCW	Shaft	204-40-001	204-40-006	204-40-012
WSC-5						
0.5"	S	CW	Hub	205-10-001	205-10-014	205-10-017
0.5"	S	CCW	Hub	205-20-001	205-20-006	205-20-011
0.5"	S	CW	Shaft	205-30-001	205-30-014	205-30-016
0.5"	S	CCW	Shaft	205-40-004	205-40-007	205-40-016
WSC-6						
0.75"	S	CW	Hub	206-10-002	206-10-062	206-10-064
0.75"	S	CCW	Hub	206-20-002	206-20-023	206-20-058
0.75"	S	CW	Shaft	206-30-011	206-30-052	206-30-025
0.75"	S	CCW	Shaft	206-40-002	206-40-014	206-40-020
1.0"	S	CW	Hub	206-10-003	206-10-057	206-10-059
1.0"	S	CCW	Hub	206-20-003	206-20-060	206-20-013
1.0"	S	CW	Shaft	206-30-003	206-30-051	206-30-056
1.0"	S	CCW	Shaft	206-40-013	206-40-023	206-40-025
WSC-8						
1.25"	S	CW	Hub	208-10-004	208-10-027	208-10-028
1.25"	S	CCW	Hub	208-20-001	208-20-028	208-20-030
1.25"	S	CW	Shaft	208-30-001	208-30-021	—
1.25"	S	CCW	Shaft	208-40-013	208-40-015	208-40-017
1.50"	S	CW	Hub	208-10-007	208-10-025	208-10-030
1.50"	S	CCW	Hub	208-20-003	208-20-032	208-20-021
1.50"	S	CW	Shaft	208-30-003	208-30-025	208-30-027
1.50"	S	CCW	Shaft	208-40-003	208-40-020	208-40-022

For CB and SCB Series units, these are the most commonly requested parts – other voltages (such as 12VDC and 90VDC), bores and stop collars are available.

For the WSC Series, other units offering different bores, and overrunning or start/coast-to-stop operation are available.

• Denotes stock items shipped FOB Roscoe or South Beloit, Illinois

Application Data Form

Mail or Fax to:

Warner Electric
Technical Support
449 Gardner Street, South Beloit, Illinois 61080
Phone 815-389-6224 • Fax 815-389-6678 • www.warnerelectric.com
Email: techsupport@warnerelectric.com

Actuation

Mechanical ( )
Electrical ( )
Voltage AC
DC

Motion

Single Revolution ( )
Fractional Revolution ( )
Angle ( )

Accuracy

Start (ms)
Stop (±__°)

Shaft Diameter

Minimum (")
Maximum (")

Technical Data

Speed__________________________(rpm)
Inertia __________________________(lb.in.^{2})
Friction Load Torque _____________(lb.in.)
Cycle Rate ________________ (per second)
Life Expectancy _____________ (hrs or cycles)

Environmental Consideration

____

____

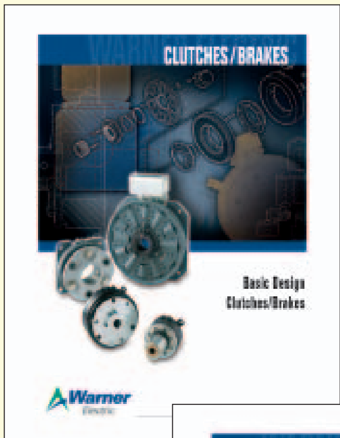
____

____

____

Describe the application function

Other Warner Electric Clutch/Brake Products

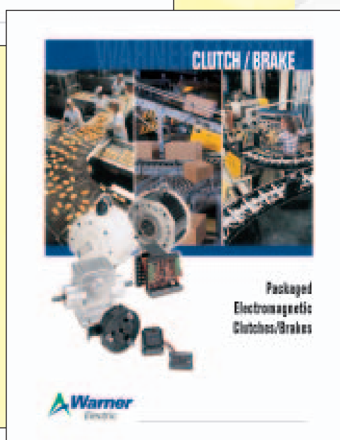


Warner Electric engineers, manufactures and markets, electro-mechanical components and systems for controlling motion. Designed to help increase productivity, our products are incorporated into new equipment designs and are used to upgrade performance on machines already in service. With an international organization of stocking distributors and sales centers, Warner Electric offers the most extensive network of its kind for locally available products and professional, on-the-spot customer service.

Basic Design Clutches/Brakes

- Electromagnetic clutches and brakes
- Custom design with off-the-shelf components
- Maximum mounting versatility
- Wide range of sizes, torque ratings and configurations
- Ideal for space restrictive applications

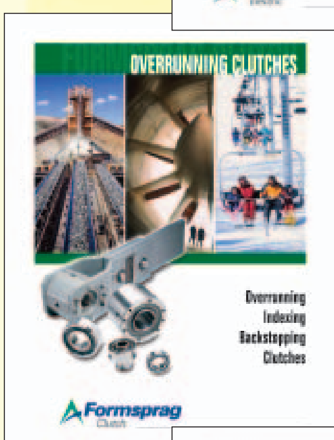
Catalog P-1264



Packaged Electromagnetic Clutches/Brakes

- Available as clutches, brakes, or clutch/brake combinations
- Factory assembled and aligned for out-of-the-box performance
- Quick and easy installation
- Wide range of sizes, torque ratings and mounting configurations
- Designed to mate easily with industry standard motors, reducers and other components

Catalog P-1234



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Torque loads to 700,000 lb. ft. (949200 Nm)

- Overrunning, indexing and backstopping applications
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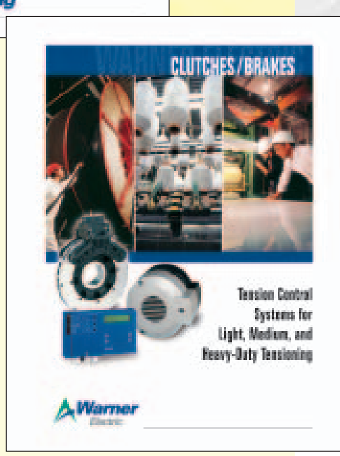
- More torque, less space
- Full sprag complement with infinitely changing wear parts

Catalog P-956



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- Complete system for unwind applications
- Patented, new technology electric brakes
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Catalog P-771

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For sales office:
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Nuttall Gear and Delroyd Worm Gear

Worm Gear and Helical Speed Reducers

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Thailand	66 2 322 0481
Australia	612 9894 0133
S. Africa	27 11 918 4270

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