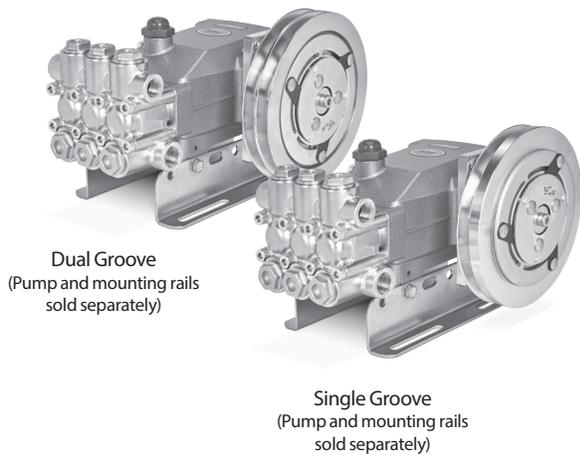


# DATA SHEET

## INDUSTRIAL CLUTCHES



- Models: 34961, 34964** Use with Pump Models: 280, 281, 290, 291, 331, 333, 430, 431, 230, 240, 270, 231, 241, 271, 237, 247, 277
- Models: 34960, 34965** Use with Pump Models: All 3CP Series Pumps
- Models: 34962, 34963** Use with Pump Models: 323, 390, 310, 340, 350, 311, 341, 351, 317, 347, 357
- Models: 34970, 34980** Use with Pump Models: All 5CP Series Pumps



### FEATURES

- A precision-machined aluminum clutch plate ensures proper alignment and secure mounting.
- High-strength forged rotor, hub and armature ensure maximum torque and long service life.
- A projection-welded coil assembly adds strength and stability in high-vibration applications.
- Special e-coating delivers excellent corrosion resistance and long-lasting protection.
- Bearings use an advanced lubricant that maintains consistent viscosity at high temperatures and resists water in harsh environments.

SPECIFICATIONS	34960	34962	34964	34963
	34961	34970	34965	34980
Pulley Grooves	1	1	2	2
Shaft Diameter	16.5 mm	20 mm	16.5 mm	20 mm

COMMON SPECIFICATIONS	U.S. Measure	Metric Measure	
Pulley Diameter	7"	177.8 mm	
Belt Type	A	A	
Torque	75 ft-lbs	101.7 Nm	
Watts	44	44	
Amps	3.6	3.6	
Voltage Required	12V DC	12V DC	
Weight	34960	9.3 lbs	4.2 kg
	34961	9.4 lbs	4.3 kg
	34962	9.4 lbs	4.3 kg
	34963	9.1 lbs	4.1 kg
	34964	9.4 lbs	4.3 kg
	34965	9.4 lbs	4.3 kg
	34970	9.4 lbs	4.3 kg
34980	9.3 lbs	4.2 kg	
Dimensions	7.0 x 2.07"	177.8 x 52.6 mm	

## SELECTION

Select a clutch from the list on the top of page one that is available for your pump model. Then, choose a clutch model that matches the number of grooves required for the drive package. The specified drive package should also consider the clutch's diameter and maximum torque rating.

## INSTALLATION

1. Remove the four bearing cover screws on pump and discard.
2. Line up the clutch plate with the bearing cover screw holes with the counter sunk holes facing out. Install lockwashers onto flat head screws. Apply Loctite® 242® to threads of the flat head screws. Torque per specifications. Secure clutch plate to pump with four (4) flat head screws. (M6–3CP, 3FR, 3PFR, 4FR, 5FR, 5PFR) (M8–5CP)

**Note:** Do not use pump bearing cover screws.

3. Mount the coil assembly onto the clutch plate and secure with four flanged centering screws (¼" – 20 x ⅜").
4. Lubricate the pump shaft with anti-seize lubricant and insert the key into the pump shaft.
5. Slide the rotor and armature assembly over shaft. Be certain keyway of pump is aligned with armature keyway. Secure with flat washer and shaft screw (M8 x 25) and torque to specifications.
6. Slide flat washer (M8) over shaft screw. Apply Loctite® and 242® to threads of shaft screw. Torque per specifications.
7. Connect the lead wire to the positive side of the electrical control circuit. Also be certain there is an adequate grounded connection to the coil assembly plate.
8. Engage and disengage the clutch to ensure proper function. If full load is required initially from the pump, allow clutch to engage 20–50 cycles before commencing normal operation for adequate burnishing.

**Note:** Follow standard belt mounting and center distance procedures to determine drive pulley size, speed and horsepower per belt.

## OPERATION

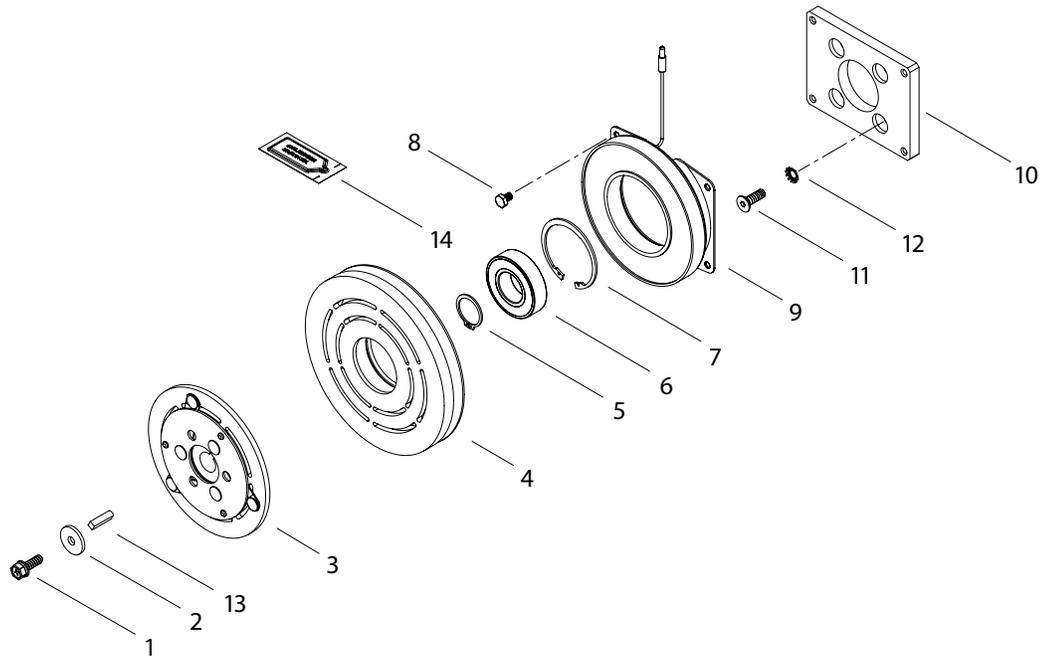
The clutch works with a flow switch, pressure switch or a manual on/off switch installed in the system and connected to a 12V DC power supply to supply an electrical control circuit to the clutch. During operation, the control circuit engages the clutch, which turns the pump shaft. When the trigger gun is released, or the operator manually turns the system off, the control circuit breaks, disengaging the clutch and stopping the pump's shaft.

Loctite® and 242® are registered trademarks of Henkel Corporation.

## TORQUE REQUIREMENTS

ITEM	Thread Size	Tool Size	in-lbs	Torque ft-lbs	Nm
Plate Screws: 3CP Series, 280, 281, 290, 291, 331, 333, 430, 431, 230, 240, 270, 231, 241, 271, 237, 247, 277, 323, 390, 45, 310, 340, 350, 311, 341, 351, 317, 347, 357	M6	M8 Hex	55	4.6	6.2
Plate Screws: 5CP Series	M8	M5 Allen	115	9.6	13
Coil Assembly Screws	¼"	⅜" Hex	55	4.6	6.2
Shaft Screw	M8	M6 Allen or M13 Hex	115	9.6	13

## EXPLODED VIEW



## PARTS LIST

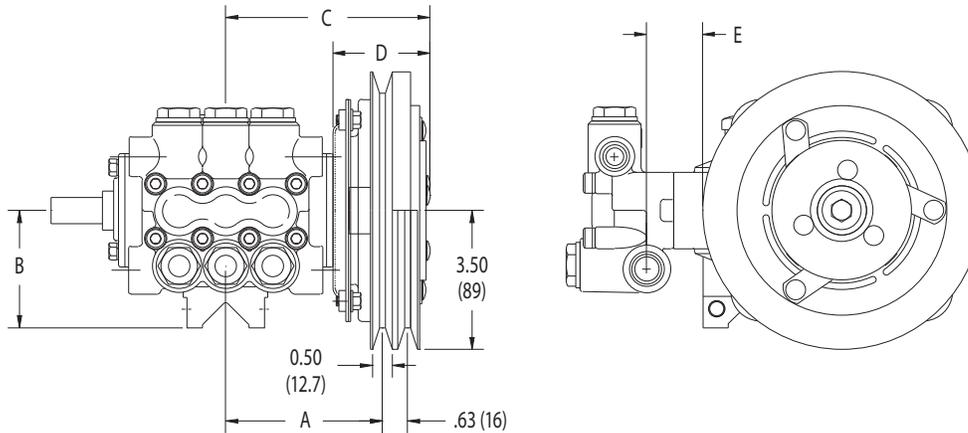
ITEM	MODEL NUMBER								MATL	DESCRIPTION	QTY
	34960	34961	34962	34963	34964	34965	34970	34980			
1	126544	126544	126544	126544	126544	126544	126544	126544	STCP R	Screw, Shaft, SEMS (M8 x 25)	1
2	—	—	126579	126579	—	—	126579	126579	STZP R	Washer, Flat (M8)	1
3	—	—	—	—	—	—	—	—	—	Armature	1
4	—	—	—	—	—	—	—	—	—	Rotor	1
5	—	—	—	—	—	—	—	—	—	Seal	1
6	—	—	—	—	—	—	—	—	—	Bearing	1
7	—	—	—	—	—	—	—	—	—	Ring, Snap	1
8	—	—	—	—	—	—	—	—	STZP	Screw, Coil Assembly	4
9	—	—	—	—	—	—	—	—	—	Assembly Coil	1
10	—	—	—	—	—	—	32457	32457	AL	Plate, Clutch	1
11	—	—	—	—	—	—	992877	992877	S	Screw (M6 x 16, M8 x 25))	4
12	—	—	—	—	—	—	992879	992879	S	Lockwasher (M8)	4
13	30089	30089	30057	30057	30089	30089	30057	30057	STL	Key	1
14	6106	6106	6106	6106	6106	6106	6106	6106	—	Lubricant, Anti-Seize (2 ml)	1

R Components comply with RoHS Directive. Material Codes (Not Part of Part No.):  
 AL=Aluminum S=304SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

**Note:** Standard shaft screw is a SEMS combination, replacement is a hex head  
 Apply blue Loctite® 242® to threads when using replacement screw.

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## DIMENSIONAL



P/N	GROOVES	PUMP FRAME	A	B	C	D	E
34960	1	3CP Series	3.94 (100)	2.95 (75)	5.14 (131)	2.44 (62)	1.41 (36)
34965	2	3CP Series	3.94 (100)	2.95 (75)	5.14 (131)	2.44 (62)	1.41 (36)
34961	1	280, 281, 290, 291, 331, 333, 430, 431, 230, 240, 270, 231, 241, 271, 237, 247, 277	3.94 (100)	2.95 (75)	5.14 (131)	2.34 (59)	1.44 (37)
34964	2	280, 281, 290, 291, 331, 333, 430, 431, 230, 240, 270, 231, 241, 271, 237, 247, 277	3.94 (100)	2.95 (75)	5.14 (131)	2.34 (59)	1.44 (37)
34962	1	323, 390, 45, 310, 340, 350, 311, 341, 351, 317, 347, 357	4.47 (114)	2.75 (70)	5.67 (144)	2.41 (61)	3.21(82)
34963	2	323, 390, 45, 310, 340, 350, 311, 341, 351, 317, 347, 357	4.47 (114)	2.75 (70)	5.67 (144)	2.41 (61)	3.21(82)
34970	1	5CP Series	4.39 (112)	2.76 (70)	5.59 (142)	2.50 (64)	2.18 (55)
34980	2	5CP Series	4.39 (112)	2.76 (70)	5.59 (142)	2.50 (64)	2.18 (55)

## TROUBLESHOOTING

Problems	Probable Cause	Solution
Clutch will not engage	<ul style="list-style-type: none"> <li>Loose positive ground or connection</li> <li>Improper voltage</li> </ul>	<ul style="list-style-type: none"> <li>Tighten positive or ground connections</li> <li>Confirm 12V DC</li> </ul>
Squealing belt(s)	<ul style="list-style-type: none"> <li>Belt slippage or belt tension</li> </ul>	<ul style="list-style-type: none"> <li>Tighten belt(s) or replace</li> </ul>
Short belt life	<ul style="list-style-type: none"> <li>Side-to-side alignment and belt tension</li> </ul>	<ul style="list-style-type: none"> <li>Realign belt, tighten or replace</li> </ul>
Excessive noise when clutch is disengaged	<ul style="list-style-type: none"> <li>Worn bearing</li> </ul>	<ul style="list-style-type: none"> <li>Replace clutch assembly</li> </ul>
Clutch cycling	<ul style="list-style-type: none"> <li>Inadequate voltage</li> <li>Worn rotor or discolored rotor surface</li> </ul>	<ul style="list-style-type: none"> <li>Confirm voltage</li> <li>Replace clutch assembly</li> </ul>
Scraping noise when clutch engaged and/or disengaged	<ul style="list-style-type: none"> <li>Improper alignment of coil and rotor assembly</li> </ul>	<ul style="list-style-type: none"> <li>Realign coil and rotor assembly</li> </ul>

### ⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. Cat Pumps does not assume any liability or responsibility for the operation of a customer's high-pressure system. Read all CAUTIONS and WARNINGS before commencing service or operation of any high-pressure system. The CAUTIONS and WARNINGS are included in each Service Manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at [www.catpumps.com/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)