

# DATA SHEET

## NEMA BELL HOUSINGS AND FLEXIBLE COUPLERS



**Bell Housing Models: 76056.3CP, 76056.3FR, 76056.5CP, 56C/145TC 76056.5FR, 76056.7CP**

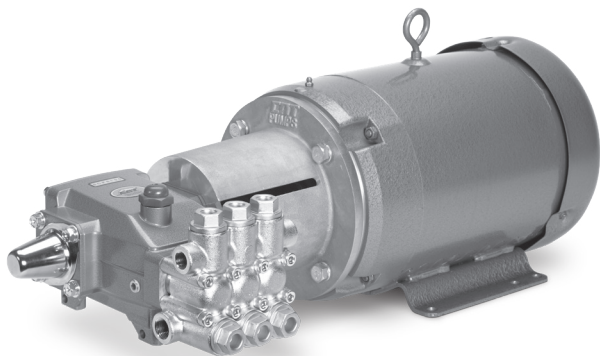
**Bell Housing Models: 76184.3CP, 76184.3FR, 76184.5CP, 182/184TC 76184.5FR, 76184.7CP, 76184.7FR**

**Bell Housing Models: 76215.3CP, 76215.3FR, 76215.5CP, 213/215TC 76215.5FR, 76215.7CP, 76215.7FR**

**Bell Housing Models: 76256.5CP, 76256.7CP, 76256.7FR 254/256TC**

**Bell Housing Models: 76286.7CP, 76286.7FR 284/286TC**

**Flexible Coupler Models: 8210, 8215, 8217, 8218, 8220, 8225, 8230, 8260, 8261, 8270, 8275, 8370, 8375, 8380, 8389**



Bell Housing Assembly and Flexible Coupler Assembly  
(Model 5CP2150W, shaft protector and motor sold separately)

### FEATURES

- Bell housing design eliminates the need for belt selection, sizing and adjustments.
- Creates optimal shaft alignment, which reduces side-loading for quiet, trouble-free operation.
- Bell Housing is cast from lightweight, high-strength aluminum alloy.
- Compact direct mounting design reduces the space required compared to belt or gearbox drive assemblies.
- Ease of assembly reduces fabrication costs.
- Available as a completely assembled unit from Cat Pumps for fast and convenient assembly or as individual components.
- Designed to fit 3CP, 3 Frame, 5CP, 5 Frame, 7CP and 7 Frame pumps.

# PARTS LIST

## Bell Housing Assemblies

Pump Series	Models	Motor Frame	Bell Housing Assemblies
3CP Series	All 3CP Models	56C-145TC	76056.3CP
		182/184TC	76184.3CP
		213/215TC	76215.3CP
3FR Series	230, 231, 237, 240, 241, 247, 270, 271, 277	56C-145TC	76056.3FR
		182/184TC	76184.3FR
		213/215TC	76215.3FR
5CP Series	All 5CP Models	56C-145TC	76056.5CP
		182/184TC	76184.5CP
		213/215TC	76215.5CP
		254/256TC	76256.5CP
5FR Series	30, 301, 340, 341, 347, 350, 351, 357	56C-145TC	76056.5FR
		182/184TC	76184.5FR
		213/215TC	76215.5FR
7CP Series	All 7CP Models	56C-145TC	76056.7CP
		182/184TC	76184.7CP
		213/215TC	76215.7CP
		254/256TC	76256.7CP
7FR Series	56-60, 700-760, 781-786	284/286TC	76286.7CP
		182/184TC	76184.7FR
		213/215TC	76215.7FR
		254/256TC	76256.7FR
		284/286TC	76286.7FR

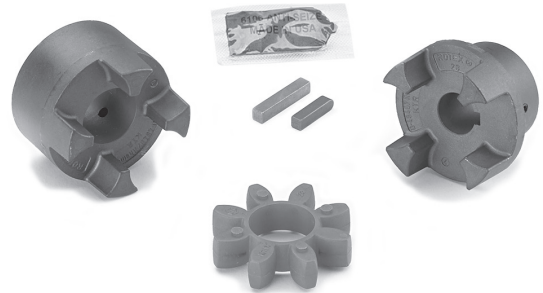


76215. 5FR Bell Housing Assembly Shown

Bell Housing Assemblies include bell housing and mounting hardware.

## Flexible Coupler Assemblies

Pump Series	Motor Frame	Flexible Coupler Assemblies	Shaft to Shaft	Torque Rating (ft-lbs)
3CP & 3FR	56C	8215	16.5mm x 5/8"	27
	145TC	8210	16.5mm x 7/8"	27
	182/184TC	8220	16.5mm x 1 1/8"	27
	182/184TC	8225	16.5mm x 1 1/8"	74
5CP & 5FR	213/215TC	8270	16.5mm x 1 3/8"	92
	56C	8261	20mm x 5/8"	74
	145TC	8260	20mm x 7/8"	74
	182/184TC	8230	20mm x 1 1/8"	74
7CP & 7FR	213/215TC	8275	20mm x 1 3/8"	92
	254/256TC	8217	20mm x 1 5/8"	150
	56C-145TC	8218	24mm x 5/8"	74
	182/184TC	8370	24mm x 1 1/8"	74
	213/215TC	8375	24mm x 1 3/8"	74
	254/256TC	8380	24mm x 1 5/8"	150
	284/286TC	8389	24mm x 1 7/8"	150



16.5mm & 20mm Couplers with Set Screws



24mm Couplers with Cross-Clamp Screw

## PARTS LIST

### Flexible Coupler Assemblies

	8215	8210	8218	8220	8225	8270	8261	8260	8230	8275	8217	8370	8375	8380	8389
Motor Frame	56C	145TC	56C	182/ 184TC	182/ 184TC	213/ 215TC	56C	145TC	182/ 184TC	213/ 215TC	254/ 256TC	182/ 184TC	213/ 215TC	254/ 256TC	284/ 286TC
Shaft to Shaft Dimension	16.5mm to 5/8"	16.5mm to 7/8"	24mm to 5/8"	16.5mm to 1 1/8"	16.5mm to 1 1/8"	16.5mm to 1 3/8"	20mm to 5/8"	20mm to 7/8"	20mm to 1 1/8"	20mm to 1 1/8"	20mm to 1 1/8"	24mm to 1 1/8"	24mm to 1 3/8"	24mm to 1 3/8"	24mm to 1 7/8"
Coupler Half, Motor	38283	38289	38295	38285	38286	38292	38295	38293	38286	38292	31543	31528	31533	31543	996698
Coupler Half, Pump	38284	38284	38291	38284	38290	38290	38287	38287	38287	38287	999617	31519	31519	31538	31538
Pump Shaft Key	5mm	5mm	8mm	5mm	5mm	5mm	6mm	6mm	6mm	6mm	6mm	8mm	8mm	8mm	8mm
Key, Pump	30047	30047	30067	30047	30047	30047	30057	30057	30057	30057	30057	30067	30067	30067	30067
Spyder	34406	34406	34410	34406	34410	991903	34410	34410	34410	991903	31544	34410	34410	31544	31544
Spyder Color	Purple	Purple	Purple	Purple	Purple	Green	Purple	Purple	Purple	Green	Purple	Purple	Purple	Purple	Purple

## INSTALLATION

### Bell Housing and Flexible Coupler

1. Separate the parts included in the bell housing and/or flexible coupler assembly packages. Both assemblies are offered in separate kits to cover the various torque ratings and pump models.
2. Remove the bearing cover screws from the extended shaft side of the pump and discard the screws. New screws are supplied in the bell housing assembly.

**Note:** Before mounting the bell housing to a 7 or 8 frame plunger pump, ensure all eight (8) crankcase holes are tapped and the bearing race, O-ring and oil seal are removed from the cover and transferred to the new bearing cover. See Tech Bulletin 121 for more information.

3. From the side where the bearing cover screws are removed, slide the small end of the bell housing over the pump shaft with the Cat Pumps logo facing up.
4. Install conical lock washers. Apply Loctite® 242® to the threads of the screws provided in the assembly and torque to 50 in-lbs, 5.7 N-m for M6 screws and 115 in-lbs, 13 N-m for M8 screws in an alternating rotation.
5. Apply a light film of anti-seize lubricant to the pump shaft.
6. Install the key on the pump shaft.
7. Separate 16.5mm, 20mm or 24mm half of the flexible coupler with the spyder.
8. Remove two (2) set screws from the 16.5mm and 20mm coupler half or one (1) cross-clamp screw from the 24mm coupler half. Apply Loctite® 242® to the threads and then reinstall into the coupler half.
9. Slide the coupler half onto the pump shaft. Seat completely against the step on the crankshaft.
10. Insert a 3mm hex wrench into each set screw and tighten enough to hold the key and coupler in place. Tighten these screws to torque specifications in the final step.

**Note:** One set screw is at the keyway, and the second is at 90° from the keyway.

11. Apply a light film of anti-seize lubricant to the motor shaft.
12. Install the motor key (supplied with motor) onto the motor shaft keyway.
13. Remove two (2) set screws from the motor coupler half or one (1) cross-clamp screw from the motor coupler half. Apply Loctite® 242® to threads and then reinstall into the coupler half.
14. Slide the motor half of the flexible coupler containing the spyder onto the motor shaft.
15. Mount the pump with the bell housing and coupler half onto the coupler half of the motor, lining up the two halves.
16. Apply Loctite® 242® to the threaded area of the bolts, slip lock washers onto bolts and thread through the flange into the motor. Torque to 110 in-lbs, 12.5 N-m for 3/8" bolts or 300 in-lbs, 34 N-m for 1/2" bolts.
17. To secure flexible coupling with a set screw, insert a screwdriver into the bell housing and press the flexible coupler towards the pump.
18. Rotate the motor shaft so set screws are lined up with bell housing opening.
19. Insert a 3mm hex wrench into each coupler set screw and torque to 125-150 in-lbs, 14-17 N-m.

**Note:** Flexible coupler halves should not contact each other. Ensure there is a small gap between the two coupler halves.

**Note:** One set screw is located at the keyway and the second at 90° from the keyway.

**Note:** Flexible Couplings that fit the 7CP and 7FR plunger pumps do not have set screws. They have a cross-clamp socket head screw (6mm hex). Torque to 25 ft-lbs, 34 N-m.

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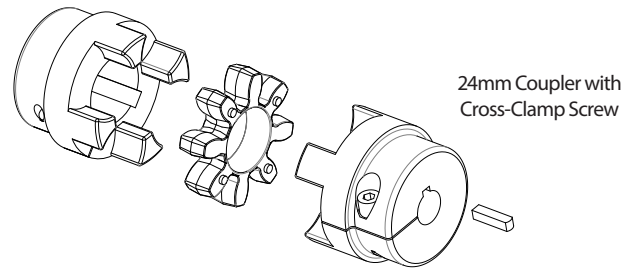
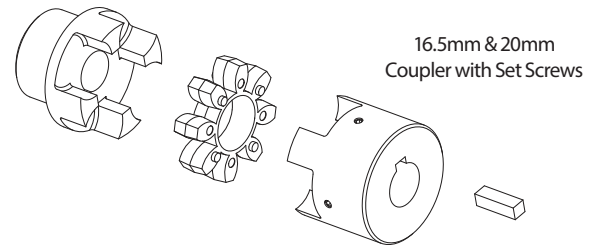
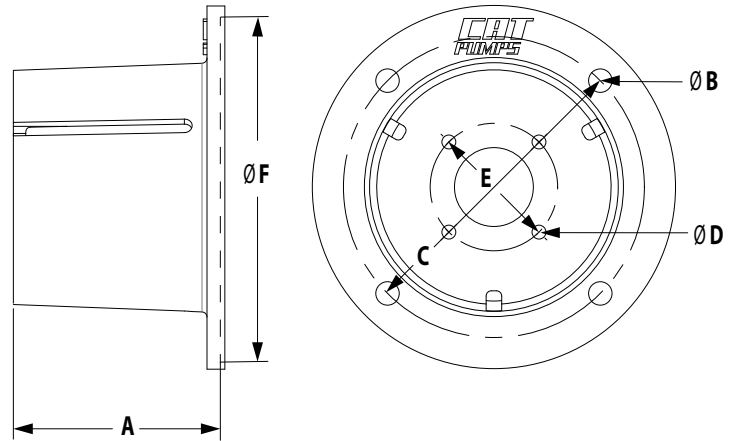
### Torque Specifications Chart

Screw	Thread Size	Tool	in-lbs	ft-lbs	N-m
Bell Housing to Pump	M6	4mm Hex Wrench	50	4.2	5.7
Bell Housing to Pump	M8	5mm Hex Wrench	115	9.6	13
Bell Housing to Motor	3/8"	9/16" Combination Wrench	110	9.2	12.5
Bell Housing to Motor	1/2"	3/4" Combination Wrench	300	25	34
Flex Coupler (Set Screws)	M4	3mm Hex Wrench	125-150	10.4-12.5	14-17
Flex Coupler (Cross-Clamp Screw)	M8	6mm Hex Wrench	300	25	34

# DIMENSIONAL DRAWINGS

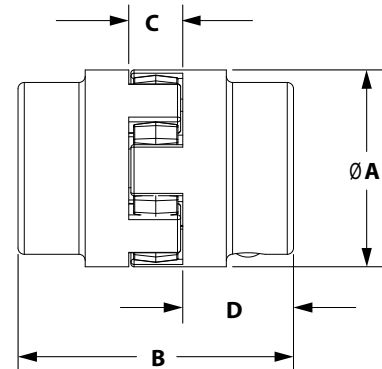
## Bell Housing Assemblies

MODEL	A	ØB	C (BC)	QTY	ØD	E (BC)	QTY	ØF
76056.3CP	4.145"	.438"	5.875"	4	.252"	2.992"	4	4.500"
76056.3FR	4.145"	.438"	5.875"	4	.252"	2.520"	4	4.500"
76056.5CP	4.145"	.438"	5.875"	4	.335"	3.071"	4	4.500"
76056.5FR	4.145"	.438"	5.875"	4	.252"	2.953"	4	4.500"
76056.7CP	4.145"	.438"	5.875"	4	.252"	3.220"	8	4.500"
76184.3CP	5.000"	.565"	7.250"	4	.252"	2.992"	4	8.500"
76184.3FR	5.000"	.565"	7.250"	4	.252"	2.520"	4	8.500"
76184.5CP	5.000"	.565"	7.250"	4	.335"	3.071"	4	8.500"
76184.5FR	5.000"	.565"	7.250"	4	.252"	2.953"	4	8.500"
76184.7CP	5.000"	.565"	7.250"	4	.335"	3.858"	8	8.500"
76184.7FR	5.000"	.565"	7.250"	4	.252"	3.780"	8	8.500"
76215.3CP	5.925"	.565"	7.250"	4	.252"	2.992"	4	8.500"
76215.3FR	5.925"	.565"	7.250"	4	.252"	2.520"	4	8.500"
76215.5CP	5.925"	.565"	7.250"	4	.335"	3.071"	4	8.500"
76215.5FR	5.925"	.565"	7.250"	4	.252"	2.953"	4	8.500"
76215.7CP	5.925"	.565"	7.250"	4	.335"	3.858"	8	8.500"
76215.7FR	5.925"	.565"	7.250"	4	.252"	3.780"	8	8.500"
76256.5CP	6.925"	.565"	7.250"	4	.335"	3.071"	4	8.500"
76256.7CP	6.925"	.565"	7.250"	4	.335"	3.858"	8	8.500"
76256.7FR	7.155"	.565"	7.250"	4	.252"	3.780"	8	8.500"
76286.7CP	7.875"	.565"	9.000"	4	.335"	3.858"	8	10.500"
76286.7FR	8.105"	.565"	9.000"	4	.252"	3.780"	8	10.500"



## Flexible Coupler Assemblies

MODEL	ØA	B	C	D
8210	2.17"	3.04"	.68"	1.18"
8215	2.17"	3.04"	.68"	1.18"
8218	2.56"	3.53"	.77"	1.38"
8220	2.17"	3.04"	.68"	1.18"
8225	2.56"	3.53"	.77"	1.38"
8230	2.56"	3.53"	.77"	1.38"
8260	2.56"	3.53"	.77"	1.38"
8261	2.56"	3.53"	.77"	1.38"
8270	2.56"	3.53"	.77"	1.38"
8275	2.56"	3.53"	.77"	1.38"
8370	2.56"	3.53"	.77"	1.38"
8375	2.56"	3.53"	.77"	1.38"
8217	3.15"	4.41"	.86"	1.77"
8380	3.15"	4.41"	.86"	1.77"
8389	3.15"	4.41"	.86"	1.77"



### ⚠ 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)