

# Submersible Motors



**Yeomans  
Chicago  
Corporation**

## PREMIUM FEATURES

Yeomans Chicago Corporation manufactures premium quality, industrial duty, submersible motors designed for wet-pit and dry-pit applications. The rugged design and superior features provide long, reliable service life under the most demanding operating conditions.

### Submersible TENV IP68

- Designed for submerged operation at differential water pressure up to 150 feet
- Available with Explosion proof rating (FM Listing) - Rated for Class 1, Groups C&D hazardous locations
- 1/2HP ~ 150HP; Frame sizes 140, 180, 210, 250, 320 and 360

### Dry-Pit Submersible - TENV IP68 "CLC" (Closed-Loop-Cooled)

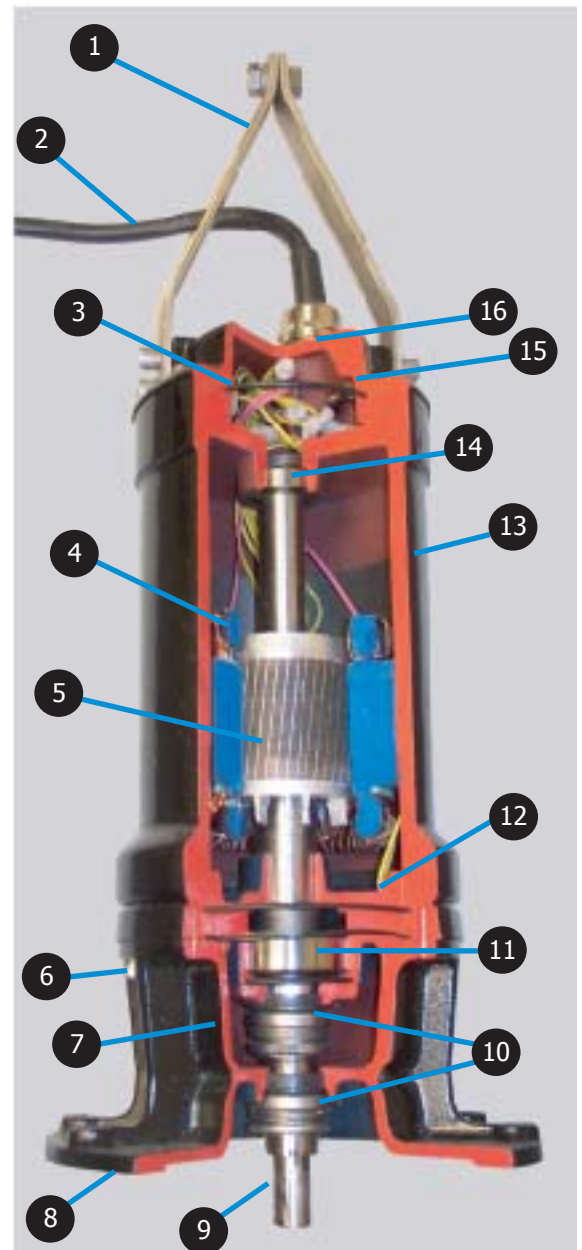
- Self-contained patented closed-loop cooling system eliminates jacket clogging and overheating problems commonly associated with other designs. Eliminates periodic cleaning and flushing of the cooling passages. No external water supply required. Fluid flow across bottom of motor seal housing is all that is required for effective cooling at full load.
- 3HP ~ 200HP; Frame sizes 210, 250, 320 and 360

### Features Common to Both T types

- Designed and rated per NEMA, IEEE, and ANSI standards
- Wound stator core is press fit into a rugged cast iron housing for true and positive alignment as well as efficient heat transfer
- Dry-running self-cooled design with non-hygroscopic Class F (155 C) insulation system rated for continuous duty in 40 C ambient liquid with a 1.15 S.F.
- Tandem mechanical seals, standard Type 21, for convenient low-cost replacement
- Solid-block seal ring design for superior performance and long wear life
- 416 Stainless Steel shaft, provides high tensile and yield strength; designed for minimum shaft deflection; permanently lubricated bearings
- Auto-reset thermostats and moisture detection sensors are standard; dual-probe moisture detection sensors to eliminate false alarms
- Terminal board wiring connection for easy replacement of the cap/cable assembly (Frame 180 and above)
- Rugged U.L. listed power/control cables are resistant to oil, cuts and abrasion; non-wicking cable entry provides positive protection against moisture penetration

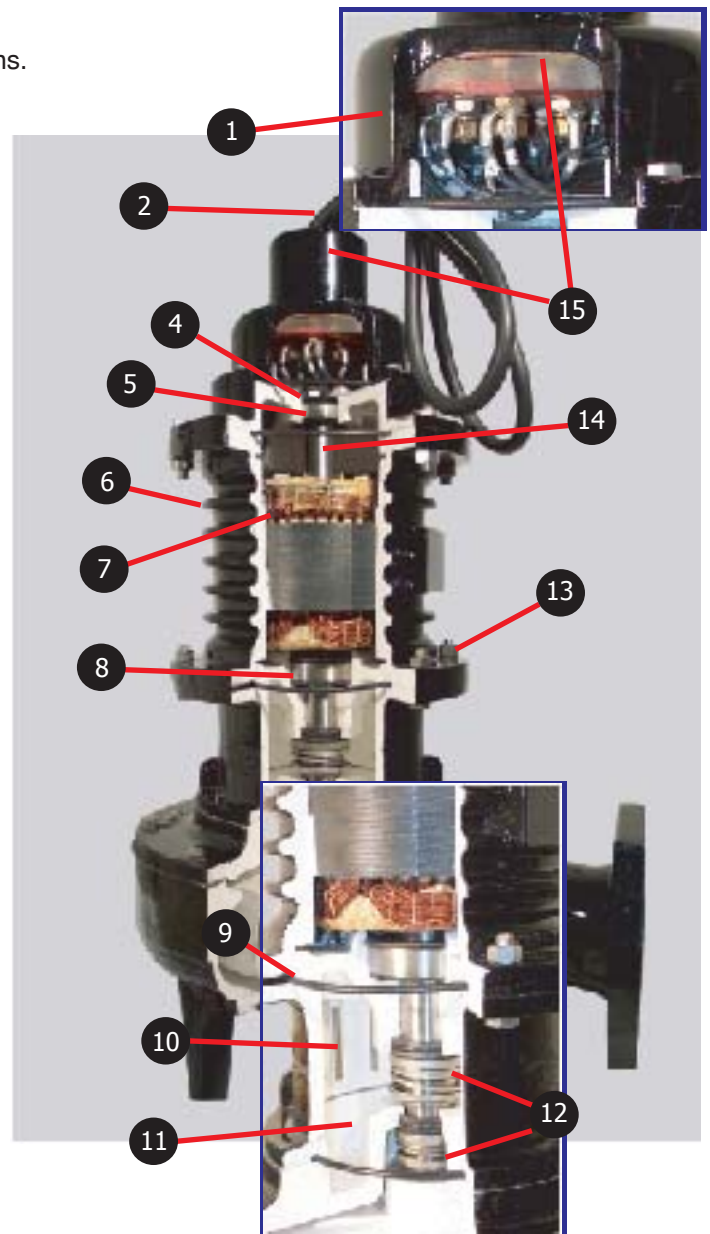
## 140 Frame - Submersible TENV IP68

- 1 - Rigid lifting handle
- 2 - Type SOOW power and control cable resists rough handling and abrasion. U.L. Listed and rated for 90°C.
- 3 - Buna-NO-ring seals for maximum protection against leaking
- 4 - Thermal overload protection standard
- 5 - Die cast rotor core
- 6 - Stainless steel fasteners provided throughout assembly
- 7 - Sealed oil chamber does not require constant monitoring of oil level.
- 8 - Industry standard flange mount and shaft extension ensure mechanical interchangeability
- 9 - One piece solid stainless steel shaft
- 10 - Tandem (dual) Shaft Seal System; standard silicon carbide
- 11 - Heavy-duty thrust bearing; locked to prevent axial movement
- 12 - Two-wire / two-probe moisture detection system insures a positive current path to and from probes; eliminates false alarms.
- 13 - Integral cast iron housing for maximum heat dissipation.
- 14 - Heavy-duty radial bearing
- 15 - Large Cap/Cable Chamber; removeable for convenient voltage reconnections
- 16 - Neoprene grommet and complete epoxy encapsulation provide for a true non-wicking cable entry. An isolating cable chamber is not needed.



## 180 Frame and above - Submersible TENV IP68

- 1 - Large Cap/Cable Chamber with Terminal Board for lead connections.
- 2 - Type SEOW-A power and control cable resists rough handling and abrasion. U.L. Listed and rated for 90°C.
- 3 - Rigid lifting handle (not illustrated).
- 4 - Expansion area for bearings provides clearance for Rotor/Pump shaft expansion.
- 5 - Heavy-duty radial bearing.
- 6 - Integral cast iron finned housing for maximum heat dissipation.
- 7 - Thermal overload protection standard.
- 8 - Heavy-duty thrust bearing; locked to prevent axial movement.
- 9 - Registered machine fits and positive sealing O-ring seals at all joints; easy replacement.
- 10 - Two-wire / two-probe moisture detection system insures a positive current path to and from probes; eliminates false alarms.
- 11 - Sealed oil chamber does not require constant monitoring of oil level.
- 12 - Tandem (dual) Shaft Seal System; standard silicon carbide
- 13 - Stainless steel fasteners provided throughout assembly.
- 14 - One-piece solid stainless steel shaft.
- 15 - Neoprene grommet and complete epoxy encapsulation provide for a true non-wicking cable entry. An isolating cable chamber is not needed.



## Dry-Pit Submersible - TENV IP68 "CLC" (Closed-Loop-Cooled)

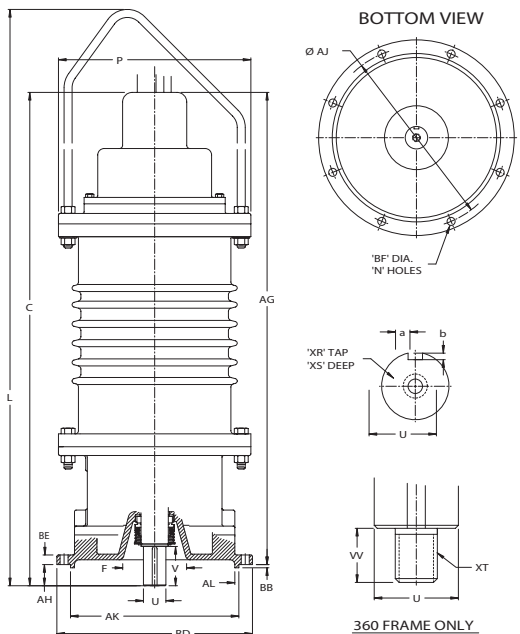
### The patented "CLC" closed-loop cooled dry-pit submersible motor...

- Eliminates the need for external connection of cooling water or other fluids
- Does not utilize by-pass circulation of sewage water for cooling, unlike "sewage cooled" designs
- Eliminates the need for periodic flushing and steam-cleaning commonly associated with "sewage cooled" designs
- Eliminates motor overheating and premature insulation failure due to clogging and grease build-up in the cooling passages
- Motor stator housing is one integral casting, There are no bolted-on jackets or external seals to corrode, wear or leak. Casting is of heavy cast iron throughout
- Incorporates the same "construction features" as the YCC Submersible Motor for bearing design, shaft strength, mechanical seal system and cap/cable system





# DIMENSIONS



## YCC Submersible Motors

FRAME	MOUNTING FLANGE	C	F	P	V	U	XR	XS	XT	VV	KEYWAY
											a b
YC140	140	20 3/4	4 1/8	7 7/8	1 1/4	.8750 <sup>+0.000</sup> <sub>-.0005</sub>	3/8-16	7/8			3/16 3/32
YC180	140	25 7/8	3	12 1/8	2 1/16	1.250 <sup>+0.000</sup> <sub>-.0005</sub>	3/8-16	1 3/8			1/4 1/8
	180										
	210										
YC210	210	28 3/4	3 1/4	13 1/4	2	1.4380 <sup>+0.000</sup> <sub>-.0005</sub>		1 1/4			
YC250	210	38 1/2	5	15	3 1/16	1.7500 <sup>+0.000</sup> <sub>-.0005</sub>	5/8-11	1 3/8			3/8 3/16
	250										
YC320	250	50 3/16	7 3/8	17 1/2	3 5/16	2.5000 <sup>+0.000</sup> <sub>-.0005</sub>	3/4-10	1 1/2			1/2 1/4
	320										
YC360	320	57 3/4		19 1/4	3 3/16	2.4997 <sup>+0.000</sup> <sub>-.0005</sub>			1 1/2-12		

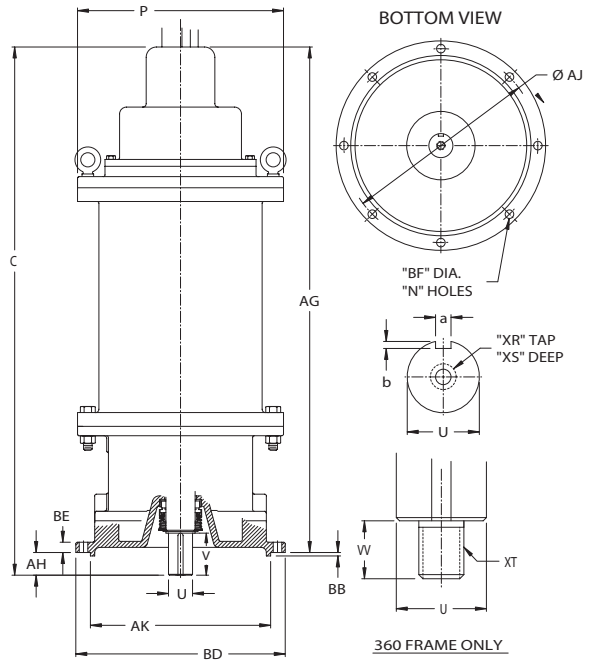
FRAME	MOUNTING FLANGE	L	AG	AJ	AH	AK	AL	BD	BE	BF	N	BB	WEIGHT
YC140	140	28 3/4	19 3/16	10	1 9/16		9.125 <sup>+0.004</sup> <sub>-.000</sub>	11 1/16	3/4	7/16	8	1/8	120
	140	32 1/2	24 1/2		1 7/16		9.127 <sup>+0.003</sup> <sub>-.000</sub>	11	7/16	1/2			
YC180	180	31 3/4	23 11/16	11 1/2	2 3/16	13.123 <sup>+0.000</sup> <sub>-.003</sub>	10.626 <sup>+0.000</sup> <sub>-.000</sub>	12 3/8	3/4	9/16	8	1/4	305
	210	32 1/2	24 1/2	1 1/2	9/16								
YC210	210	35 3/8	27 3/16	14 1/8	1 9/16	13.125 <sup>+0.000</sup> <sub>-.002</sub>		15 1/4	5/8	5/8	8	1/4	355
YC250	210	47 3/8	36 7/8	16	1 21/32			17	3/4	9/16			
	250	46	35 1/2		3 1/32	15.000 <sup>+0.000</sup> <sub>-.002</sub>	17	3/4	9/16				
YC320	250	59 3/8	47 1/8	17 1/4	5 5/16	16.000 <sup>+0.000</sup> <sub>-.002</sub>		18 3/4	1 1/16	11/16	8	1/4	1180
	320	44 7/8	6 9/16		16.000 <sup>+0.000</sup> <sub>-.002</sub>			18 3/4	1 1/16	11/16			
YC360	360	71 1/8	51 3/16	18 3/4	6 9/16	17.500 <sup>+0.000</sup> <sub>-.002</sub>		20 1/4			16		1670

ALL DIMENSIONS IN INCHES USE ONLY CERTIFIED DATA FOR CONSTRUCTION

### Motor Frame Chart - YCC Submersible Motors

Motor HP	Three Phase 60 HZ			Single Phase 60 HZ		Motor HP	Three Phase 60 HZ			Motor HP	Three Phase 60 HZ		
	1800	1200	900	1800	1200		1800	1200	900		1800	1200	900
1	140	140	140	140	140	15	210	250	250	75	320	360	360
1-1/2	140	140	140	140	140	20	210	250	250	100	360	360	360
2	140	140	140	140	140	25	250	250	320	125	360	360	360
3	140	140	210	140	140	30	250	320	320	150	360	360	
5	140	180	210	140		40	250	320	320	200	360		
7-1/2	180	180	210			50	320	320	360				
10	180	210	250			60	320	320	360				

Refer to factory for ratings not listed, including 50HZ ratings.



## YCC "CLC" Submersible Motors

FRAME	MOUNTING FLANGE	C	P	V	U	XR	XS	XT	VV	KEYWAY
										a b
YC210	210	33 3/16	14	2	1.438 <sup>+0.000</sup> <sub>-.0005</sub>					
YC250	250	39 5/32	15 3/8	3 5/16	1.750 <sup>+0.000</sup> <sub>-.001</sub>	5/8-11	1 3/8			3/8 3/16
YC320	250	51 5/32	19 1/4							
YC360	320	53 7/16	22	3 3/16	2.500 <sup>+0.000</sup> <sub>-.001</sub>	3/4-10	1 1/2			1/2 1/4
	360	60 29/32								

FRAME	MOUNTING FLANGE	AG	AJ	AH	AK	BD	BE	BF	N	BB	WEIGHT EST.
YC210	210	31 5/8	14 1/8	1 9/16	13.125 <sup>+0.000</sup> <sub>-.002</sub>	15 1/4	15/16	9/16	8	1/4	450
YC250	250	36 3/16	16	3 1/32	15.000 <sup>+0.000</sup> <sub>-.002</sub>	17	1	9/16			
YC320	250	48 3/16					17 1/4	5 5/16	16.000 <sup>+0.000</sup> <sub>-.002</sub>	18 3/4	2 5/16
	320		2 3/32	11/16							
YC360	360	54 11/32	18 3/4	6 9/16	17.500 <sup>+0.000</sup> <sub>-.002</sub>	20 1/4	2 3/32	16	1/4	2300	

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### Motor Frame Chart - YCC "CLC" Submersible Motors

Motor HP	Three Phase 60 HZ			Motor HP	Three Phase 60 HZ			Motor HP	Three Phase 60 HZ		
	1800	1200	900		1800	1200	900		1800	1200	900
1-1/2			210	15	210	250	250	60	320	360	360
2			210	20	210	250	320	75	320	360	360
3			210	25	250	320	320	100	360	360	360
5	210	210	210	30	250	320	320	125	360	360	360
7-1/2	210	210	210	40	250	320	360	150	360		
10	210	210	250	50	320	360	360				

Refer to factory for ratings not listed, including 50HZ ratings.



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ISO 9001 Certified

