

2CDX/2CDU

Model 2CDX/2CDU

EBARA Stainless Steel Two-Stage Centrifugal Pumps

Contents

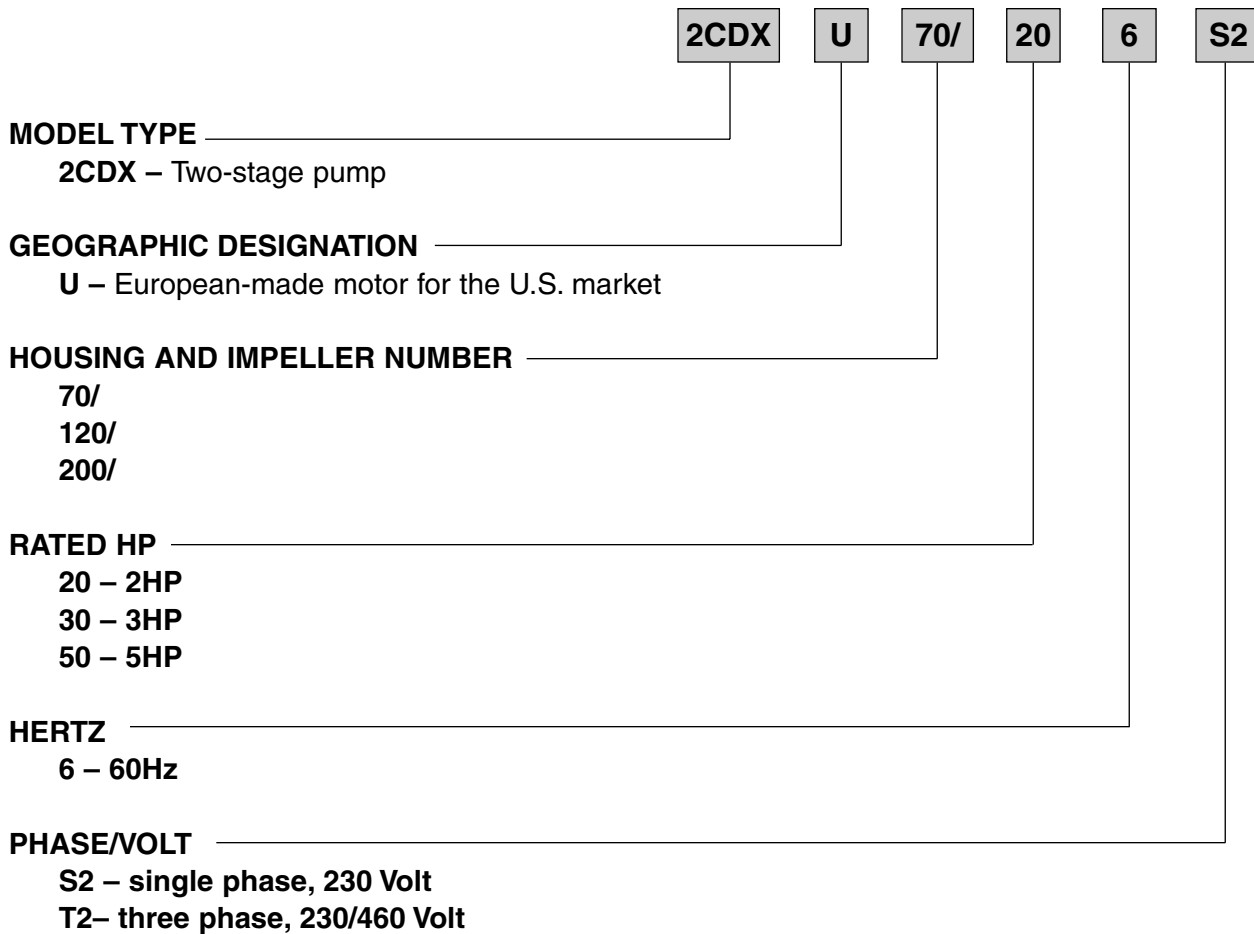
Item No.	Specifications	Selection Chart	Performance Curve	Pump Dimensions	Sectional View	Motor Data
2CDXU70/206-2HP	603	605	606	608	610	612
2CDXU70/306-3HP						
2CDXU120/306-3HP						
2CDXU200/506-5HP						
2CDU70/206-2HP	604	605	606	609	611	Standard NEMA motors
2CDU70/306-3HP						
2CDU120/306-3HP						
2CDU200/506-5HP						



Model 2CDX

EBARA Stainless Steel Two-Stage Centrifugal Pumps

Model Designation



Model 2CDU

EBARA Stainless Steel Two-Stage Centrifugal Pumps

Model Designation

2CDU 70/ 20 6 T 3 C

MODEL TYPE _____
2CDU – Two-stage pump with NEMA configuration

HOUSING AND IMPELLER NUMBER _____
70/
120/
200/

RATED HP _____
20 – 2HP
30 – 3HP
50 – 5HP

HERTZ _____
6 – 60Hz

MOTOR ENCLOSURE _____
T – TEFC (Totally Enclosed Fan Cooled)
D – ODP (Open Drip Proof)

PHASE/VOLT _____
3 – three phase, 230/460 Volt
1 – single phase, 115/230 Volt

SEAL TYPE _____
C – Mild chemical
G – General service
H – High temperature



Specifications

	Standard	Optional
Size Suction Discharge	2CDXU70 – 1¼" NPT Thread 2CDXU120 – 1¼" NPT Thread 2CDXU200 – 1½" NPT Thread 1" NPT Thread	
Range of HP	2 HP to 5 HP	
Range of Performance Capacity Head	5.5 to 66 GPM at 3600 RPM 98 to 245 feet at 3600 RPM	
Liquid handled Type of liquid Temperature Working pressure	Clean water Maximum: 212°F (100°C) Maximum: 125 PSI (9 Bar)	
Materials Casing Impeller (closed type) Shaft Bracket Shaft Seal	304L Stainless Steel 304L Stainless Steel 304L Stainless Steel Aluminum or Cast iron Mechanical Seal – Carbon/Ceramic	Consult factory for optional seal types
Direction of Rotation	Clockwise when viewed from motor end	
Motor Type Speed Three Phase Motor Casing Bearing	TEFC/IP55 60 Hz, 3450 RPM (2 poles) 230/460V Aluminum Ball Bearing	

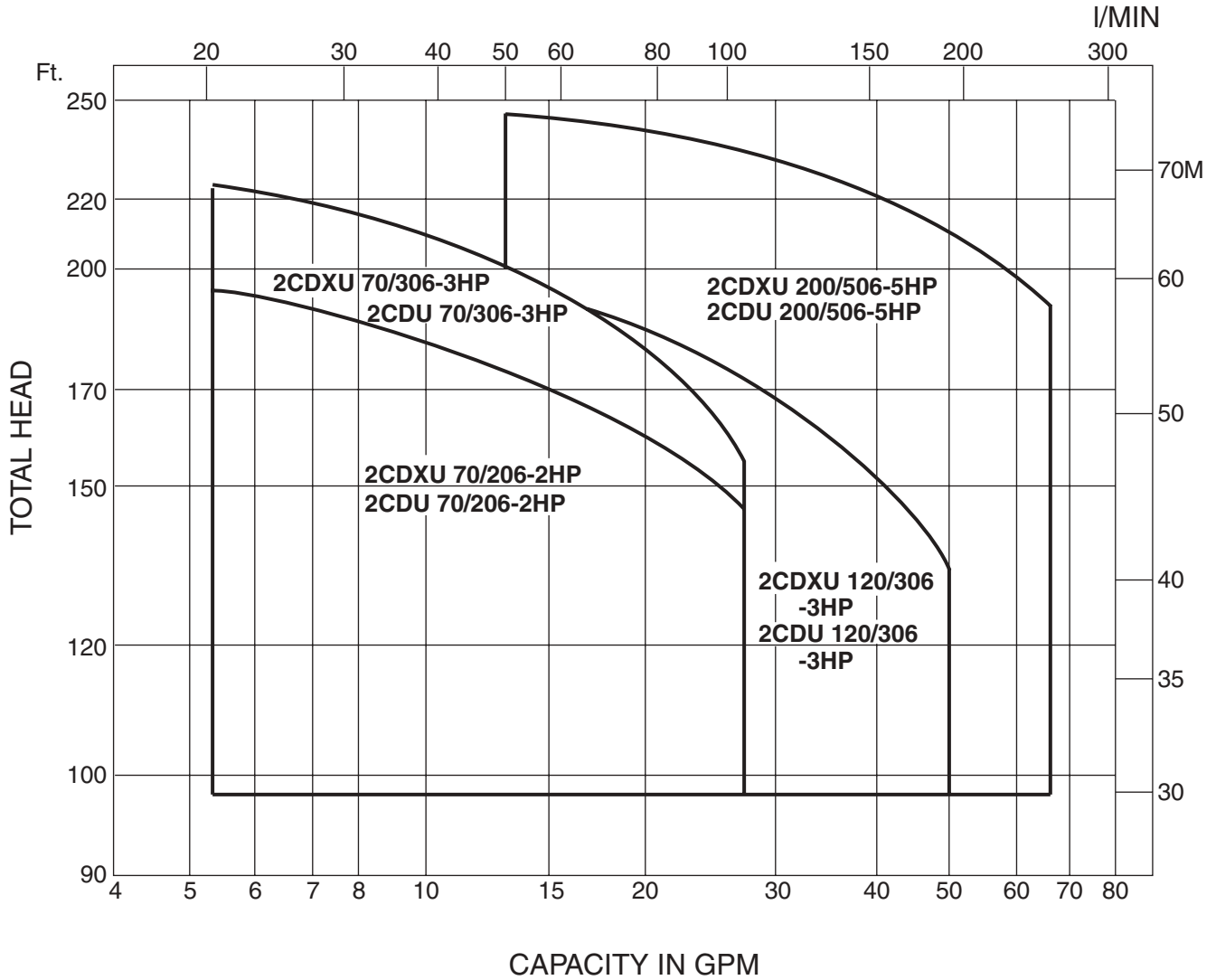


Specifications

	Standard	Optional
Size Suction Discharge	2CDU70 – 1¼" NPT Thread 2CDU120 – 1¼" NPT Thread 2CDU200 – 1½" NPT Thread 1" NPT Thread	
Range of HP	2 HP to 5 HP	
Range of Performance Capacity Head	5.5 to 66 GPM at 3600 RPM 98 to 245 feet at 3600 RPM	
Liquid handled Type of liquid Temperature Working pressure	Clean water Maximum: 212°F (100°C) Maximum: 125 PSI (9 Bar)	Maximum: 250°F (121°C) with optional high temperature seal
Materials Casing Impeller (closed type) Shaft Bracket Shaft Seal	304L Stainless Steel 304L Stainless Steel 304L Stainless Steel Cast iron Mechanical Seal – Type 21	High temperature version Mild chemical version
Direction of Rotation	Clockwise when viewed from motor end	
Motor Type Speed Single Phase Three Phase Motor Protection Bearing	NEMA 56J Frame 60 Hz, 3450 RPM (2 poles) TEFC – 2 HP to 5 HP ODP – 2 HP to 3 HP, 115/230V TEFC – 2 HP to 5 HP ODP – 2 HP to 3 HP, 208-230/460V Built-in overload protection (single phase) Ball Bearing	Explosion proof – consult factory Washdown duty – consult factory



60Hz, Synchronous Speed 3600 RPM



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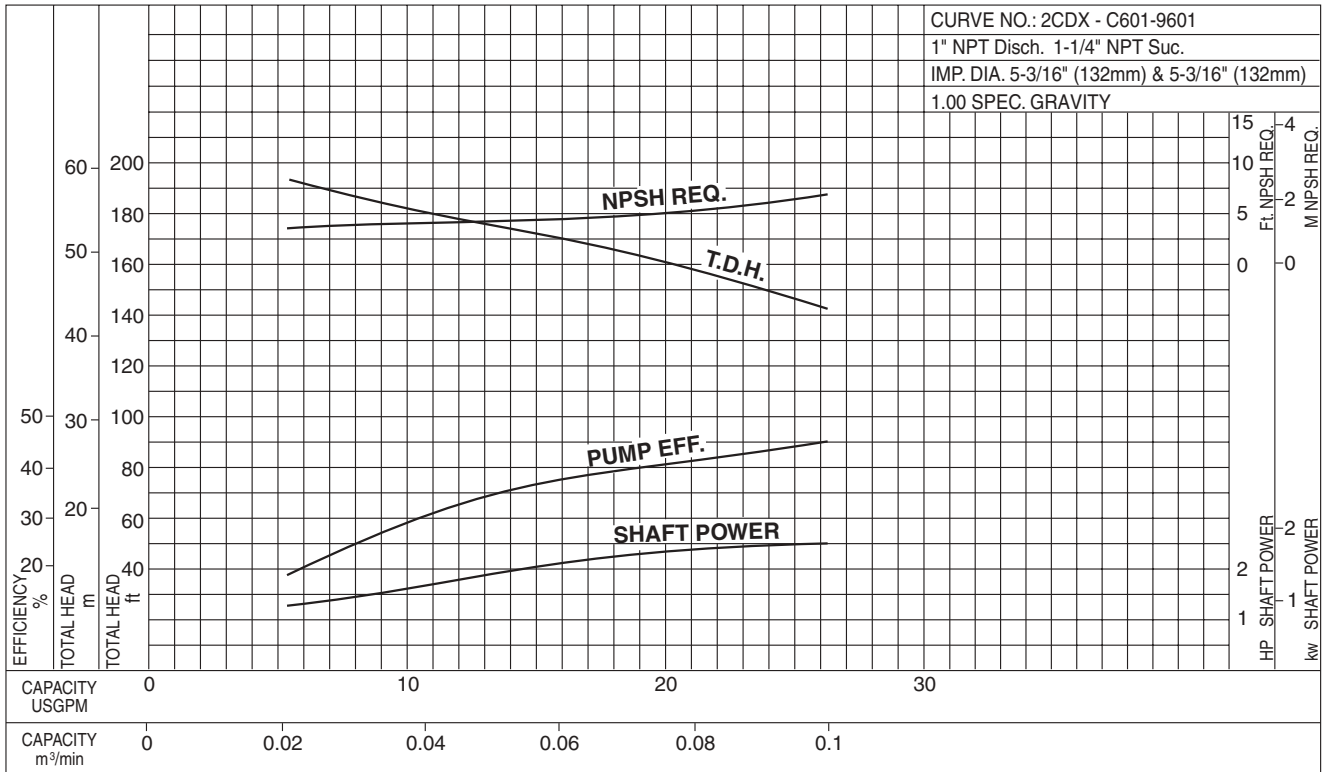
Performance Curves

2CDXU 70/206-2HP

2CDU 70/206-2HP

Synchronous Speed: 3600 RPM

Size: 1 × 1¼ × 5³/₁₆ × 5³/₁₆

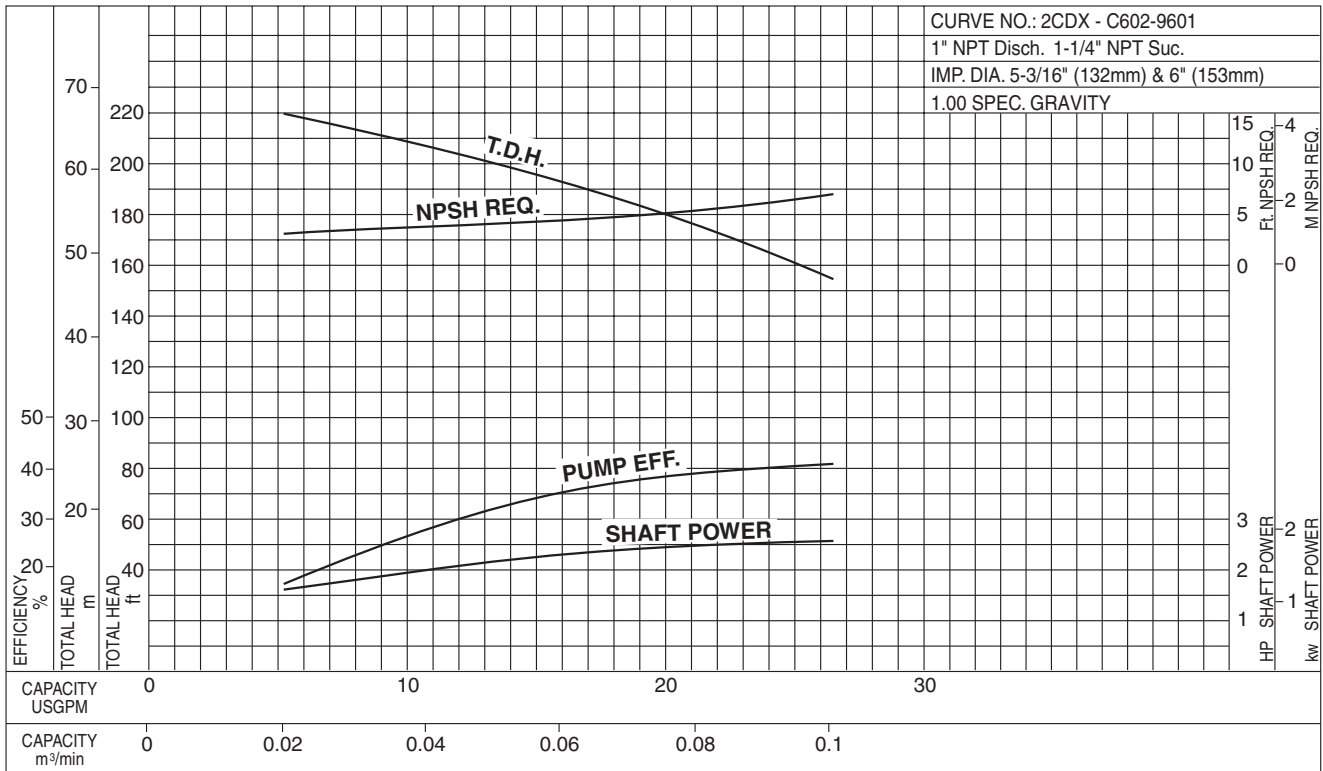


2CDXU 70/306-3HP

2CDU 70/306-3HP

Synchronous Speed: 3600 RPM

Size: 1 × 1¼ × 5³/₁₆ × 6



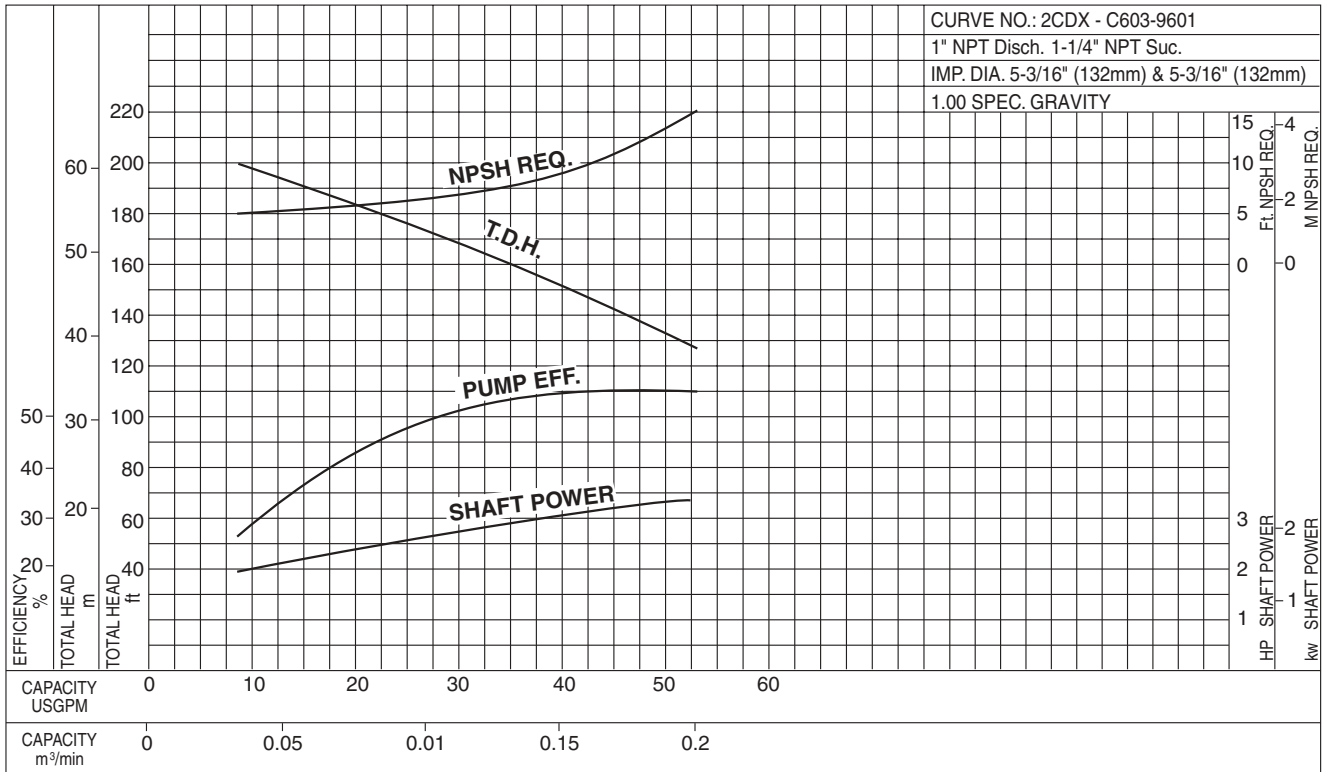
2CDX/2CDU

Model 2CDX/2CDU

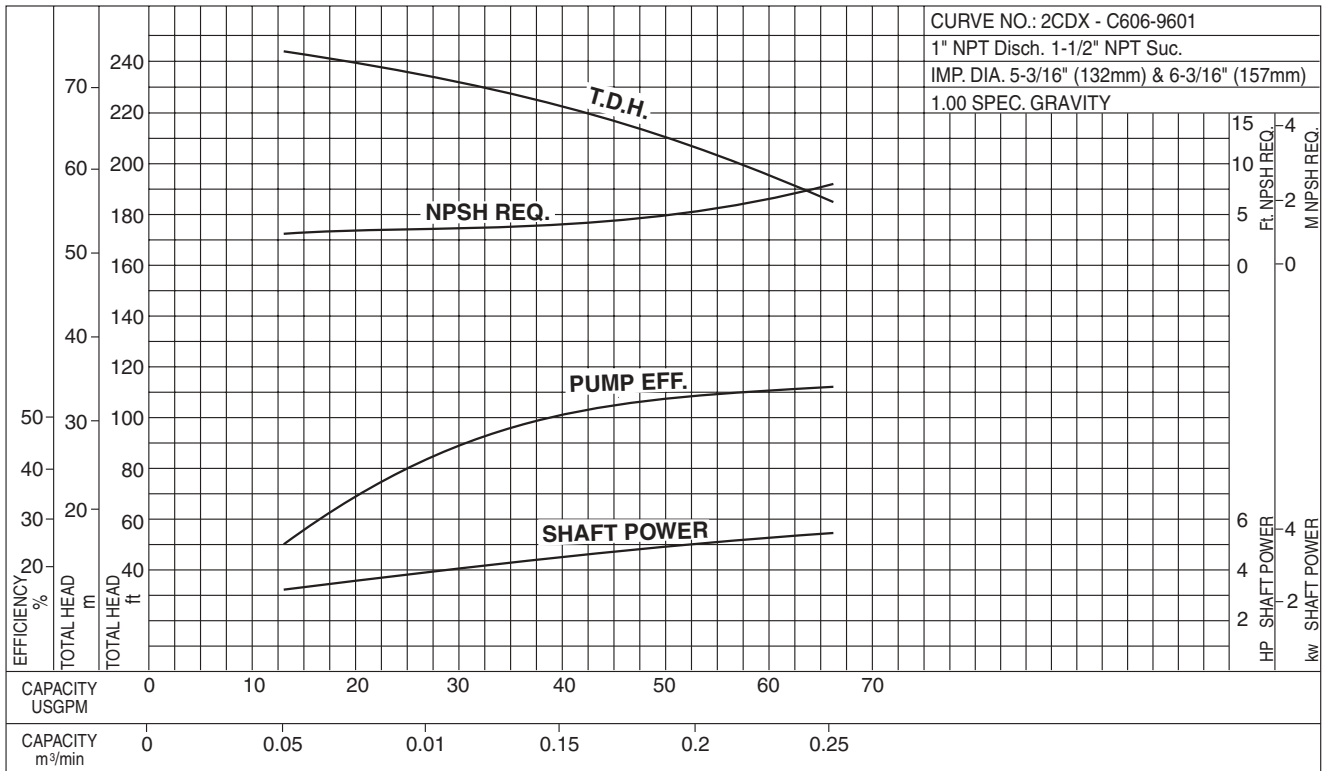
EBARA Stainless Steel Two-Stage Centrifugal Pumps

Performance Curves

2CDXU 120/306-3HP 2CDU 120/306-3HP Synchronous Speed: 3600 RPM Size: 1 × 1¼ × 5³/₁₆ × 5³/₁₆

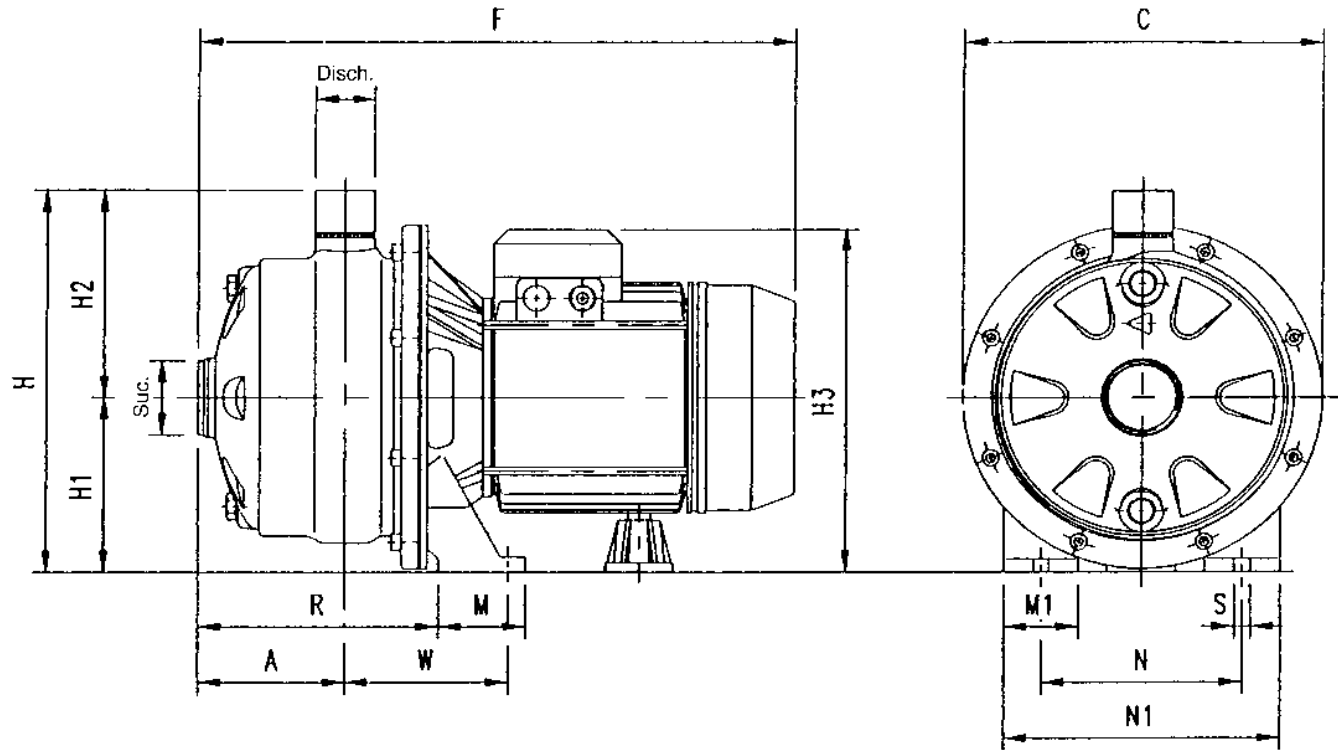


2CDXU 200/506-5HP 2CDU 200/506-5HP Synchronous Speed: 3600 RPM Size: 1 × 1½ × 5³/₁₆ × 6³/₁₆



Dimensions

Pump with IP55 TEFC motor only



Dimensions: inch

PHASE	MODEL	HP	SIZE		PUMP & MOTOR														Weight Lbs
			Suc.	Disch.	A	C	F	H	H ₁	H ₂	H ₃	M	M ₁	N	N ₁	R	S	W	
THREE	2CDXU70/206	2	1 1/4"NPT	1"NPT	3 7/16	9 1/8	14 15/16	9 13/16	4 5/8	5 3/16	8 7/8	2 3/16	1 9/16	5 1/2	7 1/16	5 1/2	3/8	3 3/4	37
	2CDXU70/306	3	1 1/4"NPT	1"NPT	3 7/16	9 1/8	14 15/16	9 13/16	4 5/8	5 3/16	8 7/8	2 3/16	1 9/16	5 1/2	7 1/16	5 1/2	3/8	3 3/4	37
	2CDXU120/306	3	1 1/4"NPT	1"NPT	3 7/16	9 1/8	14 15/16	9 13/16	4 5/8	5 3/16	8 7/8	2 3/16	1 9/16	5 1/2	7 1/16	5 1/2	3/8	3 3/4	39
	2CDXU200/506	5	1 1/2"NPT	1"NPT	3 7/16	9 1/8	17 3/8	9 13/16	4 5/8	5 3/16	9 9/16	2 11/16	1 15/16	6 5/16	8 1/4	5 11/16	1/2	4 5/16	71

Dimensions: mm

PHASE	MODEL	HP	SIZE		PUMP & MOTOR														Weight kg
			Suc.	Disch.	A	C	F	H	H ₁	H ₂	H ₃	M	M ₁	N	N ₁	R	S	W	
THREE	2CDXU70/206	2	1 1/4"NPT	1"NPT	87	232	380	250	118	132	226	55	40	140	180	139.5	9	95	17
	2CDXU70/306	3	1 1/4"NPT	1"NPT	87	232	380	250	118	132	226	55	40	140	180	139.5	9	95	17
	2CDXU120/306	3	1 1/4"NPT	1"NPT	87	232	380	250	118	132	226	55	40	140	180	139.5	9	95	18
	2CDXU200/506	5	1 1/2"NPT	1"NPT	87	232	441	250	118	132	243	68	50	160	210	144.5	12	109	32

Model 2CDU

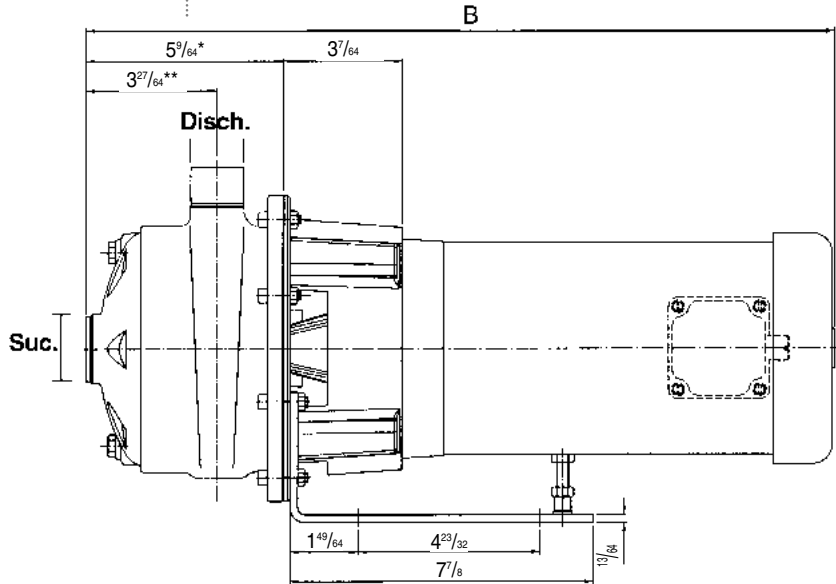
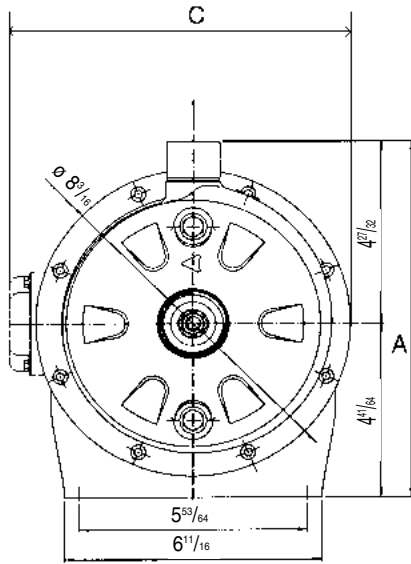
EBARA Stainless Steel Two-Stage Centrifugal Pumps

Dimensions

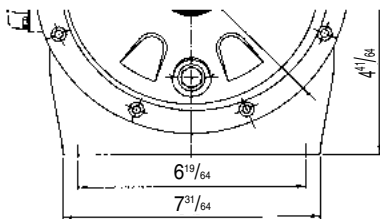
Pump with Standard NEMA motor

Note: All dimensions in inches

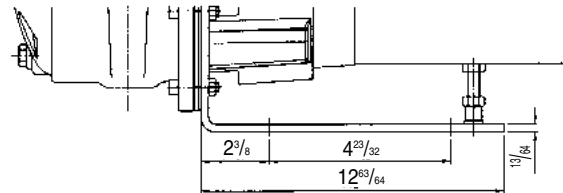
Note:
Dimensions for Model 2CDU120/306
*5⁷/₃₂
**3¹/₂



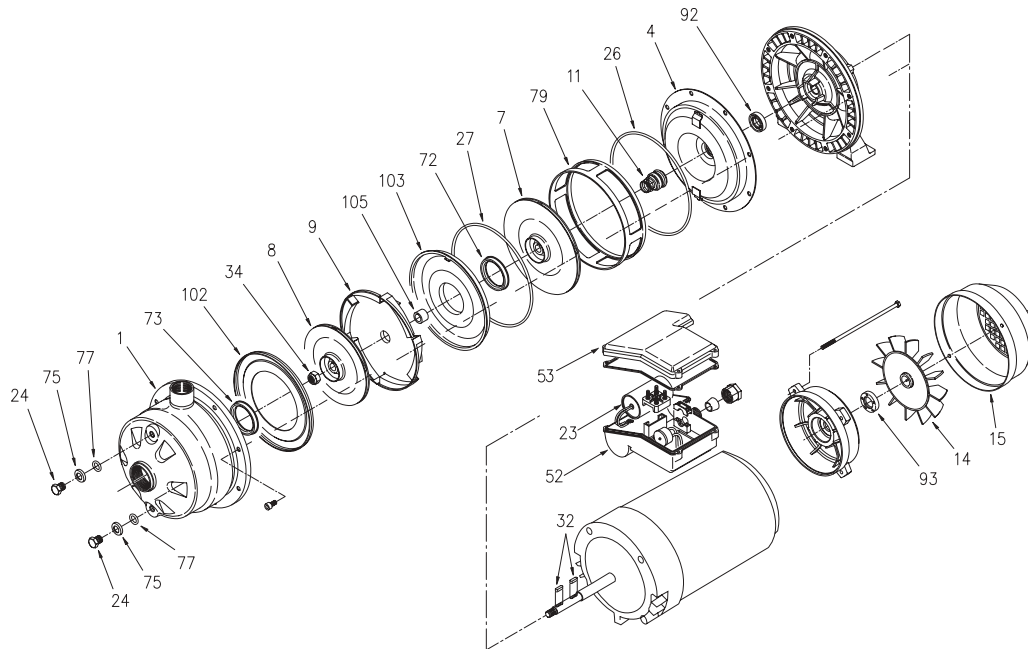
Note:
Dimensions for
Model 2CDU200/506 5HP



Note:
Dimensions for
Model 2CDU200/506 5HP



Model	Pump Size – NPT (Inch)		Dimension (Inch)			Approximate Weight (lbs.)			
	Suction	Discharge	Maximum Height (A)	Maximum Length (B)	Maximum Width (C)	Single Phase		Three Phase	
						ODP	TEFC	ODP	TEFC
2CDU70/206	1 ¹ / ₄	1"	9.77	20.27	7.323	55	65	50	45
2CDU70/306	1 ¹ / ₄	1"	10.82	21.87	11.66	65	90	55	60
2CDU120/306	1 ¹ / ₄	1"	10.82	21.91	11.66	65	90	55	65
2CDU200/506	1 ¹ / ₂	1"	11.66	23.5	11.66	n/a	100	n/a	90

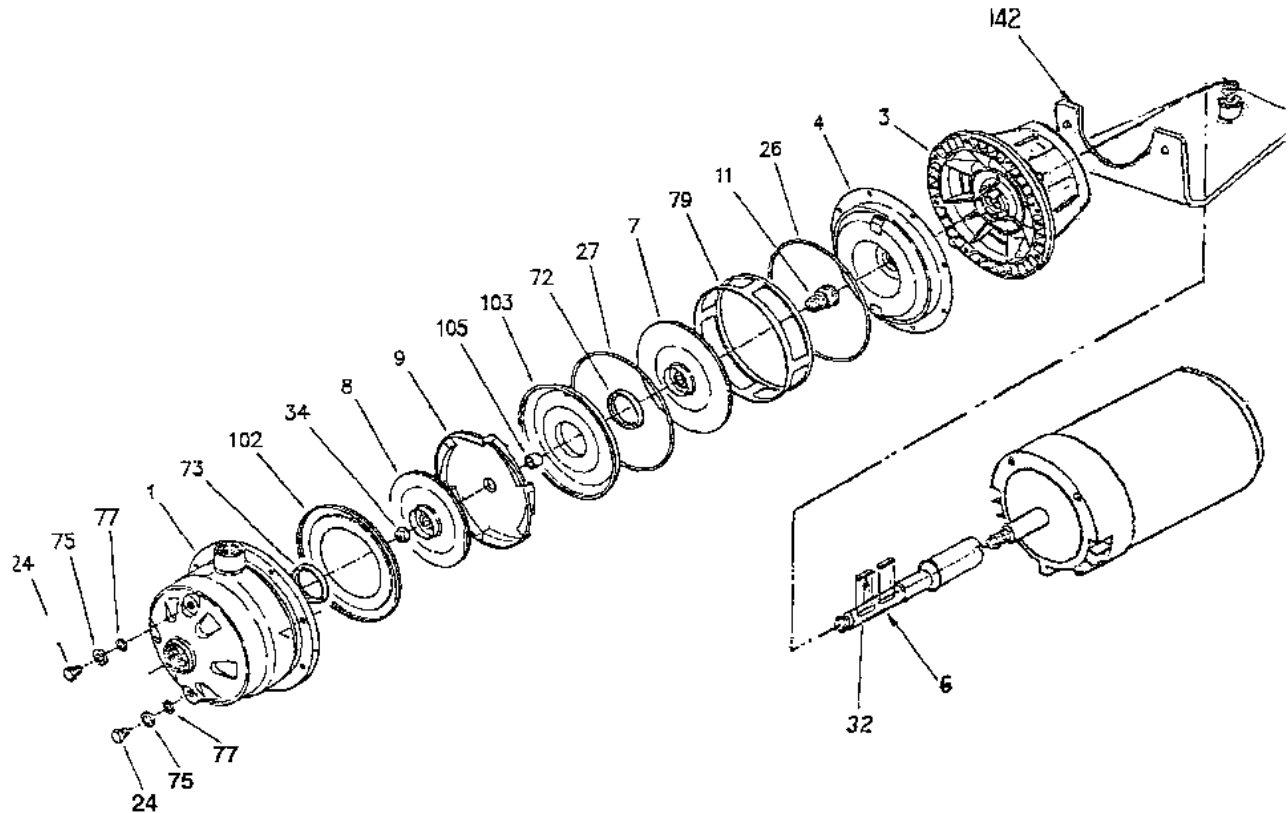


Location No.	Part Name	Material	No. for 1 Unit
1	Casing	304 Stainless	1
4	Casing cover	304 Stainless	1
7	Impeller	304 Stainless	1
8	Impeller	304 Stainless	1
9	Diffuser	304 Stainless	1
11	Mechanical seal	Carbon/Ceramic	1
14	Fan	Polypropolene	1
15	Fan cover	Steel	1
23*	Capacitor*	*Single phase only	1
24	Priming plug	303 Stainless	2
26	O-Ring	Viton	1
27	O-Ring	Viton	1
32	Key	304 Stainless	2
34	Impeller nut	304 Stainless	1
52	Terminal box	Polypropolene	1
53	Terminal cover	Polypropolene	1
72	Casing ring	Viton	1
73	Casing ring	Viton	1
75	Washer	304 Stainless	2
77	O-ring	Viton	2
79	Spacer diffuser	304 Stainless	1
92	Lip seal	—	1
93	Lip seal	—	1
102	Suction cover	304 Stainless	1
103	Conveyor cover	304 Stainless	1
105	Sleeve	304 Stainless	1

***Note: Capacitor for Single Phase ONLY**



Exploded view



Location No.	Part Name	Material	No. for 1 Unit
001	Casing	304 Stainless	1
003	Motor bracket	Cast Aluminum	1
004	Casing cover	304 Stainless	1
006	Shaft extension	304 Stainless	1
007	Impeller	304 Stainless	1
008	Impeller	304 Stainless	1
009	Diffuser	304 Stainless	1
011	Mechanical Seal Type 21	Carbon/Ceramic	1
024	Priming plug/Drain plug	303 Stainless	2
026	O-Ring	Viton	1
027	O-Ring	Viton	1
032	Key	Stainless	2
034	Impeller nut	304 Stainless/Nylon	1
072	Casing ring	Viton	2
073	Casing ring	Viton	1
075	Washer	304 Stainless	2
077	O-ring	Viton	2
079	Spacer diffuser	304 Stainless	1
102	Suction cover	304 Stainless	1
103	Conveyor cover	304 Stainless	1
105	Sleeve	304 Stainless	1
142	Base	Steel	1



Model 2CDX

EBARA Stainless Steel Two-Stage Centrifugal Pumps

Electrical Data

Hz	Poles	Phase	Output (HP)	Voltage (V)	Applicable Model
60	2	Single	2 to 3	230	2CDXU

Name-Plate Rating	MOTOR MODEL		70/206	70/306				
	Output	HP	2	3				
		KW	1.5	2.2				
	Phase		1	1				
	Poles		2	2				
	Volts		230	230				
	Amperes		10.3	11.7				
	Speed		3500	3450				
Insulation Class		F	F					
Capacity of Capacitor μF		Start	—	—				
		Run	35	35				
No Load Test		Amperes	5.50	5.50				
		Watts	168	168				
Resistance at 20°C OHMS			2.558	2.558				
100% Load	Current	Amp.	10.3	11.7				
	Efficiency	%	79.7	78.5				
	Power Factor	%	95.6	94.6				
	Speed	RPM	3484	3461				
Locked Rotor Torque		%	40.9	40.9				
Start Current		Amp.	69.6	69.6				
Number Starts Per Hour			20	20				
Voltage Tolerance		%	±6%					
Frequency Tolerance		%	±6%					
(Ref. data Mfr's Symbols)			EI	EI				



Model 2CDX

EBARA Stainless Steel Two-Stage Centrifugal Pumps

Electrical Data

Hz	Poles	Phase	Output (HP)	Voltage (V)	Applicable Model
60	2	Three	2 to 5	230	2CDXU

Name-Plate Rating	MOTOR MODEL		70/206	70/306	120/306	200/506	
	Output	HP	2	3	3	5	
		KW	1.5	2.2	2.2	3.7	
	Phase		3	3	3	3	
	Poles		2	2	2	2	
	Volts		230	230	230	230	
	Amperes		8.0	8.0	8.3	15.1	
	Speed		3490	3460	3460	3480	
Insulation Class		F	F	F	F		
No Load Test		Amperes	3.2	3.2	4.5	7.1	
		Watts	157	157	165	436	
Resistance at 20°C OHMS			2.45	2.45	2.02	0.72	
100% Load	Current	Amp.	8.0	8.0	8.3	15.1	
	Efficiency	%	80.2	80.2	83.1	82.7	
	Power Factor	%	85.6	85.6	85.0	86.8	
	Speed	RPM	3392	3392	3409	3465	
Locked Rotor Torque		%	500	500	388	300	
Start Current		Amp.	57	59	71	145	
Number Starts Per Hour			20	20	20	20	
Voltage Tolerance		%	±10%				
Frequency Tolerance		%	±10%				
(Ref. data Mfr's Symbols)			EI	EI	EI	EI	



Model 2CDX

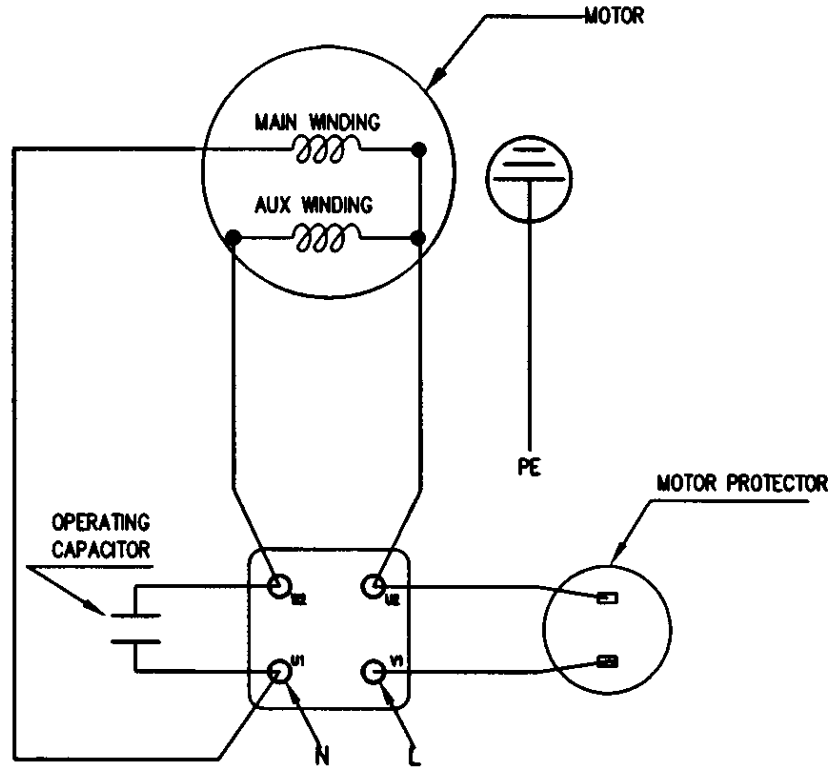
EBARA Stainless Steel Two-Stage Centrifugal Pumps

Electrical Data

Hz	Poles	Phase	Output (HP)	Voltage (V)	Applicable Model
60	2	Three	2 to 5	460	2CDXU

Name-Plate Rating	MOTOR MODEL		70/206	70/306	120/306	200/506	
	Output	HP	2	3	3	5	
		kW	1.5	2.2	2.2	3.7	
	Phase		3	3	3	3	
	Poles		2	2	2	2	
	Volts		460	460	460	460	
	Amperes		3.7	4.4	4.2	8.2	
	Speed		3490	3460	3460	3480	
Insulation Class		F	F	F	F		
No Load Test		Amperes	1.6	1.6	2.73	3.7	
		Watts	186	186	230	516	
Resistance at 20°C OHMS			3.5	3.5	2.43	0.92	
100% Load	Current	Amp.	4.0	4.0	4.2	7.6	
	Efficiency	%	82	82	84.3	83.3	
	Power Factor	%	80.9	80.9	74.1	81.3	
	Speed	RPM	3442	3442	3469	3494	
Locked Rotor Torque		%	506	506	424	296	
Start Current		Amp.	30	30	36	73	
Number Starts Per Hour			20	20	20	20	
Voltage Tolerance		%	±10%				
Frequency Tolerance		%	±5%				
(Ref. data Mfr's Symbols)			EI	EI	EI	EI	

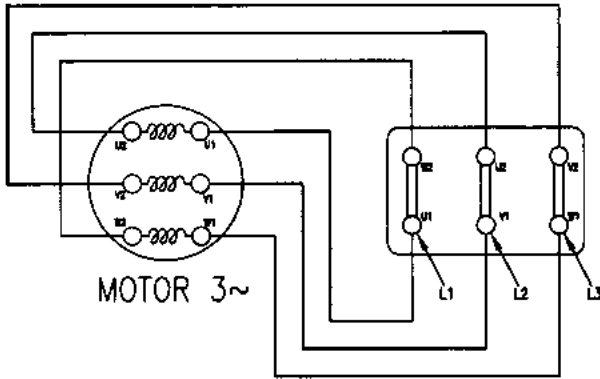




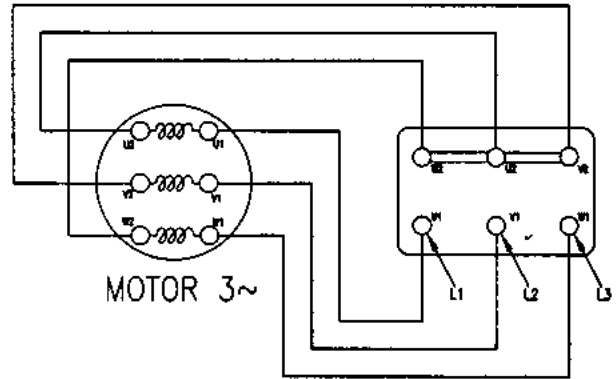
Wiring Diagram

Three Phase

DELTA CONNECTION

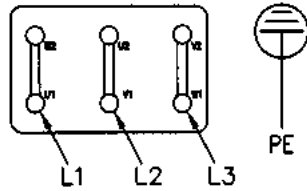


STAR CONNECTION



FOR MOTOR 4 kW AND BELOW

DELTA CONNECTION 230 V



STAR CONNECTION 460 V

