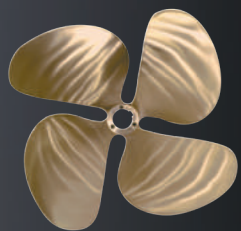


Recreational Propellers



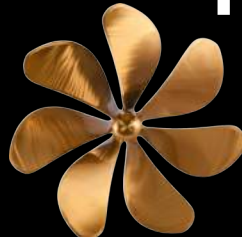
CX-400



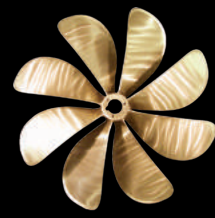
CX-500



CX-600



CX-700



CX-800



DJ-355



DJX



DQ-486



DQ-469



DQX



Dyna-Jet



Dyna-Quad



EPY



EQY



M-500



Marlin



MY-T3



MY-T4



MY-T5



Sailer 2



Sailer 3



“X” SERIES

Specifications

DJX	
Blades	3
E.A.R.	0.61
Diameter Range	12” - 21”
Skew	21°

DQX	
Blades	4
E.A.R.	0.735
Diameter Range	17” - 22”
Skew	21°

DQX	
Blades	4
E.A.R.	0.810
Diameter Range	23” - 32”
Skew	21°

Who Should Buy “X” Series Propellers?

The “X” Series is a high-performance line of machine finished propellers that fit a wide range of planing pleasure boats. The DJX and the DQX are evolutions of our classic Dyna-Jet and Dyna-Quad propeller designs, optimized to utilize the full power of modern engines. Designed with more efficient blade sections and increased blade area, “X” Series propellers are able to better manage cavitation and decrease vibration when compared to similar products.

Michigan Wheel uses NC machine finishing that ensures a more accurate propeller than standard hand finished propellers. This results in higher quality propellers that meet Michigan Wheel’s stringent tolerance requirements at competitive prices. The “X” Series is the standard for high quality, performance oriented propellers.



“THE ‘X’ SERIES IS THE STANDARD FOR HIGH QUALITY, PERFORMANCE-ORIENTED PROPELLERS.”

Recreational Applications

Unsure if this is the right propeller for you? Contact your local Michigan Wheel Distributor, or the Michigan Wheel team to review your application.

Excellence in Propulsion

DJX SPECIFICATIONS (0.61 E.A.R.)

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE					
12	305	1-5/8	1-3/4	2-3/8	7/8	1-1/8	7/8	5-7/16	22.7	5	41	
13	330	1-5/8	1-7/8	2-3/4	7/8	1-1/8	7/8	6	26.8	6	61	
14	356	1-7/8	2	2-3/4	1	1-1/4	1	6-1/2	31	8	90	
15	381	1-7/8	2	2-3/4	1	1-1/4	1	6-7/8	35.8	10	126	
16	406	2-1/8	2-3/8	3-1/4	1-1/8	1-1/2	1-1/8	7-3/8	40.5	12	172	
17	432	2-1/4	2-1/2	3-1/4	1-1/4	1-1/2	1-1/4	7-7/8	45.4	14	232	
18	457	2-3/8	2-5/8	3-3/4	1-1/4	1-3/4	1-1/4	8-5/16	51.3	16	307	
19	483	2-3/8	2-5/8	3-3/4	1-1/4	1-3/4	1-1/4	8-3/4	57.3	19	401	
20	508	2-3/8	2-5/8	3-3/4	1-1/4	1-3/4	1-1/4	9-1/4	63.8	21	516	
21	533	2-3/4	3	4-1/8	1-3/8	2	1-3/8	9-3/4	69.9	26	660	
* WR2 = ±10% in Air (inch squared lbs.)		M.W.R. = 0.37			B.T.F. = 0.048							

DQX SPECIFICATIONS (0.735 E.A.R.)

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE					
17	432	2-1/4	2-1/2	3-1/4	1-1/4	1-1/2	1-1/4	7-3/16	41.4	16	279	
18	457	2-3/8	2-5/8	3-1/4	1-1/4	1-3/4	1-1/4	7-5/8	46.4	18	370	
19	483	2-3/8	2-5/8	3-3/4	1-1/4	1-3/4	1-1/4	8	51.9	21	482	
20	508	2-3/8	2-5/8	3-3/4	1-1/4	1-3/4	1-1/4	8-7/16	57.7	24	621	
21	533	2-3/4	3	4-1/8	1-3/8	2	1-3/8	8-7/8	63.2	29	794	
22	559	2-3/4	3	4-1/8	1-3/8	2	1-3/8	9-5/16	69.6	33	997	
* WR2 = ±10% in Air (inch squared lbs.)		M.W.R. = 0.33			B.T.F. = 0.046							

DQX SPECIFICATIONS (0.81 E.A.R.)

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE					
23	406	3	3-1/4	FULL TAPER	1-1/2	2	1-1/2	10-5/8	83.7	45	1,392	
24	432	3	3-1/4	FULL TAPER	1-1/2	2	1-1/2	11-1/16	91.4	50	1,714	
25	457	3-3/8	3-3/4	FULL TAPER	1-3/4	2-1/4	1-3/4	11-9/16	98.6	60	2,111	
26	483	3-3/8	3-3/4	FULL TAPER	1-3/4	2-1/4	1-3/4	12	106.9	65	2,557	
27	508	3-3/4	4-1/8	FULL TAPER	2	2-1/2	2	12-1/2	114.8	77	3,099	
28	533	3-3/4	4-1/8	FULL TAPER	2	2-1/2	2	12-15/16	123.8	83	3,700	
30	559	4-1/4	4-5/8	FULL TAPER	2	2-3/4	2	13-7/8	141.5	110	5,240	
32	584	4-1/4	4-5/8	FULL TAPER	2	3	2	14-3/4	161.8	126	7,176	
* WR2 = ±10% in Air (inch squared lbs.)		M.W.R. = 0.37			B.T.F. = 0.046							



// Why Buy "X" Series Propellers?

Michigan "X" Series propellers are machine finished to provide some of the most accurate series propellers available. Increased blade area helps manage cavitation and vibration and ensures a smooth ride.

DYNA-SERIES

Specifications

DYNA-JET	
Blades	3
E.A.R.	0.56
Diameter Range	17" - 48"
Pitch Range*	0.7 - 1.1

DYNA-QUAD	
Blades	4
E.A.R.	0.69
Diameter Range	17" - 36"
Pitch Range*	0.7 - 1.1

M-500	
Blades	5
E.A.R.	0.86
Diameter Range	24" - 46"
Pitch Range*	0.75 - 1.3

*Pitch range indicates the Pitch/Diameter ratio.

Who Should Buy "Dyna" Series Propellers?

The Dyna Series is Michigan Wheel's classic line of performance pleasure boat propellers. Available in 3, 4, and 5 blade models to cover a wide range of vessels. The Dyna Series of propellers continues to be one of Michigan Wheel's most popular series of propellers and is considered by many to be the standard in recreational propellers.

The Dyna blade design provides a great balance of performance and durability for recreational boats and is also a popular choice for higher speed commercial vessels. Dyna Series propellers are hand finished by Michigan Wheel's skilled craftsmen to ensure quality and performance that exceeds our customer's expectations.

"...ONE OF MICHIGAN WHEEL'S MOST POPULAR SERIES OF PROPELLERS, AND IS CONSIDERED BY MANY TO BE THE STANDARD IN RECREATIONAL PROPELLERS."



Recreational Applications

Unsure if this is the right propeller for you? Contact your local Michigan Wheel Distributor, or the Michigan Wheel team to review your application.

Excellence in Propulsion

DYNA-JET & DYNA-QUAD SPECIFICATIONS								DYNA-JET (0.56 E.A.R.)				DYNA-QUAD (0.69 E.A.R.)			
DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE								
9	229	1-3/8	1-1/2	2-1/8	3/4	7/8	3/4	3-7/8	11.7	2.5	10	-	-	-	-
10	254	1-1/2	1-5/8	2-1/4	3/4	1	3/4	4-5/16	14.5	3	17	-	-	-	-
11	279	1-1/2	1-5/8	2-1/4	3/4	1	3/4	4-3/4	17.7	4	26	-	-	-	-
12	305	1-5/8	1-3/4	2-3/8	7/8	1-1/8	7/8	5-3/16	21.1	5	40	-	-	-	-
13	330	1-5/8	1-13/16	2-3/4	1	1-1/8	1	5-5/8	24.8	6	60	-	-	-	-
14	356	1-7/8	2	2-3/4	1	1-1/4	1	6	28.7	8	86	-	-	-	-
15	381	1-7/8	2	2-3/4	1	1-1/4	1	6-7/16	33.1	9	120	-	-	-	-
16	406	2-1/8	2-3/8	3-1/4	1-1/8	1-3/8	1-1/8	6-7/8	37.5	11	167	-	-	-	-
17	432	2-1/8	2-3/8	3-1/4	1-1/4	1-3/8	1-1/4	7-5/16	42.8	13	224	6-3/4	38.7	14	257
17**	432	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	7-5/16	42.8	13	224	-	-	-	-
18	457	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	7-3/4	47.4	16	298	7-1/8	43.2	17	341
19	483	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	8-3/16	53.1	18	388	7-1/2	48.3	20	445
20	508	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	8-5/8	59.0	20	500	7-15/16	53.7	23	573
21	533	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	9-1/16	64.6	25	640	8-5/16	58.8	28	733
22	559	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	9-1/2	71.2	28	803	8-11/16	64.8	31	920
23	584	3	3-1/4	4-1/2	1-1/2	2	1-1/2	9-7/8	77.6	33	1,004	9-1/16	70.6	36	1,150
24	610	3	3-1/4	4-1/2	1-1/2	2	1-1/2	10-3/8	84.7	36	1,237	9-1/2	77.1	40	1,216
26	660	3-3/8	3-3/4	4-7/8	1-3/4	2-1/4	1-3/4	11-1/4	99.1	46	1,844	10-1/4	90.2	52	2,110
28	711	3-3/4	4-1/8	5-3/4	2	2-1/2	2	12-1/16	114.7	60	2,671	11-1/16	104.4	66	3,056
30	762	4-1/4	4-5/8	6	2	3	2	12-15/16	131.1	76	3,775	11-7/8	119.3	84	4,316
32	813	4-1/4	4-5/8	6	2	3	2	13-3/4	150.0	88	5,172	12-5/8	136.5	97	5,917
34	864	4-1/4	4-5/8	6-1/2	2-1/4	3	2-1/4	14-5/8	170.0	101	6,973	13-7/16	154.7	112	7,978
36	914	4-5/8	5-1/8	8	2-3/4	3-1/2	2-3/4	15-1/2	190.1	124	9,289	14-1/4	173.0	138	10,622
38	965	4-5/8	5-1/8	8	2-3/4	3-1/2	2-3/4	16-3/8	212.7	140	12,108	15	193.5	156	13,851
40	1,016	5	5-1/2	9	3	3-3/4	3	17-1/4	235.3	168	15,646	15-13/16	214.1	186	17,892
42	1,067	5-3/8	6	10-7/16	3	4	3	18-1/8	258.8	205	20,016	16-5/8	235.5	226	22,878
44	1,118	5-7/16	6-3/16	11	3	4	3	19	284.5	233	25,187	17-3/8	258.9	258	28,790
46	1,168	5-5/8	6-1/4	11-7/8	3	4	3	19-7/8	311.5	266	31,385	18-3/16	283.5	293	35,376

* WR2 = ±10% in Air (inch squared lbs.)

For Dyna-Jet M.W.R. = 0.33 B.T.F. = 0.050
 For Dyna-Quad M.W.R. = 0.33 B.T.F. = 0.047

** For Dyna-Jet Series propellers only - Sizes (Dia. x Pitch) 17x16, 17x17 & 17x18 maximum bore is 1-1/2". All other 17" diameter sizes - maximum bore is 1-3/8".

M-500 SPECIFICATIONS (0.86 E.A.R.)												
DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE					
22	559	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	8-11/16	64.9	37	1,150	
23	584	3	3-1/4	4-1/2	1-1/2	2	1-1/2	9-1/16	70.6	43	1,430	
24	610	3	3-1/4	4-1/2	1-1/2	2	1-1/2	9-1/2	77.1	48	1,770	
26	660	3-3/8	3-3/4	4-7/8	1-3/4	2-1/4	1-3/4	10-1/2	90.2	62	2,630	
28	711	3-3/4	4-1/8	5-3/4	2	2-1/2	2	11-1/16	104.4	79	3,810	
30	762	4-1/4	4-5/8	6	2	3	2	11-7/8	119.3	99	5,380	
32	813	4-1/4	4-5/8	6	2	3	2	12-5/8	136.5	115	7,380	
34	864	4-1/4	4-5/8	6-1/2	2-1/4	3	2-1/4	13-7/16	154.7	134	9,960	
36	914	4-5/8	5-1/8	8	2-3/4	3-1/2	2-3/4	14-1/4	173.0	164	13,250	
38	965	4-5/8	5-1/8	8	2-3/4	3-1/2	2-3/4	15	193.5	186	17,280	
40	1,016	5	5-1/2	9	3	3-3/4	3	15-7/8	214.1	221	22,320	
42	1,067	5-3/8	6	10-7/16	3	4	3	16-9/16	235.5	267	28,520	
44	1,118	5-7/16	6-3/16	11	3	4	3	17-3/8	258.9	305	35,900	
46	1,168	5-5/8	6-1/4	11-7/8	3	4	3	18-3/16	283.5	347	44,740	

* WR2 = ±10% in Air (inch squared lbs.)

M.W.R. = 0.37

B.T.F. = 0.046

SAILBOAT PROPELLERS

Specifications

SAILER 2-BLADE	
Blades	2
E.A.R.	0.31
Diameter Range	10" - 20"

SAILER 3-BLADE	
Blades	3
E.A.R.	0.46
Diameter Range	10" - 20"

"M" SERIES 2-BLADE SAILER	
Blades	2
E.A.R.	0.36
Diameter Range	10" - 18"

"M" SERIES 3-BLADE SAILER	
Blades	3
E.A.R.	0.44
Diameter Range	10" - 18"

"M" SERIES MP3	
Blades	3
E.A.R.	0.53
Diameter Range	9" - 20"



Who Should Buy Michigan "Sailboat" Series Propellers?

Don't let the lack of wind get you down; with Michigan Wheel Sailer series propellers you will always stany underway. Michigan Wheel Sailer propellers are available in 2- and 3-blade configurations, with skewed and non-skewed blades. Sailer series propellers are built with just th eright amount of blade area to optimize efficiency when motoring or sailing.

The MP3 propeller is available with additional blade area for larger, high-powered engines. Whether you are chasing the wind, or riding it, Michigan Wheel Sailer propellers will ensure you are getting the best speed out of your sailboat.



Recreational Applications

Unsure if this is the right propeller for you? Contact your local Michigan Wheel Distributor, or the Michigan Wheel team to review your application.

Excellence in Propulsion

SAILER 2 & 3 BLADE SPECIFICATIONS

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)		
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE
10	254	1-7/16	1-5/8	2-1/4	3/4	7/8	3/4
11	280	1-7/16	1-5/8	2-1/4	3/4	7/8	3/4
12	305	1-9/16	1-3/4	2-3/8	7/8	1-1/8	7/8
13	330	1-9/16	1-3/4	2-3/4	1	1-1/8	1
14	356	1-3/4	2	2-3/4	1	1-1/8	1
15	381	1-3/4	2	2-3/4	1	1-1/8	1
16	406	1-15/16	2-3/16	3-1/4	1-1/8	1-1/4	1-1/8
17	432	2	2-5/16	3-1/4	1-1/8	1-3/8	1-1/8
18	457	2	2-5/16	3-1/4	1-1/8	1-3/8	1-1/8
19	483	2-1/8	2-7/16	3-3/4	1-1/4	1-3/8	1-1/4
20	508	2-1/8	2-7/16	3-3/4	1-1/4	1-3/8	1-1/4

"M" SERIES 2-BLADE & 3-BLADE SAILER SPECIFICATIONS

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)		
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE
10	254	1-7/16	1-5/8	2-1/4	3/4	7/8	3/4
11	279	1-7/16	1-5/8	2-1/4	3/4	7/8	3/4
12	305	1-9/16	1-3/4	2-3/8	7/8	1-1/8	7/8
13	330	1-9/16	1-3/4	2-3/4	1	1-1/8	1
14	356	1-3/4	2	2-3/4	1	1-1/8	1
15	381	1-3/4	2	2-3/4	1	1-1/8	1
16	406	1-15/16	2-3/16	3-1/4	1-1/8	1-1/4	1-1/8
17	432	2	2-5/16	3-1/4	1-1/8	1-3/8	1-1/8
18	457	2	2-5/16	3-1/4	1-1/8	1-3/8	1-1/8

MP 3 SPECIFICATIONS - 0.53 E.A.R.

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ. IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE				
9	229	1-5/16	1-7/16	2-1/8	3/4	3/4	3/4	3-7/8	11.0	2.2	6
10	254	1-7/16	1-5/8	2-1/8	3/4	7/8	3/4	4-5/16	13.6	2.9	12
11	279	1-7/16	1-5/8	2-1/8	3/4	7/8	3/4	4-3/4	16.5	3.7	18
12	305	1-9/16	1-3/4	2-5/8	7/8	1-1/8	7/8	5-3/16	19.6	4.6	29
13	330	1-9/16	1-3/4	2-3/4	1	1-1/8	1	5-9/16	23.0	5.5	43
14	356	1-3/4	2	3	1	1-1/8	1	6	26.7	7.5	62
15	381	1-3/4	2	3	1	1-1/8	1	6-7/16	30.6	8.6	87
16	406	1-15/16	2-3/16	3-3/8	1-1/8	1-1/4	1-1/8	6-7/8	34.9	10.8	118
17	432	2	2-5/16	3-3/8	1-1/8	1-3/8	1-1/8	7-5/16	39.3	12.8	161
18	457	2	2-5/16	3-3/8	1-1/8	1-3/8	1-1/8	7-3/4	44.1	14.6	215
19	483	2-1/8	2-7/16	3-3/4	1-1/4	1-3/8	1-1/4	8-3/16	49.1	17.6	299
20	508	2-1/8	2-7/16	3-3/4	1-1/4	1-3/8	1-1/4	8-5/8	54.5	19.8	382



// Which Sailer propeller is right for you?

Michigan Wheel knows that sailors demand the most out of their vessels. Incremental performance gains when under sail and motor are more significant in a sailing vessel. That is why Michigan Wheel offers a wide variety of options to choose from through it's sailer line of propellers. This gives sailors the ability to work with Michigan's team to find the best propeller for their application, because we know every knot counts.

“M” SERIES

Specifications



DJ-355	
Blades	3
E.A.R.	0.56
Diameter Range	9” - 40”

DQ-469	
Blades	4
E.A.R.	0.70
Diameter Range	17” - 44”

DQ-486	
Blades	4
E.A.R.	0.86
Diameter Range	17” - 44”

M-506	
Blades	5
E.A.R.	1.06
Diameter Range	22” - 46”

Who Should Buy “M” Series Propellers?

Michigan Wheel M-Series propellers are globally sourced to offer a competitively priced product that still meets Michigan Wheel’s strict quality standards. M-Series propellers are built from materials that meet ABS type 2 Manganese Bronze and ABS type 4 NiBrAl specifications.

These propellers meet the performance requirements for a number of different pleasure and commercial applications.

DJ355 and DQ469 propellers are 3 and 4 blade propellers built for a wide range of planing boat applications. DQ486 and M-506 are 4 and 5 blade propellers that utilize greater blade area and skew to handle higher power, diameter constrained applications. M-series propellers are available in range of sizes and special sizes are available by request.



Recreational Applications

Unsure if this is the right propeller for you? Contact your local Michigan Wheel Distributor, or the Michigan Wheel team to review your application.

Excellence in Propulsion.

DJ355 & DQ469 SPECIFICATIONS								DJ355 - 0.55 E.A.R.				DQ469 - 0.69 E.A.R.			
DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE								
9	229	1-3/8	1-1/2	2-1/8	3/4	7/8	3/4	4-1/16	11.7	2.5	7	-	-	-	-
10	254	1-1/2	1-5/8	2-1/4	3/4	1	3/4	4-1/2	14.4	3	12	-	-	-	-
11	279	1-1/2	1-5/8	2-1/4	3/4	1	3/4	4-15/16	17.4	4	19	-	-	-	-
12	305	1-5/8	1-3/4	2-3/8	7/8	1-1/8	7/8	5-3/8	20.7	5	31	-	-	-	-
13	330	1-5/8	1-13/16	2-3/4	1	1-1/8	1	5-7/8	24.3	6	45	-	-	-	-
14	356	1-7/8	2	2-3/4	1	1-1/4	1	6-5/16	28.2	8	65	-	-	-	-
15	381	1-7/8	2	2-3/4	1	1-1/4	1	6-3/4	32.4	9	91	-	-	-	-
16	406	2-1/8	2-3/8	3-1/4	1-1/8	1-3/8	1-1/8	7-1/4	36.9	11	127	-	-	-	-
17	432	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	7-5/8	41.6	14	173	7-5/16	39.1	17	226
18	457	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	8-1/8	46.7	16	227	7-3/4	43.9	20	300
19	483	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	8-1/2	52.0	19	314	8-3/16	48.9	22	394
20	508	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	9	57.6	21	403	8-5/8	54.2	25	505
21	533	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	9-7/16	63.5	26	514	9	59.7	30	643
22	559	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	9-7/8	69.7	29	647	9-7/16	65.5	34	811
23	584	3	3-1/4	4-1/2	1-1/2	2	1-1/2	10-3/8	76.2	34	808	9-7/8	71.6	40	1,010
24	610	3	3-1/4	4-1/2	1-1/2	2	1-1/2	10-5/8	82.9	37	1,004	10-5/16	78.0	45	1,250
26	660	3-3/8	3-3/4	4-7/8	1-3/4	2-1/4	1-3/4	11-3/4	97.3	48	1,480	11-3/16	91.5	57	1,850
28	711	3-3/4	4-1/8	5-3/4	2	2-1/2	2	12-5/8	112.9	62	2,150	12	106.2	73	2,680
30	762	4-1/4	4-5/8	6	2	3	2	13-1/2	129.6	79	3,020	12-7/8	121.9	92	3,770
32	813	4-1/4	4-5/8	6	2	3	2	14-3/8	147.4	90	4,140	13-3/4	138.7	107	5,180
34	864	4-1/4	4-5/8	6-1/2	2-1/4	3	2-1/4	15-5/16	166.5	105	5,610	14-5/8	156.6	125	7,020
36	914	4-5/8	5-1/8	8	2-3/4	3-1/2	2-3/4	16-3/16	186.6	130	7,420	15-7/16	175.5	153	9,260
38	965	4-5/8	5-1/8	8	2-3/4	3-1/2	2-3/4	17-1/16	207.9	147	9,670	16-5/16	195.6	174	12,080
40	1,016	5	5-1/2	9	3	3-3/4	3	18	230.4	183	13,150	17-3/16	216.7	215	16,440
42	1,067	5-3/8	6	10-7/16	3	4	3	-	-	-	-	18	239.0	263	21,070
44	1,118	5-7/16	6-3/16	11	3	4	3	-	-	-	-	18-7/8	262.3	301	26,460

DQ486 & M-506 SPECIFICATIONS								DQ486 - 0.86 E.A.R.				M-506 - 1.06 E.A.R.			
DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE								
17	432	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	8-1/2	45.4	20	282	-	-	-	-
18	457	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	9	50.9	23	374	-	-	-	-
19	483	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	9-1/2	56.7	26	491	-	-	-	-
20	508	2-3/8	2-5/8	3-3/4	1-1/4	1-1/2	1-1/4	10	62.8	30	629	-	-	-	-
21	533	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	10-1/2	69.3	36	799	-	-	-	-
22**	559	2-3/4	3	4-1/8	1-3/8	1-3/4	1-3/8	11	76.0	40	1,010	11-1/4	76.8	48	1,270
23	584	3	3-1/4	Full Taper	1-1/2	2	1-1/2	11-1/2	83.1	47	1,260	11-3/4	83.9	55	1,585
24	610	3	3-1/4	Full Taper	1-1/2	2	1-1/2	12	90.5	52	1,560	12-1/4	91.4	62	1,960
26	660	3-3/8	3-3/4	Full Taper	1-3/4	2-1/4	1-3/4	13	106.2	68	2,310	13-1/4	107.2	80	2,910
28	711	3-3/4	4-1/8	Full Taper	2	2-1/2	2	14	123.2	85	3,340	14-1/4	124.4	101	4,200
30	762	4-1/4	4-5/8	Full Taper	2	3	2	15	141.4	106	4,680	15-5/16	142.8	125	5,890
32	813	4-1/4	4-5/8	Full Taper	2	3	2	16	160.9	124	6,430	16-5/16	162.5	146	8,105
34	864	4-1/4	4-5/8	Full Taper	2-1/4	3	2-1/4	17	181.6	146	8,740	17-5/16	183.4	174	10,980
36	914	4-5/8	5-1/8	Full Taper	2-3/4	3-1/2	2-3/4	18	203.6	178	11,520	18-3/8	205.6	210	14,555
38	965	4-5/8	5-1/8	Full Taper	2-3/4	3-1/2	2-3/4	19	226.8	204	15,020	19-3/8	229.1	242	18,920
40	1,016	5	5-1/2	Full Taper	3	3-3/4	3	20	251.3	250	20,400	20-3/8	253.8	283	24,380
42	1,067	5-3/8	6	Full Taper	3	4	3	21	277.1	291	26,080	21-7/16	279.8	330	31,120
44	1,118	5-7/16	6-3/16	Full Taper	3	4	3	22	304.1	330	32,740	22-7/16	307.1	374	38,980
46	1,168	5-5/8	6-1/4	Full Taper	3	4	3	-	-	-	-	23-7/16	335.7	421	48,480

** Hub Length for the M-506 is full taper.

*WR2 = ±10% in Air (inch squared lbs.)

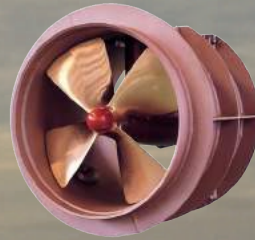
Commercial Propellers



NAKASHIMA
Controllable Pitch



NAKASHIMA
Fixed Pitch



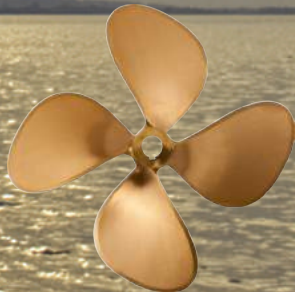
NAKASHIMA
TFN Thruster



NAKASHIMA
TCT Thruster



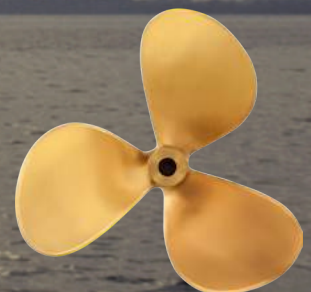
DQ Special



Dura-Quad



Kaplan



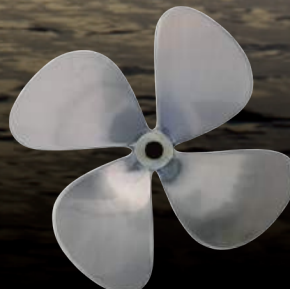
MP-3



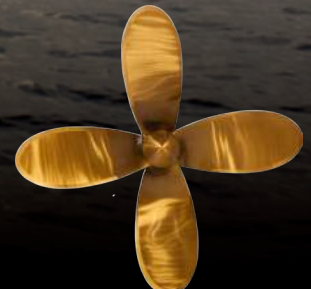
Machine Pitch



Maxima



Pac-Master



Trawler



Work Horse



Work Horse 5



Weedless

WORK HORSE & MACHINE PITCH

Specifications

MACHINE PITCH	
Blades	3
Diameter 9" - 60"	E.A.R. 0.51
Diameter 62" - 96"	E.A.R. 0.47

WORK HORSE	
Blades	4
Diameter 18" - 60"	E.A.R. 0.71
Diameter 62" - 96"	E.A.R. 0.62

WORK HORSE 5	
Blades	5
E.A.R.	0.89

Who Should Buy "Work Horse" Series Propellers?

The Michigan Wheel Work Horse and Machine Pitch propellers are the best known commercial boat propellers in the world. Available in 3, 4, and 5 blade models to cover a wide range of commercial vessels. Non-standard blade areas available by request.

The blade design of Work Horse and Machine Pitch Propellers offers durability as well as performance for workboats that need to maximize bollard thrust when pushing and pulling. High quality materials make repairs by your local prop shop easier and help get your vessel back on the water faster. Commercial mariners trust Work Horse and Machine Pitch propellers to get the job done every day.



Commercial Applications

Unsure if this is the right propeller for you? Contact your local Michigan Wheel Distributor, or the Michigan Wheel team to review your application.

Excellence in Propulsion

MACHINE PITCH & WORK HORSE SPECIFICATIONS										MACHINE PITCH		WORK HORSE		WORK HORSE 5	
DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ. IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE								
9	229	1-5/16	1-7/16	2-1/8	3/4	3/4	3/4	3-7/8	11.8	2.5	13	-	-	-	-
10	254	1-7/16	1-5/8	2-1/8	3/4	7/8	3/4	4-5/16	14.5	3.5	21	-	-	-	-
11	279	1-7/16	1-5/8	2-1/8	3/4	7/8	3/4	4-5/8	17.6	4	34	-	-	-	-
12	305	1-9/16	1-3/4	2-5/8	7/8	1-1/8	7/8	5-1/16	20.9	5	50	-	-	-	-
13	330	1-9/16	1-3/4	2-3/4	1	1-1/8	1	4-15/16	22.7	6	65	-	-	-	-
14	356	1-3/4	2	3	1	1-1/8	1	5-5/16	26.4	8	90	-	-	-	-
15	381	1-3/4	2	3	1	1-1/8	1	5-5/8	30.3	9	120	-	-	-	-
16	406	1-15/16	2-3/16	3-3/8	1-1/8	1-1/4	1-1/8	6-15/16	34.5	11	160	-	-	-	-
17	432	2	2-5/16	3-3/8	1-1/8	1-3/8	1-1/8	6-7/16	38.9	12	210	-	-	-	-
18	457	2	2-5/16	3-3/8	1-1/8	1-3/8	1-1/8	6-7/8	43.6	14	280	17	370	-	-
19	483	2-1/8	2-7/16	3-3/4	1-1/4	1-3/8	1-1/4	7-1/4	48.6	16	350	20	480	-	-
20	508	2-1/8	2-7/16	3-3/4	1-1/4	1-3/8	1-1/4	7-1/2	53.8	18	470	23	630	-	-
21	533	2-7/16	2-13/16	4-1/8	1-3/8	1-1/2	1-3/8	8	59.4	22	590	28	790	-	-
22	559	2-7/16	2-13/16	4-1/8	1-3/8	1-1/2	1-3/8	8-3/8	65.1	25	760	32	1,020	-	-
23	584	2-13/16	3-3/16	4-1/2	1-1/2	1-3/4	1-1/2	8-7/8	71.2	30	940	38	1,250	-	-
24	610	2-13/16	3-3/16	4-1/2	1-1/2	1-3/4	1-1/2	9-1/8	77.5	33	1,140	41	1,510	-	-
26	660	3-3/16	3-5/8	5-1/4	1-3/4	2	1-3/4	9-7/8	91	44	1,710	54	2,280	-	-
28	711	3-1/2	4	5-1/4	1-3/4	2-1/4	1-3/4	10-5/8	105.5	55	2,490	68	3,320	-	-
30	762	3-13/16	4-3/8	6	2	2-1/2	2	11-3/8	124.7	70	3,460	87	4,590	108	6,100
32	813	4-1/4	4-13/16	6	2	3	2	12-3/16	141.8	97	5,960	121	7,920	150	10,526
34	864	4-7/16	5-1/16	6-3/4	2-1/4	3-1/4	2-1/4	12-7/8	160.1	114	7,810	142	10,380	177	13,795
36	914	4-3/4	5-1/2	7	2-1/2	3-1/2	2-1/2	13-5/8	179.5	136	10,350	170	13,750	211	18,274
38	965	5-1/16	5-13/16	7-1/4	2-1/2	3-3/4	2-1/2	14-7/16	200	159	13,200	198	17,540	246	23,311
40	1,016	5-1/16	5-13/16	7-3/4	2-3/4	3-3/4	2-3/4	15-3/16	221.6	177	16,600	221	22,070	275	29,331
42	1,067	5-1/4	6	8	2-3/4	3-3/4	2-3/4	15-15/16	244.3	211	22,620	265	30,090	329	39,990
44	1,118	5-1/4	6	8	2-3/4	3-3/4	2-3/4	16-3/4	268.1	232	27,820	293	37,010	364	49,186
46	1,168	6	6-3/4	10	3	4	3	17-7/16	293.1	285	34,170	354	45,400	440	60,337
48	1,219	6	6-3/4	10	3	4	3	18-1/4	319.1	309	41,290	386	54,900	480	72,962
50	1,270	6-9/16	7-3/8	10-3/4	3	4-1/2	3	19	346.2	362	49,820	447	66,190	556	87,967
52	1,320	6-9/16	7-3/8	10-3/4	3	4-1/2	3	19-3/4	374.5	390	59,370	485	78,900	603	104,858
54	1,371	6-9/16	7-3/8	10-3/4	3	4-1/2	3	20-1/2	408.8	420	70,320	526	93,510	654	124,275
56	1,422	7-5/8	8-3/8	11-1/2	3-1/4	5	3-1/4	21-1/4	434.3	498	83,470	615	110,830	764	147,293
58	1,473	7-5/8	8-3/8	11-1/2	3-1/4	5	3-1/4	21-7/8	465.9	533	97,700	661	129,810	822	172,517
60	1,524	7-5/8	8-3/8	12	3-1/2	5	3-1/2	22-3/4	498.6	572	113,880	713	151,360	886	201,157
62	1,575	9	10	13-1/4	4	6	4	22-1/2	492.8	737	143,870	902	190,790	-	-
64	1,625	9	10	13-1/4	4	6	4	23-1/8	525.1	781	165,830	961	220,060	-	-
66	1,676	9	10	13-1/4	4	6	4	23-15/16	558.4	828	190,420	1,024	252,850	-	-
68	1,727	10-1/2	11-3/4	14-1/2	5	7	5	24-5/8	592.8	987	221,140	1,199	292,710	-	-
70	1,778	10-1/2	11-3/4	14-1/2	5	7	5	25-3/8	628.1	1,039	251,690	1,269	333,450	-	-
72	1,823	10-1/2	11-3/4	14-1/2	5	7	5	26-1/8	664.5	1,094	285,590	1,342	378,650	-	-
74	1,879	10-1/2	11-3/4	14-1/2	6	7	6	26-7/8	702	1,159	340,800	1,436	452,320	-	-
76	1,930	10-1/2	11-3/4	14-1/2	6	7	6	27-9/16	740.4	1,228	388,680	1,529	516,160	-	-
78	1,981	10-1/2	11-3/4	14-1/2	6	7	6	28-1/4	779.9	1,301	441,530	1,626	586,630	-	-
80	2,032	11-1/8	12-1/2	17	6	7-1/2	6	29	820.4	1,493	503,610	1,844	668,350	-	-
82	2,083	11-1/8	12-1/2	17	6	7-1/2	6	29-3/4	862	1,574	568,320	1,952	754,640	-	-
84	2,134	11-1/8	12-1/2	17	6	7-1/2	6	30-7/16	904.5	1,659	639,650	2,064	849,740	-	-
86	2,184	11-1/8	12-1/2	17	6	7-1/2	6	31-3/16	948.1	1,748	718,600	2,183	955,010	-	-
88	2,235	11-1/8	12-1/2	17	6	7-1/2	6	31-15/16	992.7	1,842	805,280	2,308	1,070,600	-	-
90	2,286	11-7/8	13-1/4	18-1/4	6	8	6	32-5/8	1,038.3	2,048	903,200	2,547	1,199,900	-	-
92	2,337	11-7/8	13-1/4	18-1/4	6	8	6	33-3/8	1,085.0	2,150	1,003,950	2,683	1,338,260	-	-
94	2,388	11-7/8	13-1/4	18-1/4	6	8	6	34-1/16	1,132.7	2,256	1,119,400	2,825	1,488,200	-	-
96	2,438	11-7/8	13-1/4	18-1/4	6	8	6	34-13/16	1,181.4	2,263	1,238,750	2,869	1,648,600	-	-

COMMERCIAL

Specifications

DQ SPECIAL	
Blades	4
E.A.R.	0.76 - 0.91
Diameter Range	32" - 56"

DURA-QUAD	
Blades	4
E.A.R.	0.76
Diameter Range	24" - 36"

PAC-MASTER	
Blades	4
E.A.R.	0.69
Diameter Range	20" - 30"
Material	Stainless Steel

Who Should Buy Commercial Series Propellers?

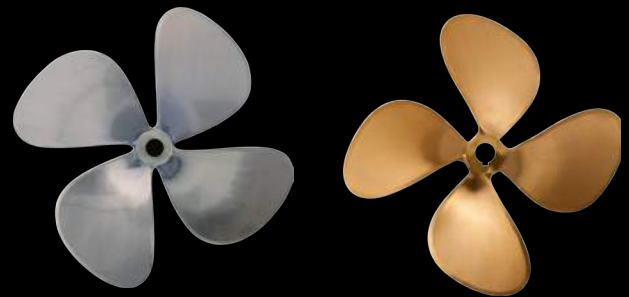
Michigan Wheel Dyna-Quad (DQ) propellers have often been used for medium to higher speed commercial applications. Over the years we have created three specialized styles of DQ propellers that meet the needs of many of today's commercial applications.

The DQ Special propeller offers greater blade area than our standard DQ propellers, allowing today's high powered commercial applications to better control cavitation and effectively convert power into thrust.

Dura-Quad propellers utilize thicker blades to hold up better to heavy use in shallow water and contact with floating debris.

Pacmaster propellers offer the sleek design of DQ propellers for operators who prefer the toughness of stainless steel.

THREE SPECIALIZED LINES OF DQ PROPELLERS THAT MEET THE NEEDS OF MANY OF TODAY'S COMMERCIAL APPLICATIONS.



Commercial Applications

Unsure if this is the right propeller for you? Contact your local Michigan Wheel Distributor, or the Michigan Wheel team to review your application.

Excellence in Propulsion

DQ SPECIAL SPECIFICATIONS (0.86 E.A.R.)

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE				
32	813	4-1/4	4-7/8	FULL TAPER	2	3	2	15-11/16	173.1	128	8,250
34	864	4-1/2	5-1/8	FULL TAPER	2-1/4	3	2-1/4	16-11/16	196.3	152	11,150
36	914	4-7/8	5-9/16	FULL TAPER	2-3/4	3-1/2	2-3/4	17-11/16	219.5	184	14,850
38	965	4-7/8	5-9/16	FULL TAPER	2-3/4	3-1/2	2-3/4	18-5/8	245.5	207	19,270
40	1,016	4-7/8	5-11/16	FULL TAPER	3	3-3/4	3	19-5/8	271.6	233	24,710
42	1,067	5-3/8	6	FULL TAPER	3	4	3	20-5/8	298.8	275	31,620
44	1,118	5-3/8	6	FULL TAPER	3	4-1/4	3	21-9/16	328.5	300	39,630
46	1,168	6	6-3/4	FULL TAPER	3	4-1/2	3	22-9/16	359.6	352	46,690
48	1,219	6	6-3/4	FULL TAPER	3	4-1/2	3	23-3/8	387.5	390	61,190
50	1,270	6-3/4	7-1/2	FULL TAPER	3	5	3	24-7/16	420.5	460	75,570
52	1,321	6-3/4	7-1/2	FULL TAPER	3	5	3	25-7/16	456.2	505	91,460
54	1,372	6-3/4	7-1/2	FULL TAPER	3	5	3	26-7/16	493.3	552	109,740
56	1,422	6-3/4	7-1/2	FULL TAPER	3	5	3	27-3/8	531.9	604	131,130

- Notes: 1. Mass moment of inertia properties calculated using minimum standard bore.
 2. Mass moment of inertia properties calculated using bronze.
 3. Some DQ Specials have blade area other than 0.86.

DURA-QUAD SPECIFICATIONS (0.76 E.A.R.)

DIAMETER		HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)				MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES	MM	AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE	PILOT S.E. BORE				
24	610	3	3-3/8	6	1-1/2	2	1-1/2	1.172	10-7/16	85.5	52	1,780
26	660	3-3/8	3-7/8	6-3/4	1-3/4	2-1/4	1-3/4	1.375	11-5/16	99.9	67	2,650
28	711	3-3/4	4-1/4	7-1/2	2	2-1/2	2	1.578	12-3/16	115.7	85	3,830
30	762	4-1/4	4-7/8	9	2	3	2	1.531	13-1/16	132.1	113	5,420
32	813	4-1/4	4-7/8	9	2	3	2	1.531	13-15/16	151.1	129	7,420
34	864	4-1/4	4-7/8	9	2	3	2	1.531	14-13/16	171.4	148	9,980
36	914	4-5/8	5-1/4	10-1/2	2-3/4	3-1/2	2-3/4	2.164	15-5/8	191.8	176	13,260

PAC-MASTER SPECIFICATIONS (0.69 E.A.R.)

DIAMETER		ROTATION	HUB DIMENSIONS (INCHES)			STANDARD TAPER BORE (INCHES)			MAXIMUM BLADE WIDTH (INCHES)	EXPANDED AREA PER BLADE (SQ.IN)	APPROX. NET WEIGHT (LBS.)	*WR ² (LBS.-IN ²)
INCHES			AFT END	FORWARD END	LENGTH	MINIMUM BORE	MAXIMUM BORE	PILOT BORE				
20 x 18		R	2-3/4	3	4-1/2	1-1/2	1-3/4	1-1/2	8-1/16	54.2	26	627
20 x 20		R	2-3/4	3	4-1/2	1-1/2	1-3/4	1-1/2	8-1/16	54.2	26	627
22 x 18		R	3	3-1/4	4-7/8	1-3/4	2	1-3/4	8-7/8	65.5	34	1,003
22 x 20		R	3	3-1/4	4-7/8	1-3/4	2	1-3/4	8-7/8	65.5	34	1,003
22 x 22		R	3	3-1/4	4-7/8	1-3/4	2	1-3/4	8-7/8	65.5	34	1,003
24 x 20		R & L	3-3/8	3-3/4	5-3/4	2	2-1/4	2	9-11/16	77.8	46	1,545
24 x 22		R & L	3-3/8	3-3/4	5-3/4	2	2-1/4	2	9-11/16	77.8	46	1,545
24 x 24		R & L	3-3/8	3-3/4	5-3/4	2	2-1/4	2	9-11/16	77.8	46	1,545
26 x 20		R & L	3-7/8	4-1/4	6	2	2-1/2	2	10-1/2	90.9	61	2,302
26 x 22		R & L	3-7/8	4-1/4	6	2	2-1/2	2	10-1/2	90.9	61	2,302
26 x 24		R & L	3-7/8	4-1/4	6	2	2-1/2	2	10-1/2	90.9	61	2,302
26 x 26		R & L	3-7/8	4-1/4	6	2	2-1/2	2	10-1/2	90.9	61	2,302
26 x 30		R & L	3-7/8	4-1/4	6	2	2-1/2	2	10-1/2	90.9	61	2,302
28 x 26		R & L	3-7/8	4-1/4	6	2	2-1/2	2	11-1/4	106.2	72	3,303
28 x 28		R & L	3-7/8	4-1/4	6	2	2-1/2	2	11-1/4	106.2	72	3,303
30 x 20		R	3-7/8	4-1/4	6-1/2	2	2-1/2	2	12-1/16	122.5	85	4,633
30 x 28		R & L	3-7/8	4-1/4	6-1/2	2	2-1/2	2	12-1/16	122.5	85	4,633
30 x 30		R	3-7/8	4-1/4	6-1/2	2	2-1/2	2	12-1/16	122.5	85	4,633

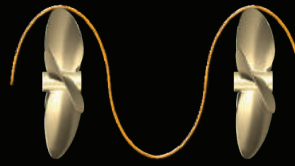
M.W.R. = 0.326

B.T.F. = 0.060

Odd diameter & pitch within 2" of listed are quoted on request.

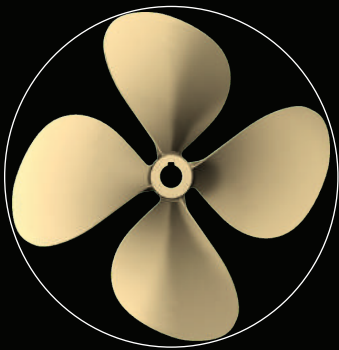
*WR² = ±10% in Air (inch squared lbs.)

// PROPELLER TERMS AND DEFINITIONS



Pitch

The linear distance that a propeller would move in one revolution with no slippage.



Diameter

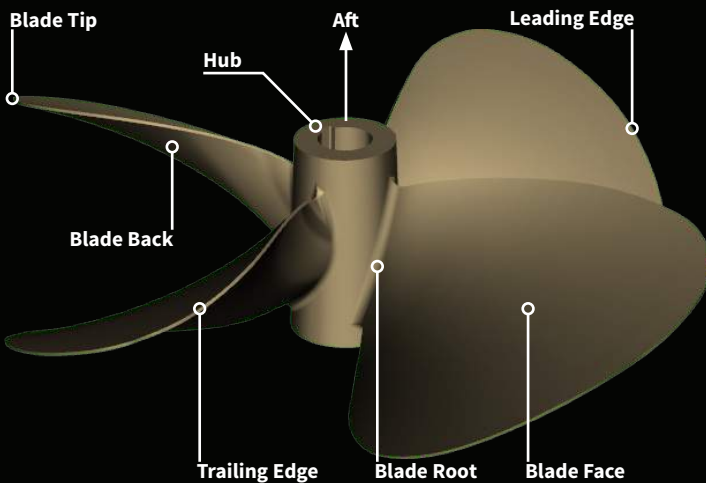
The diameter of the imaginary circle scribed by the blade tips as the propeller rotates.

Blade Number

Equal to the number of blades on the propeller. *(4-blade shown.)*

Radius

The distance from the axis of rotation to the blade tip. The radius multiplied by two is equal to the diameter.



Leading Edge

The edge of the propeller blade adjacent to the forward end of the hub. When viewing the propeller from astern, this edge is furthest away. The leading edge leads into the flow when providing forward thrust.

Trailing Edge

The edge of the propeller adjacent to the forward end of the hub. When viewing the propeller from astern, this edge is closest. The trailing edge retreats from the flow when providing forward thrust.

Blade Tip

Maximum reach of the blade from the center of the hub. Separates the leading and trailing edges.

Blade Root

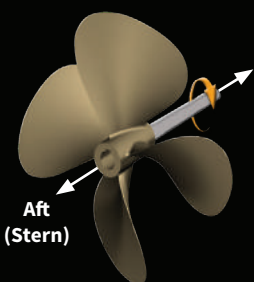
Fillet area. The region of transition from the blade surfaces and edges to the hub periphery. The area where the blade attaches to the hub.

Blade Back

Suction side. Forward side of the blade (surface facing the bow).

Blade Face

Pressure side; pitch side. Aft side of the blade (surface facing the stern).



Rotation

When viewed from the stern (facing forward): Right-Hand propellers rotate clockwise to provide forward thrust; Left-Hand propellers rotate counter-clockwise.

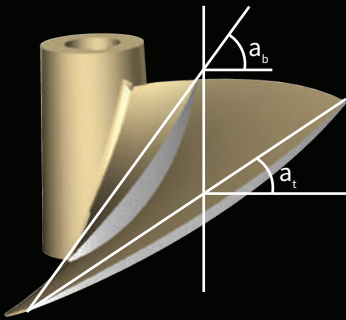
Hub

Solid cylinder located at the center of the propeller. Bored to accommodate the engine shaft. Hub shapes include cylindrical, conical, radius, and barreled.

Cup

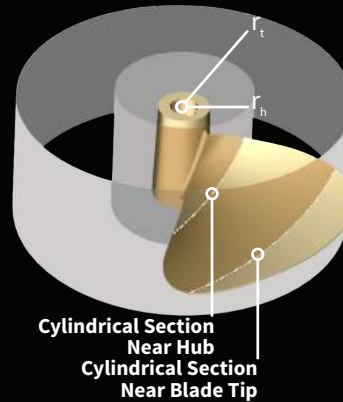
Small radius of curvature located on the trailing edge of the blade.

// PROPELLER TERMS AND DEFINITIONS



Pitch Reference Line

Reference line used to establish the geometric pitch angle for the section. This line may pass through the leading and trailing edges of the section and may be equivalent to the chord line. *(Image shown.)*



Cylindrical Section

A cross section of a blade cut by a circular cylinder whose centerline is the propeller axis of rotation.

r_t = The radius of a cutting cylinder near the tip. The cylindrical section near the tip is located on the surface of this cylinder.

r_h = The radius of a cutting cylinder near the hub. The cylindrical section near the hub is located on the surface of this cylinder.

Track

The absolute difference of the actual individual blade height distributions to the other blade height distributions. Always a positive value, and represents the spread between individual blade height distributions.

Geometric Pitch Angle

The angle between the pitch reference line and a line perpendicular to the propeller axis of rotation.

Controllable Pitch Propeller

The propeller blades mount separately to the hub, each on an axis of rotation, allowing a change of pitch in the blades and thus the propeller.

Fixed Pitch Propeller

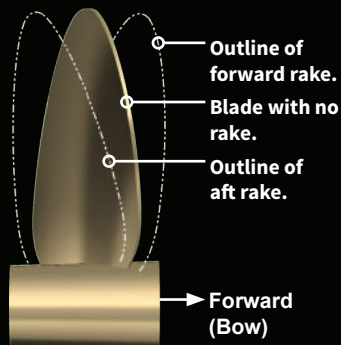
The propeller blades are permanently mounted and do not allow a change in the propeller pitch.

Constant Pitch Propeller

The propeller blades have the same value of pitch from root to tip, and from leading edge to trailing edge.

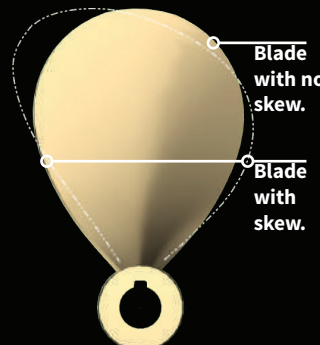
Variable Pitch Propeller

The propeller blades have sections designed with varying values of local face pitch to pitch.



Rake

The fore or aft slant of a blade with respect to a line perpendicular to the propeller axis of rotation.



Skew

The transverse sweeping of a blade such that viewing the blades from fore or aft shows an asymmetrical shape.

Aft Rake

Positive rake. Blades slant toward the aft end of the hub.

Forward Rake

Negative rake. Blades slant toward the forward end of the hub.

Aft Skew

Positive skew. Blade sweep in direction opposite of rotation.

Forward Skew

Negative skew. Blade sweep in the same direction as rotation.

APPROVED S.A.E. STANDARD DIMENSIONS FOR SHAFTS 3/4 TO 3 INCHES IN DIAMETER

Nom Shaft Diameter	Diameter Small End		Taper Length	Keyway Width			Keyway Side Depth (E)		Keyway Fillet Radius (R)		Thread (iii)		Ext. Beyond Taper	Undercut		Dia. of Pin End	Length of Pin End	Cotter-Pin Hole		Cotter-Pin	Nuts (iv)			Keyway Length			
	A	B		D			E	Min	Max	R	F	Dia		Tpi	H			J	K		N	Q	T		W	Sleeve Drive (v)	
				Min	Max	Clearance																				Min	Max
3/4	0.624	0.626	2	0.1865	0.1875	0.097	0.125	0.127	0.162	1/2	13	1-5/16	25/64	1/8	1/4	1-9/64	9/64	1/8	3/4	1/2-13	1/2	5/16	1-1/2				
7/8	0.726	0.728	2-3/8	0.249	0.250	0.127	0.125	0.127	0.162	3/8	10	1-1/4	31/64	1/8	1/4	1-21/64	9/64	1/8	3/4	5/8-11	3/8	3/8	1-25/32				
1	0.827	0.829	2-3/4	0.249	0.250	0.127	0.125	0.127	0.162	3/4	10	1-7/16	19/32	1/8	1/4	1-33/64	9/64	1/8	1	3/4-10	3/4	7/16	2-1/8				
1-1/8	0.929	0.931	3-1/8	0.249	0.250	0.127	0.125	0.127	0.162	3/4	10	1-7/16	19/32	1/8	1/4	1-33/64	9/64	1/8	1	3/4-10	3/4	7/16	2-1/8				
1-1/4	1.030	1.032	3-1/2	0.3115	0.3125	0.160	0.157	0.160	0.16	7/8	8	1-5/8	23/32	1/8	1/4	1-23/32	11/64	5/32	1-1/4	7-8	1	9/16	2-33/16				
1-3/8	1.132	1.134	3-7/8	0.3115	0.3125	0.160	0.157	0.160	0.16	1	8	1-3/4	13/16	1/8	1/4	1-29/32	11/64	5/32	1-1/2	8-9	1	1/2	3-3/16				
1-1/2	1.233	1.235	4-1/4	0.374	0.375	0.192	0.189	0.192	0.16	1-1/8	7	2	29/32	3/16	1/2	2-3/32	11/64	5/32	1-1/2	1-8	1	5/8	3-1/2				
1-3/4	1.437	1.439	5	0.4365	0.4375	0.222	0.219	0.222	0.16	1-1/4	7	2-1/4	1-1/2	3/16	1/2	2-23/64	13/64	3/16	1-3/4	1-14-7	1-1/4	3/4	4-7/32				
2	1.640	1.642	5-3/4	0.499	0.500	0.254	0.251	0.254	0.16	1-1/2	6	2-5/8	1-1/4	3/16	1/2	2-47/64	13/64	3/16	2	1-1/2-6	1-1/2	7/8	4-15/16				
2-1/4	1.843	1.845	6-1/2	0.5610	0.5625	0.284	0.281	0.284	0.32	1-3/4	5	3	1-3/8	3/16	1/2	3-9/64	17/64	1/4	2-1/4	1-34-5	1-3/4	1	5-5/8				
2-1/2	2.046	2.048	7-1/4	0.6235	0.625	0.316	0.312	0.316	0.32	1-3/4	5	3-1/2	1-7/16	3/16	1/2	3-9/64	17/64	1/4	2-1/4	1-34-5	1-3/4	1	6-3/32				
2-3/4	2.254	2.259	7-7/8	0.6235	0.625	0.316	0.313	0.316	0.32	2	4-1/2	4	1-11/16	1/4	1-1/2	3-41/64	17/64	1/4	2-1/2	2-4-1/2	2	1-1/8	6-21/32				
3	2.460	2.462	8-5/8	0.7485	0.750	0.316	0.311	0.314	0.32	2-1/4	4-1/2	4-3/8	1-15/16	1/4	1-1/2	4-1/64	17/64	1/4	3	2-25-4.5	2-1/4	1-1/4	7-11/32				

DIMENSIONS OF SHAFTS FROM 3-1/4 TO 8 INCHES IN DIAMETER

Nom Shaft Diameter	Diameter Small End		Taper Length	Keyway Width			Keyway Side Depth (E)		Keyway Fillet Radius (R)		Thread (iii)		Ext. Beyond Taper	Undercut		Dia. of Pin End	Length of Pin End	Cotter-Pin Hole		Cotter-Pin	Nuts (iv)			Keyway Length			
	A	B		D			E	Min	Max	R	F	Dia		Tpi	H			J	K		N	Q	T		W	Sleeve Drive (v)	
				Min	Max	Clearance																				Min	Max
3-1/4	2.663	2.665	9-3/8	0.7485	0.750	0.316	0.311	0.314	1/8	2-1/2	4	4-3/8	2-1/8	3/8	3/4	4-37/64	3/8	3	2-1/2-4	2-1/2	3/8	3/8	8-1/2				
3-1/2	2.866	2.868	10-7/8	0.8735	0.875	0.313	0.310	0.313	1/8	2-3/4	4	4-3/4	2-1/8	3/8	3/4	4-37/64	3/8	3	2-1/2-4	2-1/2	3/8	3/8	9-1/4				
3-3/4	3.071	3.071	11-3/8	0.8735	0.875	0.313	0.310	0.313	1/8	3	4	4-3/4	2-1/8	3/8	3/4	4-61/64	3/8	3-1/2	2-3/4-4	2-3/4	3/8	3/8	10				
4	3.272	3.274	11-5/8	0.9985	1.000	0.312	0.309	0.312	1/8	3	4	5-1/8	2-1/2	3/8	3/4	5-21/64	3/8	3-1/2	3-4	3-4	3/8	3/8	10-1/2				
4-1/2	3.827	3.829	12-3/4	1.123	1.125	0.376	0.373	0.376	5/32	3-1/4	4	5-5/8	2-3/4	3/8	3/4	5-33/64	3/8	4	3-1/4-4	3-1/4	1/2	1/2	12-5/8				
5	4.249	4.251	14	1.248	1.250	0.438	0.434	0.437	3/16	4	4	6-3/8	2-3/4	3/8	3/4	6-33/64	3/8	4	3-3/4-4	3-3/4	1/2	1/2	15-1/8				
5-1/2	4.671	4.673	13-1/4	1.248	1.250	0.438	0.435	0.438	3/16	4	4	6-3/4	2-3/4	3/8	3/4	6-33/64	3/8	4	4-1/4-4	4	1/2	1/2	16-3/4				
*6	4.791	4.793	14-1/2	1.373	1.375	0.496	0.493	0.496	7/32	4-1/4	4	7-1/2	3-7/8	1/2	1/2	7-1/2	3/8	4	4-1/4-4	4-1/4	1/2	1/2	18-1/4				
*6-1/2	5.187	5.189	15-3/4	1.373	1.375	0.497	0.494	0.497	7/32	4-1/2	4	8-1/4	4-3/8	1/2	1/2	8-1/2	3/8	4	4-1/2-4	4-1/2	1/2	1/2	19-3/4				
*7	5.582	5.584	17	1.498	1.500	0.558	0.555	0.558	1/4	5	4	9	5-1/8	1/2	1/2	9-1/2	3/8	4	5-4	5	3/4	3/4	20-3/4				
*7-1/2	5.978	5.980	18-1/4	1.498	1.500	0.559	0.556	0.559	1/4	5-1/2	4	9-3/8	5-1/8	1/2	1/2	10-1/8	3/8	4	5-1/2-4	5-1/2	3	3	21-1/8				
*8	6.374	6.376	19-1/2	1.748	1.750	0.558	0.555	0.558	1/4	5-3/4	4	10-3/4	5-3/8	1/2	1/2	11-1/4	3/8	4	5-3/4-4	5-3/4	3-1/8	3-1/8	22-3/8				

*6" through 8" shaft has 1 inch per foot taper, 1/12" per inch taper. Angle with centerline is 2° 23' 9"

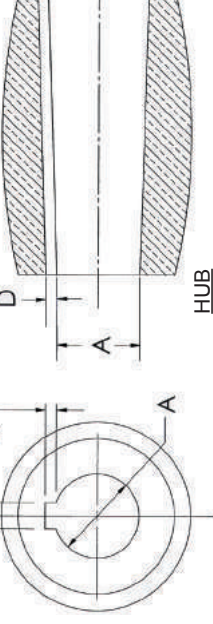
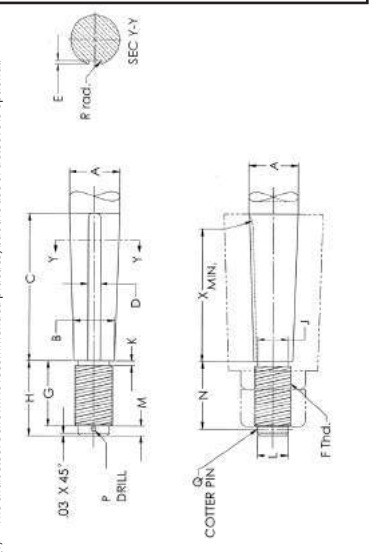
(i) Keyway shall be cut parallel to taper.

(ii) Fillets are recommended for keyways in shafts through 2" in diameter. Fillets are mandatory for shafts above 2" in diameter.

(iii) Threads are United and American Standard, Class 3A.

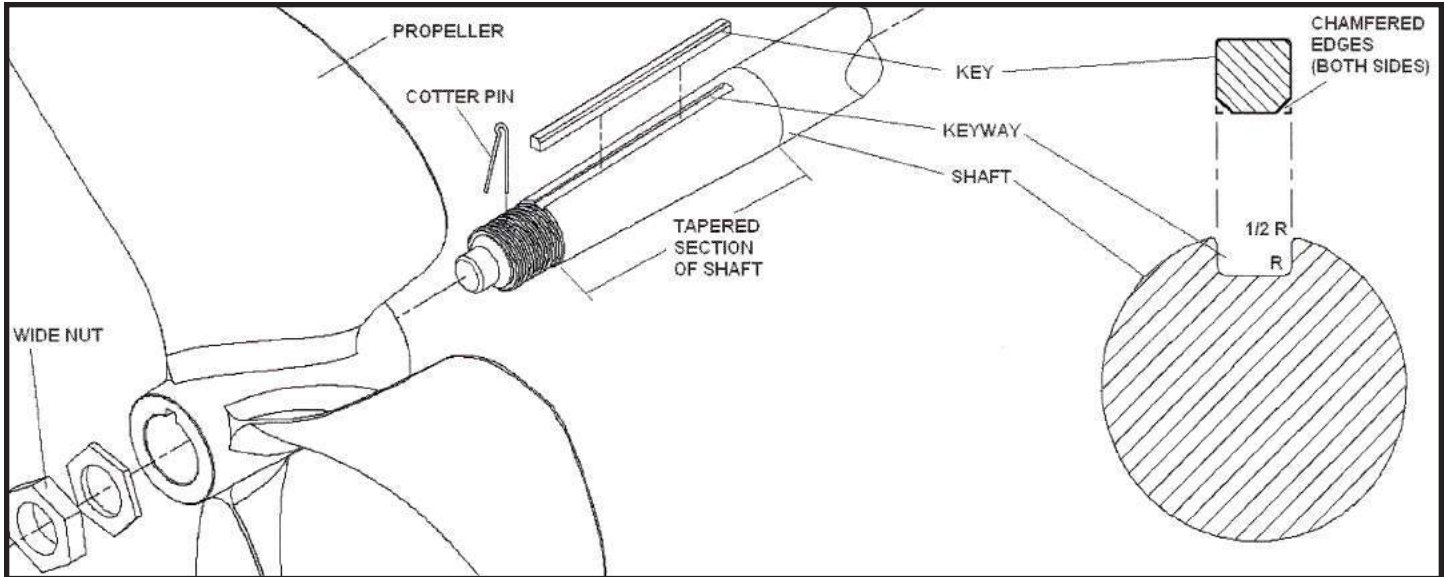
(iv) Nuts are to be semi-finished stock, American Standard B18.2.

(v) The shaft sleeve shown is recommended practice, but the use of a sleeve is optional.



PROPELLER BORING
 To insure retention of inherent factory accuracy, order your propeller factory-bored whenever possible. When bored in the field, propellers should be bored to the pilot hole, NOT to the hub or blade edges.
 *6" through 8" shaft has 1 inch per foot taper, 1/12" per inch taper.
 Angle with centerline is 2° 23' 9".
 Overseas specifications on request.

INBOARD PROPELLER INSTALLATION PROCESS



1. Push propeller snugly onto shaft taper WITHOUT key in either keyway (propeller or shaft).
2. Make sure the propeller is snug and there is no side to side movement by gently moving the propeller back and forth.
3. Make a line on the shaft with a non-graphite marker at the forward end of the propeller where it stops up against the shaft taper.
4. Remove propeller.
5. Put key into keyway on shaft taper with radiused or chamfered corners (down) in shaft keyway. (If propeller shaft keyway has radiused corners.)
6. Put propeller back onto shaft taper.
7. Check to see that the propeller moves back to the forward line made in Step 3. If it does, skip to Step 8. If it does not, perform the following:
 - a. Remove propeller from shaft.
 - b. Place a file on a flat surface area or work bench.
 - c. Run opposite end of chamfered key back and forth over file (to remove any burrs) with a downward pressure on key until side being filed is clean.
 - d. Install cleaned key in shaft keyway with chamfered corner side down in the shaft (the cleaned, filed side up in keyway).
 - e. Replace the propeller on the shaft and fit snugly on taper. Check to see if it reaches the line made as in Step 7. If it does not line up, repeat steps 7a through 7e.

Note: A vise can be used to hold key and then filed, but care must be taken not to tighten too much, causing burrs and irregularities on key.
8. When propeller hub moves to the correct position, install propeller nut on shaft and torque to seat the propeller. Install the torque jam nut also, if your shaft is so equipped.
9. Install cotter pin at the end of the shaft.



Inboard Propeller Sizing Form

Name: _____ Address: _____ Project: _____ Date: _____
 Company: _____ City/State/Zip: _____ Email: _____ Phone/Fax: _____

Boat Information

Manufacturer: _____ Model: _____ Pleasure: Commercial:
 For Fishing, Tug or, Pushboat - Working Speed: _____
 New Model Existing Model Alternative Power Configuration

Boat Type - Use: _____
 Overall Length (LOA): _____ Waterline Length (LWL): _____ Displacement: _____ Pockets: _____
 Beam (B): _____ Draft (T): _____ LCG from Stern: _____
 Deadrise Angle at Stern: _____ Running Trim Angle: _____ Shaft Inclination Angle: _____ Tunnels: _____
 Distance: Shaft Centerline @ Propeller to Bottom: _____ Maximum Desired Propeller Diameter: _____ Desired Number of Blades: _____
 Distance: Shaft Centerline @ Propeller to Waterline: _____ Projected Vessel Speed: _____ Other: _____

Engine Information

Manufacturer: _____ Single: Twin: Triple: Other: Year: _____ Diesel: Gas:
 Engine Rating _____ Shaft: _____ Continuous: _____ Horsepower _____ RPM _____ **Desired Engine RPM:** _____
 Brake: _____ Intermittent: _____ Gear Reduction Ratio: _____

Shaft - Other Information

Shaft-Bore Diameter: _____ Full Taper Hub Requested
 Wake Fraction (WF): _____

Current or Previous Propulsion System Information for This Vessel

Any existing performance information assists in providing a more accurate propeller suggestion.

Engine Information

Manufacturer: _____ Single: Twin: Triple: Other: Year: _____ Diesel: Gas:
 Engine Rating _____ Shaft: _____ Continuous: _____ Horsepower _____ RPM _____ Gear Reduction Ratio: _____
 Brake: _____ Intermittent: _____

Propeller Information

Manufacturer: _____ Model: _____ Diameter: _____ Pitch: _____ Num. blades: _____ Area: _____
 Material: Bronze Stainless Steel NiBRAI Other TE Cup Propeller blade tip to hull clearance: _____
 Notes: _____

Performance

Full Throttle: _____ RPM _____ Vessel Displacement during performance run: _____
 Cruise: _____ Speed _____