

# MICHIGAN MACHINE-DITCH PROPELLERS

The Key  
to Greater  
Boating  
Satisfaction



## OUTBOARD PROPELLER PRICE CHANGES

Effective April 16, 1946

PART NUMBER	NEW PRICE
B 10	
E 2	\$4.50
E 4	3.60
E 8	3.60
E 22	3.60
E 27	3.00
E 32	3.00
E 40	3.00
J 5	2.70
J 30	3.30
J 40	3.30
J 45	3.30
J 58	3.30
J 64	3.30
J 74	3.30
J 76	4.50
M 10	4.50
M 30	3.30
P 51	3.30
S 5	3.30
S 10	3.30
	3.30

For all others, published catalog prices apply (catalog 0-46)

# The KEY TO GREATER BOATING SATISFACTION

The contents of this booklet constitute an almost infallible key wherewith nearly every owner of an outboard motor has quick and easy access to achieving far more enjoyment from his outboard motor and boat — smoother and better performance, more speed, greater carrying capacity, economy of fuel and upkeep, and even additional safety.

To say that all this may be accomplished by simply substituting a MICHIGAN MACHINED-PITCH propeller for the one which came with your motor, or the one you are now using, may seem like a far cry at this point. Yet it is a sound, indisputable fact proven beyond the shadow of doubt, times without number, that these results are almost invariably accomplished when a MICHIGAN propeller, scientifically selected to coordinate the motor, boat and conditions of service, is used.

The reasons for the vast superiority of MICHIGAN MACHINED-PITCH propellers over any other the market affords will be apparent from the description which follows. The means of quickly and easily ascertaining the specific model and size to give best results with your motor and boat, under the conditions in which you will use it, is to be found in the Propeller Selector Chart on pages 8 to 13. The recommendations it contains are soundly based on engineering facts and over 40 years of experience. They have been proven time and again by thousands of motor owners.

With these facts at hand, and a reasonable accurate analysis of your boat and conditions of service, you have the key to a whole of a lot more pleasure from your outboard motor; particularly if you are the owner of one of the medium or larger motors.

Note: While the accuracy of the data in our Propeller Selector Chart in our opinion, is incontestable, variations in hull design, load conditions, fuels and owners' own analysis of his individual unit make it impossible for us to assume responsibility for results obtained. These will be in direct relation to the care and accuracy of the individual's analysis of his boat and service conditions.

## WHY MICHIGAN MACHINED-PITCH PROPELLERS ARE OUTSTANDING PERFORMERS

In any propeller there are four prime factors essential to perfect functioning. These are, Accuracy, Design, Size and the material of which it is made. Imperfection of any one of these factors makes for a poorly performing propeller. Through its patented and exclusive MACHINED-PITCH process of manufacture, which excludes the human variable element, and the development of special alloys these factors are unerringly controlled in the production of MICHIGAN propellers.

### The FACTOR of ACCURACY

In 1930 Michigan astounded the marine field in its announcement of the first MACHINED-PITCH in-board propeller. The improvement in performance was so sensational and so enthusiastically received that subsequently we adapted this method to all outboard propellers of our manufacture, as well.

The basis of the MACHINED-PITCH method of propeller manufacture was the development of the Helical Planing Machine (see illustration). These machines, patented and exclusively a Michigan development, as we have previously stated, eliminate the human element of error or inaccuracy. It carves the original propeller patterns with ABSOLUTE ACCURACY. From these perfect patterns every casting made is bound to be perfect. The process that guarantees perfect accuracy in Michigan Propellers goes much further, however, by applying the precise and undeviating accuracy of the helical planer to every step of the production. This is done through the medium of PITCH BLOCKS having true screw surfaces precisely machined by the helical planer, upon which Michigan propellers are checked through every step of manufacture. For example: Castings are bored on Pitch Blocks, and thus chucked to the pitch of the blade, perfect assurance is had that the shaft hole

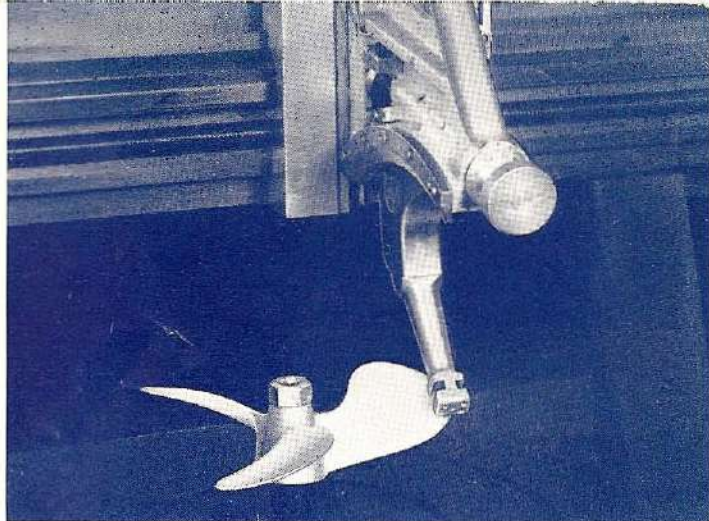


will be perfectly aligned to the pitch. A perfect casting otherwise bored can be out of center and the blades badly out of "track" which results in turbulence of slip stream, loss of power and speed together with excessive vibration. There simply is no possibility of a Michigan Propeller being bored out of true.

After being machined for the shaft, the casting is carefully checked throughout for balance, the blade extremities are brought to a fine feather-edge and it is buffed and polished to mirror-like surfaces. During these operations it is checked again and again on Pitch Blocks — similar to the Pitch Blocks on which it was bored to insure retention accuracy of pitch, blade spacing and layout; for even the slightest variation of these factors can result in excessive vibration and poor performance. Thus it will be seen that absolute accuracy of all manufacturing factors are insured in Michigan as in no other propellers. (For a complete description of the MACHINED-PITCH process write for our inboard propeller catalog.)

### The FACTOR of DESIGN

Michigan's entire engineering staff, backed by over 40 years of experience, is devoted exclusively to making the finest propellers money will buy. And since we are propeller specialists with no distracting side-lines, it is only natural that Michigan should be recognized as the outstanding leaders in the propeller field. This is duly attested to by the fact that we are not only consulted by nearly every manufacturer of outboard motors in relation to propellers for new motors as brought out, but also by the fact that we provide pilot or test propellers. What this all adds up to is that Michigan design is tops — that it provides a generous margin of extra speed, power, durability and smoothness of operation beyond compare. Its designing skill is further attested to by the phenomenal success of our "AQUA-MASTER" propellers, of which more will be said later, and the fact that in the highly competitive outboard racing field, Michigan wheels have consistently driven in the majority of winners, and in fact, in some classes such as "A", "B" and "M" have held *every* record and important win for many years.



*The Helical Planer Machining  
a Michigan Propeller Pattern*

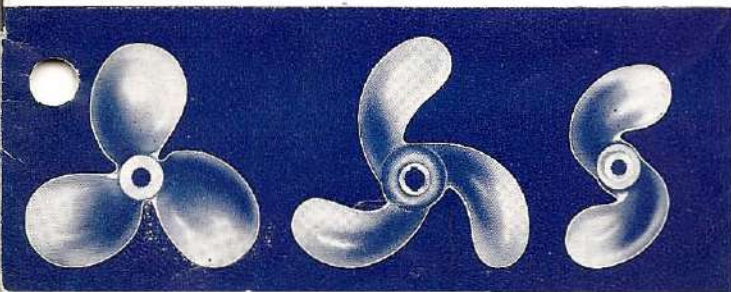


*Checking a propeller  
on a Pitch Block*



*Boring a propeller by the  
Pitch Block Method*

**NO OTHER PROPELLERS  
ARE MADE THIS WAY**



## **The FACTOR of SIZE**

When the outboard motor you buy comes from the dealer's shelf, it is fitted with a propeller that can be only an average satisfactory size and design for the many types of boats on which it can be used. If it is a real small motor the chances are that little can be done in a propeller change to improve results. This is especially true if it is operated on rowboats or other displacement boats where speeds are limited regardless of propeller or power applied. For the medium and large sized motors, however, frequently undreamed of improvements are possible by intelligently coordinating the proper Michigan propeller with the type of boat and service desired. Many times actual boat speed improvements of 4, 6 or even 8 miles per hour have thus been attained.

The Propeller Selector pages following will be found of real aid to every owner in determining whether he can obtain improvements with his outfit. Where a size has been suggested other than that which is now being used, he can be pretty certain that a change of propellers will be productive of decidedly worthwhile results. All recommendations are based on turning the motor at or very close to the engine manufacturer's r.p.m. rating, at full throttle. We do not obtain the results that we do from our propellers through permitting excessive motor speed!

Where requested, individual recommendations will be provided by our engineering department, and analysis forms are available for you to fill out. Simply write for "Outboard Analysis Form."

## **The FACTOR of MATERIAL**

Due to the weight factor we recommend only aluminum alloy for propellers for the very small outboard motors. Here Michigan's cast pure aluminum stands head and shoulders in quality above the die cast aluminum used in most conventional propellers. More costly to manufacture, these propellers necessarily sometimes sell at a higher price, but considering the important function of the propeller and the great affect it has on your boating pleasure, the Michigan aluminum propeller is well worth the small difference in cost.

For heavier motors Michigan propellers are all cast of "MICHALLOY," a special propeller bronze, an exclusive Michigan development which is far higher in tensile strength than ordinary bronze, is readily repairable, and is far more resistant to fresh and salt water corrosion. This is the same outstanding alloy used in our famous inboard propellers.

## **HELPFUL HINTS ON HOW TO GET THE MOST FROM YOUR OUTBOARD MOTOR AND BOAT**

### **FIRST FACTOR TO CONSIDER**

An outboard owner should decide first of all just what he desires from his boat — the extreme speed possible, to the exclusion of other features, or a shade less speed with acceleration, load carrying with minimum loss of speed and handling qualities that make it seem an entirely different outfit. When the last bit of speed, such as is desired for racing, is not required, the latter features are highly desirable and can usually be secured with a propeller that is only a shade less than the fastest.

### **BOATS AND ENGINE R. P. M.**

All dimensions, features and characteristics of a boat greatly influence engine R.P.M. and this is best illustrated by experience in our recent test work. In the test of one popular model engine using the equipment propeller, engine R.P.M. upon two boats (each of different makes), was 4900. However, upon all other of many boats used the R.P.M. ranged from 4000 to 4300. The many factors making up the "character" of a boat makes classification impossible but this example will illustrate our contention that "with most outboard engines one propeller size cannot possibly meet the varying conditions encountered in actual use."

### **TRANSOM HEIGHTS**

Generally speaking, upon boats of proper size, design and good turn of speed for the size engine involved (and reference here is not to racing jobs), the greatest acceleration and speed from any design propeller can be obtained with the wheel running up close to the surface of the water. This is particularly true of many of Michigan's specially designed wheels which can be run nearer the surface of the water without slippage.

There are numerous reasons for running a motor as high on the boat as possible.

FIRST, you can navigate very shallow water with more safety.

SECOND, it is almost impossible to turn over a boat with the propeller operating close to the bottom of the boat. When you throw a boat into a quick sharp turn, it goes into a bank (except flat and near flat bottom boats) and long before this bank becomes dangerous, the propeller is lifted out to

## **SELECT YOUR PROPELLER**

the slipping point and the boat will right itself even if you hold the throttle wide open (which, of course, is not the correct thing to do). On some of the new extremely wide-beam boats, 58" or more, the motor will have to be run some deeper in the water than we would recommend for boats 56" and under. This is due to the wide boat lifting the propeller out too quick and thus really hindering turning ability.

THIRD, your motor can turn the same propeller 100 to 200 R.P.M. more by only raising the motor one inch, if it happens to be running one inch too deep (and most are). This is caused by having to pull one inch more lower unit through the water plus forcing the propeller to run down in solid heavy water instead of up in loose water.

FOURTH, and most important, is Back Pressure. Since the advent of the underwater exhaust, back pressure has been a big problem and the running of the cavitation plate, from which the exhaust is released, as near the surface as possible has given the best answer in all tests that have been made. And with the new design, low pitch, large area Michigan Propellers you are able to run the cavitation plate anywhere from  $\frac{1}{2}$ " below the keel to right up level with the bottom of the keel, and on some jobs higher, *giving you a positive easy carburetor adjustment on an easier starting motor — a cooler running motor — a smoother running motor — a safe outfit — and a positive increase in speed of 2 M.P.H. and up, and in many cases a lot up.*

The best actual height of transom depends upon the motor involved. The safest guide is to carry the cavitation plate  $\frac{1}{4}$ " below the keel or where some of the keel is cut off the motor can still be brought up to  $\frac{1}{4}$ " of keel after cutting. For example, on the Johnson PO and P65 series we have consistently used  $17\frac{1}{2}$ " transom (in some cases as high as  $18\frac{1}{2}$ " without slippage). With the Evinrude Speeditwin and Speedifour, a  $16\frac{1}{2}$ " transom. At these heights you will not get slippage until you pass a 58" beam. On these wide beams somewhat lower transoms will be necessary. In our opinion most standard outboard boats have transoms too low for any motor above 5 H.P.

## BACK PRESSURE

This is supplemental to back pressure discussion above. Another way of relieving back pressure and getting better performance at both high and low speeds, especially in small trolling motors, together with better starting and much easier carburetor adjustments in both large and small motors, is to drill a row of relief holes in the exhaust, beginning just below where top of boat transom is level with the exhaust pipe. Drill holes one half to one inch apart from just below top of transom down to the cavitation plate, starting with  $\frac{1}{8}$ " holes at the top and increasing size as you go down to  $\frac{3}{16}$ " or  $\frac{1}{4}$ ", or drill  $\frac{1}{8}$ " holes all the way down. This will improve the motor in every way and if the relief holes are kept below the top of the transom any difference in exhaust noises will be extremely small. Even in the most particular locality, this exhaust relief will not be noticeable enough to be even questioned, *unless you drill too large holes.*

## YOUR BOAT

Now comes the question of your boat in general. In event of a deep keel, you can cut the keel down to about  $\frac{1}{2}$ " at the transom and taper it up to original height about two feet forward of transom without changing the performance in any manner. This will allow you to raise the motor another inch or so giving additional speed and performance.

Most of the later design Michigan Propellers are intended to give maximum results on a *straight lined boat bottom*. Many boats today have or develop a hook in the bottom or an inverted curve upward just forward of the transom. This hook is intended to give the boat easy planing and a level ride with a small motor, let us say, under 16 H. P. This curve is not necessary for a level ride and is very detrimental with larger motors, except where there is a very narrow beam. The faster you drive it the more and more the nose of the boat is pulled down in the water causing it to push water and dive through waves and an extreme hook will cause a boat to gallop at high speed.

Also, this hook will develop in a new or old boat that was originally straight. It is caused by warp, swelling of transom, placing on trailer or hoisting with load being taken one or more feet forward of the transom and from the natural pull of the motor which pulls out at the top of transom causing the knee attached to transom to lift upward on bottom of boat. This strain, naturally, is much greater with the larger and more powerful motors and many boats on which the larger motors are used are not sufficiently rigid to resist this "pull" and the hook described above is constantly present under operation. In some instances, a flexible bottom boat will check straight but when running the bottom is hooked or lifted.

If you have a boat with which a series of propellers will not show a reasonable improvement in speed or if you want top performance and riding qualities, turn your boat upside-down, new or old and check the keel line and bottom lines with a straightedge. If you find it out of line, put in one-by-six pieces across boat under front and back of rear seat anchored to sides of boat seat rail and put permanent wedges under these one-by-sixes until you have forced the bottom in line and it will stay that way. If bottom happens to be out of line the opposite way, pull the bottom up until in line and anchor to the one-by-sixes, then put her on the water and nine times out of ten, you will be repaid more than you even dream of for your simple job. Then and then only will you be able to get the benefit of a propeller designed to run on a straight lined boat bottom.

## INFLUENCE OF WEIGHT DISTRIBUTION

Most outboard boats are sensitive to weight distribution. Again, an example is the best explanation: in the test of an Evinrude Speeditwin on a 1940 model 14 ft. by 54 in. boat with a 240 pound man driving and a 160 pound man in the front seat, the speed was one full M.P.H. faster than with the 160 pound man driving and the 240 pound man in front. This is typical of the result of "putting down" the nose of the boat.

# from the Propeller Chart on Pages 8 to 13

What's a vacation or fishing trip without the use of your motor —  
carry a spare propeller.

## TWO BLADE vs. THREE BLADE PROPELLERS

Generally speaking, with engines of sufficient power to plane a good boat, an owner can in many cases expect to obtain highest possible speed with a two blade wheel, if his outfit is in shape for peak performance. However, in most of these cases, the extra speed from the two blade wheel (excepting on a hydroplane) is very small and for the average owner does not offset the inherent greater smoothness of the three blade wheel and greater load carrying capacity, etc. Also, it is true in so many cases that it is easier to obtain a proper propeller "fit" with a three blade wheel.

Some two blade wheels do offer some difficulties with certain engines, such as proper cooling with some Johnson outboard motors. For example on all Johnson 24 and 22½ H.P. motors from P50 up to and including all PO models, the 10 x 14 two blade Michigan wheel (J1197) is the fastest wheel available. However, this wheel cannot be used for displacement boats or for slow speed operation, due to the limited diameter and area retarding water circulation. Hundreds of these 10 x 14 two blades have been used with splendid results but close to full engine speed must be maintained for proper water circulation.

In contrast to this, however, some two blades, such as the Michigan JW28 for the Johnson KA, not only give maximum and improved efficiencies but also offer no problem in relation to cooling either at high or low speeds. The blade design plus its operation closer to the water pick up maintains a pressure that is ample compared to any three blade wheel.

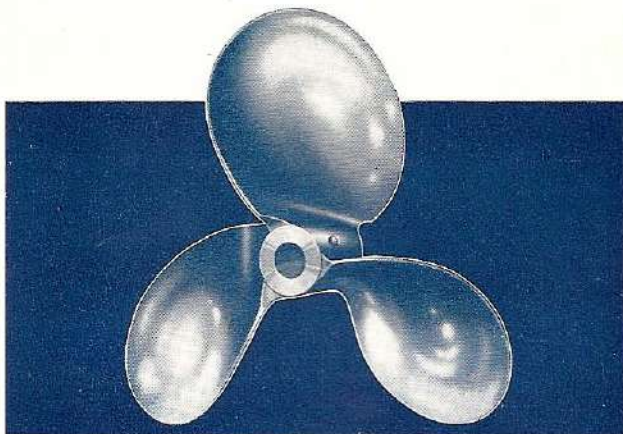
## SPARK AND THROTTLE SETTING

If you, like many owners, are trying to bring your outfit to peak performance, do not forget that in installing a new propeller or working on your boat, the correct spark lever setting and carburetor setting must be found. For example if a change is made resulting in 200 or 300 more R.P.M. this will allow you to run more spark advance which, if not set correctly, will not show you the results you should get.

## CARBURETOR ADJUSTMENT

This subject, although only indirectly related to propellers, is so important it deserves emphasis. The tendency of many outboard owners is to adjust the carburetor to the leanest point — a very definite fallacy, for the leaner the adjustment, the less lubrication there is, and it is safe to say that many motors have been burned out for this very reason. Often, an owner tries to lean up a carburetor to eliminate smoking when excessive oil is used, or an oil that smokes easily (there is much difference in oils in this respect).

Always adjust your carburetor to the rich point. It is not advisable to attempt a final adjustment until the motor has run 100 yards or more wide open (in fact, it is impossible until then). The reason is that a two cycle engine will overfill the crankcase every time you slow it down or start it off and it takes 100 yards or more to clean the crankcase to where correct adjustment can be obtained.



## The MICHIGAN "AQUA-MASTER" The Propeller of Propellers for Larger Outboard Motors

A few years ago Michigan introduced the Outboard version of our highly popular inboard "AQUA-MASTER." It immediately became recognized as the most sensationally performing propeller ever offered for service motors. In the following pages many new "AQUA-MASTERS" will now be found listed, and the range has been expanded to include motors down to the 6 h.p. jobs of some makes. Any owner of a motor of this size using a well designed runabout or utility certainly owes it to himself to own one of these propellers.

The prime reasons for this statement are: Better boat speeds, smoother performance and more flexible operation under varying load conditions. Every "AQUA-MASTER" carries Michigan's guarantee of complete satisfaction. If on trial it does not thoroughly come up to your expectations, if it doesn't give you far better boating performance, you are entitled to return it to the dealer from whom you purchased it for full refund or credit on a standard style propeller. No other outboard propeller in the world carries such a guarantee!

In addition to the above there are several other reasons for preferring the "AQUA-MASTER." They are more sturdy in design and construction. Their design is practically full weedless and it tends to deflect or ward off drift and debris with less damage to the blades than would be suffered by the conventional propeller. Furthermore, their usual shorter diameter and greater blade width enables their use closer to the surface (see preceding paragraphs regarding Transom Heights and Back Pressure on page 5).

**No propeller will perform smoothly, efficiently if bent or thrown out of balance.  
Own a spare to use while damaged wheel is reconditioned.**

# Typical of What Others Say About The "AQUA-MASTER"

## ALL TESTS SHOW MORE SPEED, SMOOTHER PERFORMANCE

We are pleased to advise you that we found your Michigan Aqua-Master to be a prime factor in stepping up outboard motor boat performance. In every case a noticeable increase of speed and carrying capacity was gained by installation of the Aqua-Master propeller . . . a higher degree of smooth motor performance. We believe that your Aqua-Master is generally accepted in the outboard field as the peak of perfection.

Schuler Marine Sales — Russels Point, Ohio

## WITHOUT EXCEPTION USERS INCREASED BOAT SPEEDS 2 TO 5 MILES PER HOUR

Time after time this past season we sold these AQUA-MASTERS with a clear understanding that they might be returned if there was not a definite improvement in boat speed. Without exception these propellers remained sold and we received reports from users that they were receiving increased boat speed ranging from two to five miles per hour, depending on the outfit.

Oluf Mikkelsen — New York City

## LESS LOSS IN SPEED PER PASSENGER ADDED

We learned that our losses per passenger added was two and one-half to three and one-half miles per hour with 22 H.P. and 33 H.P. motors with two blade propellers properly matched to the job; and then came the surprise — we found our losses with the three blade Aqua-Masters properly matched to the job to be one mile per hour and less. Furthermore, we had much better boat control with the three blade Aqua-Master . . . If you have checked the number of propellers we sold this year you will have already gotten the answer.

Everett Motor Company — Tulsa, Oklahoma

## SPEED INCREASE AND PERFORMANCE BEYOND EXPECTATIONS

Regarding the new Aqua-Master outboard propellers we wish to advise that our customers that purchased the Aqua-Master propellers have told us they received an increase in speed and performance beyond their expectations . . . all of our best performing outboards are equipped with the Aqua-Master.

Jenkins Marine Motor Sales — Baltimore, Md.



*Above: Thompson Sea Skiff and Evinrude Speedi-four equipped with AQUA-MASTER propeller. Photo courtesy of Oluf Mikkelsen.*

*Other AQUA-MASTER equipped boats below.*



## MICHIGAN PROPELLER SELECTOR — FOR ELTO MOTORS

MOTOR	MODEL NO.	YEAR	Michigan Equiv. Original Propeller	Row Boat	Kayak and Car- Top	RUNABOUT 11'-14'		RUNABOUT 14'-17'		Racing Hydro.	Outboard Cruiser, Work Boat, Etc.
						150 to 350 lbs.*	350 to 600 lbs.*	150 to 350 lbs.*	350 to 600 lbs.*		
Ace.....	4145, 4205 4256, 4301, 4329, 4351, 4352	1936-37 1938-39-40-41	E22 E27	E22 E27	E22 E27	.....	.....	.....	.....	.....	.....
Big Quad.....	800, 820	1931-32	E281	.....	.....	AM61	AM61	AM61	AM60	E283	E277
Cub.....	4264	1939-40-41	E2	E2	E2	.....	.....	.....	.....	.....	.....
Fisherman.....	413, 4018, 4095	1932-33-34-35	E296	E296	E296	.....	.....	.....	.....	.....	.....
Fleetwin.....	4038 4335, 4336	1934 1939-40-41	E291 EW40	.....	.....	AM80 AM80	AM80 AM80	AM80 AM80	AM81 AM81	E294 E294	E293 E293
Foldlight.....	162, 404	1930-31	B10	B10	B10	.....	.....	.....	.....	.....	.....
Handifour.....	4219	1937	E522	.....	.....	E522	E522	E522	.....	.....	.....
Handitwin.....	4158, 4212, 4261 4307, 4332, 4357, 4358	1936-37-38 1939-40-41	E32	E32	E32	.....	.....	.....	.....	.....	.....
Junior Quad.....	900 914, 924	1931 1932-33	E251 E304	.....	.....	AM10 AM42	AM10 AM41	AM11 AM45	E248 AM45	E258 E309	E248 E365
Lightweight.....	90000, 309 401, 411 444	1929-30 1931-32 1933	E232 E242 E296	E232 E242 E296	.....	.....	.....	.....	.....	.....	.....
Lightweight Special.....	360	1931	E242	E242	.....	.....	.....	.....	.....	.....	.....
Lightwin.....	4020 4099 4313, 4314	1934 1935 1939-40-41	E512 E322 E196	.....	E198	.....	.....	.....	.....	E198	.....
Lightwin Imperial.....	4032 4106	1934 1935	E512 E322	.....	.....	.....	.....	.....	.....	.....	.....
Lightfour Imperial.....	4044	1934	E512	.....	.....	E512	E512	E512	E512	.....	.....
Pal.....	4203, 4253, 4266	1937-38-39- 1940-41	E40	E40	E40	.....	.....	.....	.....	.....	.....
Quad.....	70000-75000	1928	E211	.....	.....	E211	E211	E214	E214	E216	E214
Service A.....	424	1932-33	E291	.....	.....	AM80	AM80	AM80	AM81	E294	E293
Service Speedster.....	60000-69999 80000H-89999H, 300, 348	1928 1929	E201	.....	.....	E201	E201	E201	E204	E206	.....
Service Speedster Hi Speed.....	302	1930	E201	.....	.....	E201	E201	E201	E204	E206	.....
Special Speedster.....	340, 905	1929-31-32-33	E246	.....	.....	E246	E246	E246	E246	E249	.....
Senior Speedster.....	310	1930-31-32	E251	.....	.....	AM10	AM10	AM11	E248	E258	E248
Service Twin.....	4161, 4163, 4151 4216, 4229	1936 1937	E296 E296	E296 E296	E296 E296	.....	.....	.....	.....	.....	.....
Speeditwin.....	6004, 6015, 6018 6034	1934-35-36 1938	E261 EW2	.....	.....	AM50 AM50	AM50 AM50	AM50 AM50	AM51 AM51	E267 E267	E263 E263
Speediquad.....	7004, 7013	1934-35	E271	.....	.....	AM62	AM62	AM61	AM60	E283	E277
Senior Quad.....	314, 700, 721, 732	1930-33	E272	.....	.....	AM62	AM62	AM61	AM60	E283	E277
Sportfour.....	9004, 9013	1934-35	E360	.....	.....	AM42	AM41	AM45	AM45	E309	E365
Super Single.....	436, 4008, 4010	1933-34	E237	E237	E237	.....	.....	.....	.....	.....	.....
Super "A".....	422, 456	1932-33	E291	.....	.....	AM80	AM80	AM80	AM81	E294	E293
Super "C".....	605, 624, 638	1931-32-33	E261	.....	.....	AM50	AM50	AM50	AM51	E267	E263

\*Weights indicated are passenger and equipment loads exclusive of motor.



# MICHIGAN PROPELLER SELECTOR — FOR EVINRUDE MOTORS

MOTOR	MODEL NO.	YEAR	Michigan Equiv. Original Propeller	Row Boat	Kayak and Car-Top	RUNABOUT 11'-14'		RUNABOUT 14'-17'		Racing Hydro.	Outboard Cruiser, Work Boat, Etc.
						150 to 350 lbs.*	350 to 600 lbs.*	150 to 350 lbs.*	350 to 600 lbs.*		
Big Four	802, 814	1931-32	E281			AM61	AM61	AM60	AM60	E283	E277
Fastwin	R-RS	1927	V836	V836							
	H-1H-13H	1928-29	V821			V821	V821	V823	V823	V825	
Fisherman	4016, 4093	1934-35	E296	E296	E296						
	4227, 4267	1937-38									
	4309	1939	E196	E196	F198	AM121	AM120	AM120	E199	E198	
Fleetwin	F, 1F, 4F	1928-29	V818	V818		V818	V818	V818	V818		
	418, 450, 4034	1932, 33, 34	E291			AM80	AM80	AM80	AM81	E294	E293
Foldlight	162, 403	1930-31	B10	B10	B10						
Lightfour	4231, 4271, 4315, 4316, 4317, 4322, 4323, 4324, 4375-7	1937-38-39-1940-41	E342			AM70	AM71	AM71	E446	E346	E446
Lightfour Imperial	4042	1934	E512			E512	E512	E512	E513		E513
	4111-4178	1935-36	E342			AM70	AM71	AM71	E446	E346	E446
Lightwin	402, 407	1931-32	E242	E242	E242						
	442, 4020	1933-34	E296	E296	E296						
	4097, 4153	1935-36	E322	E322	E322	E322					
	4221, 4289	1937-38	E422	E422	E422	E422					
Lightwin Imperial	4102, 4165	1935-36	E332	E332	E332	E332					
Mate	4263	1939-40-41	E2	E2	E2						
Ranger	4252, 4265, 4334, 4406, 4407	1938-39-40-41-1946	E40	E40	E40						
Scout	4201	1937	E40	E40	E40						
Speedifour	704, 715	1931-32	V861			AM150	AM150	AM150	V851	V862	V853
	728, 7022	1932-37	E271			AM62	AM62	AM61	AM60	E283	E277
	7026, 7031, 7032	1939-40-41	EW6			AM62	AM62	AM61	AM60	E283	E277
		1946	EW20			AM172	AM172	AM171	AM170		
Speeditwin	U1-U5	1928	V831			V831	V831	V831	V833		V833
	1U, 15U, 143, 156, 167	1929-30-31	V841			AM130	AM131	AM130	V844	V849	V844
	601, 618	1931-32	V851			AM140	AM141	AM140	V853	V857	V853
	634, 6000, 6011, 6041	1933-34-35	E261			AM50	AM50	AM50	AM51	E267	E263
	6039	1939-40-41	EW2			AM50	AM50	AM50	AM51	E267	E263
		1946	EW10			AM160	AM160	AM160	AM161		
Sportfour	902	1931	E251			AM10	AM10	AM11	E248	E258	E248
	912, 9200, 9000	1932-33-34	E304			AM42	AM41	AM45	AM45	E309	E365
	9008, 9015, 9022	1935-36-37	E360			AM42	AM41	AM45	AM45	E363	E365
	9026, 9031, 9035	1938-39-40-41	EW7			AM42	AM41	AM45	AM45	E363	E365
Sport Single	432, 4000, 4002	1933-34	E237	E237	E237						
Sportsman	4091	1935	E22	E22	E22						
	4146, 4207	1936-37	E27	E27	E27						
	4285, 4296, 4346, 4364, 4365	1938-39-40									
		1941-46	E4	E4	E4						
Sportwin N-NS	1500-10,000	1923-25									
	10500-14750	1926-27	V128	V128	V128						
	183	1931									
	409, 476	1932-33	E296	E296	E296						
	4156, 4209	1936-37	E32	E32	E32						
	4287, 4303, 4353	1938-39-40	E8	E10	E8						
		1941-1946									
Sturditwin	420	1932-33	E291			AM80	AM80	AM80	AM81	E294	E293
Weedless Fisherman	4092, 4152, 4269, 4312	1935-36-38-39	E313	E313							
Zephyr	4359, 4361, 4362, 4363, 4378, 4379, 4381, 4382, 4402, 4403, 4404, 4405	1940-41-46	E196	E196	E196	AM121	AM121	AM120	E199	E198	

\*Weights indicated are passenger and equipment loads exclusive of motor.

**Carry a spare propeller to slip on when a damaged propeller would otherwise spoil your boating pleasure.**

# MICHIGAN PROPELLER SELECTOR — FOR JOHNSON MOTORS

MODEL NO. OF MOTOR	Johnson Propeller Part No.	Michigan Equivalent Original Propeller	Row Boat	Kayak and Car-Top	RUNABOUT 11'-14'		RUNABOUT 14'-17'		Racing Hydro.	Outboard Cruiser, Work Boat, Etc.
					150 to 350 lbs.*	350 to 600 lbs.*	150 to 350 lbs.*	350 to 600 lbs.*		
A Lightwin.....	13-67	J110	J110	M26	J110	J110	M27			
A 25.....	13-569	J112	J112	J110	J112	J112				
A 35, 45.....	13-378	J114	J114	J114	J114	J114				
A 50, 65, 70, 75, 80, AA 37	25-73	J140	J141	J141	J141	J141	J140	J140		
AB 25.....	13-623	J113	J112	J110	J112	J112				
AT 39, 10.....	41-279	J14	J17	J18	J18	J17	J17			
BN Lightwin.....	13-67	J110	J110	M26	J110	J110	M27			
DS 37, 38.....	41-277	J10	J10	J10						
DT 37, 38, 39, 10.....	41-279	J14	J17	J18	J18	J17	J17			
F 70.....	38-64	J80	J80	J80						
F 75.....	37-159	J84	J84	J84						
HA 39, 10.....	43-260	J30	J30	J30						
HA 15.....	300-034	J40	J40	J40						
HA 20.....	300-558	J52	J52	J52						
HD 39, 10.....	43-260	J30	J30	J30						
HD 15.....	300-034	J40	J40	J40						
HD 20.....	300-558	J52	J52	J52						
HS 39, 10.....	43-260	J30	J30	J30						
HS 15.....	300-034	J40	J40	J40						
HS 20.....	300-558	J52	J52	J52						
J 5, 65.....	11-22	J90	J90	J90						
J 70.....	12-78	J94	J94	J94						
J 75.....	11-123	J96	J96	J96						
J 80.....	39-91	J86	J86	J86						
K 35.....	15-103	J118	J118		J118	J118	J121	J121	J120	
K 40, 45.....	15-153	J122	J122		J122	J122	J125	J125	J1222	J125
K 50, 65, 70, 75, 80.....	27-57	J144			AM100	AM101	AM100	AM101	J149	J144
KA 37, 38, 39, 10.....	27-73	J145								
	27-207	J182								
	27-275	J23								
	27-297	J22			AM21	AM20	AM21	AM20	J24	J21
KD 15.....	300-431	JW 27			AM21	AM20	AM21	AM20	J24	J21
KS 15.....	300-431	JW 27			AM21	AM20	AM21	AM20	J24	J21
LS 37, 38.....	41-277	J10	J10	J10						
LT 37, 38, 39, 10.....	41-279	J14	J17	J18	J18	J17	J17			
MD 15.....	300-247	J58	J58	J58						
MD 15, 20 Shock Absor.....	300-275	J45	J45	J45						
MD 38, 39.....	43-2	J5	J5	J5						
MS 15.....	300-247	J58	J58	J58						
MS 15, 20 Shock Absor.....	300-275	J45	J45	J45						
MS 38, 39.....	43-2	J5	J5	J5						
OA 55, 60.....	32-11	JA 1	JA 1	JA 1						
OA 65.....	31-149	JA 6	JA 6	JA 6						
OK 55, 60.....	34-11	JK1			JK1	JK1	JK1	JK4		JK4
P 30, 35, 40, 45.....	17-92	J165			J128	J164	J128	J162	J131	J162
	17-94	J162								
	7-109	J126								
	23-29	J175								
	23-28	J1202								
P 50, 65, 70, 75, 80, PO 37, 38, 39, 10, 15.....	23-38	12x13 2-Blade			J1197	AM32	AM31	AM30	J1198	J176
	23-126	J176			AM32					
	29-175	J174								
	21-288	J151								
S 45, 65, 70, SA, SE.....	21-292	J153			AM110	AM111	AM110	J155	J156	J160
	21-452	J154								
SD 10.....	J277				J277	J277	J277	J273		
TD 15.....	300-559	J1	J1	J1	AM91	AM90	AM91	AM90		J4
TS 15.....	300-559	J1	J1	J1	AM91	AM90	AM91	AM90		J4
	23-39	J175								
	23-32	J1203								
V 45, 65, 70, VA, VE50.....	23-28	J1202			AM32	AM32	AM32	AM30	J1708	J176
	23-38	J174								
	23-126	J176								
100, 110.....	11-176	J64	J64	J64						
200, 210.....	37-170	J74	J76	J76						
300.....	39-91	J86	J86	J86						

\*Weights indicated are passenger and equipment loads exclusive of motor.

# MICHIGAN PROPELLER SELECTOR — FOR CHAMPION OUTBOARD MOTORS

MODEL OR SERIAL	MOTOR	YEAR	Champion's Part No.	Michigan's Part No.	Rowboat — Round or Flat Bottom	Kayak and Cartop to 75 Lbs.	RUNABOUT 11'-14'	
							150 to 350 lbs.*	350 to 800 lbs.*
Standard Single.....	A	1935	1A126	P44	P44	P44	.....	.....
Standard Single.....	1B	1936	1A126	P44	P44	P44	.....	.....
Lite Twin.....	2B	1936	1A126	P44	P44	P44	.....	.....
Senior Twin.....	3B	1936	3B126	P60	P60	P62	<b>P60</b>	<b>P60</b>
Standard Single.....	S1C	1937	1A126	P44	P44	P44	.....	.....
DeLuxe Single.....	D1C	1937	D1C126	P47	P47	P47	.....	.....
Standard Lite Twin.....	S2C	1937	1A126	P44	P44	P44	.....	.....
DeLuxe Lite Twin.....	D2C	1937	D2C126	P48	P48	P48	.....	.....
DeLuxe Senior Twin.....	D3C	1937	3C126	P60	P60	P62	<b>P60</b>	<b>P60</b>
Red Flash.....	R1C	1937	1A126	P44	P44	P44	.....	.....
Standard Single.....	S1D	1938	1A126	P44	P44	P44	.....	.....
DeLuxe Single.....	D1D	1938	D1C126	P47	P47	P47	.....	.....
Standard Lite Twin.....	S2D	1938	1A126	P44	P44	P44	.....	.....
DeLuxe Lite Twin up to Model No. D2D3000.....	D2D	1938	D1C126	P50	P50	P50	.....	.....
From D2D3000 up.....	.....	.....	D1F126	P91	P91	P91	.....	.....
DeLuxe Senior Twin.....	D3D	1938	3C126	P60	P60	P62	<b>P60</b>	<b>P60</b>
Standard Single.....	S1E	1939	1E126	P51	P51	P51	.....	.....
DeLuxe Single.....	D1E	1939	1E126	P51	P51	P51	.....	.....
DeLuxe Lite Twin.....	D2D	1939	D1F126	P91	P91	P91	.....	.....
DeLuxe Senior Twin.....	D3D	1939	3C126	P60	P60	P62	<b>P60</b>	<b>P60</b>
Standard Single Kingfisher.....	S1F	1940	1E126	P51	P51	P51	.....	.....
DeLuxe Challenger Single.....	D1F	1940	D1F126	P91	P91	P91	.....	.....
Standard Lite Twin Fish Hawk.....	S2F	1940	1E126	P51	P51	P51	.....	.....
DeLuxe Lite Twin-Playboy.....	D2F	1940	D2F126	P70	P70	P73	<b>P73</b>	.....
DeLuxe Single Blue Streak.....	B1F	1940	1E126	P51	P51	P51	.....	.....
Standard Single Kingfisher.....	S1G	1941	1E126	P51	P51	P51	.....	.....
DeLuxe Single Challenger.....	D1G	1941	1E126	P51	P51	P51	.....	.....
Standard Single — Model 400.....	S4G	1941	4G126	.....	.....	.....	.....	.....
DeLuxe Single — Model 400.....	D4G	1941	4G126	.....	.....	.....	.....	.....
Standard Lite Twin — Viking.....	S2G	1941	D2F126	P70	P70	P73	<b>P73</b>	.....
DeLuxe Senior Twin — Electra (Alternate Firing).....	3G	1941	3G126	P80	P80	P80	<b>P80</b>	<b>P80</b>
Single — Ensign.....	M1G	1941	1E126	P51	P51	P51	.....	.....
Single — Commodore.....	M4G	1941	4G126	.....	.....	.....	.....	.....
Lite Twin — Admiral.....	M2G	1941	D2F126	P70	P70	P73	<b>P73</b>	.....
Super Single.....	1H	1942	1H126	.....	.....	.....	.....	.....
Alternate Firing Twin (Electra).....	3H	1942	3G126	P80	P80	P80	<b>P80</b>	<b>P80</b>

\*Weights indicated are passenger and equipment loads exclusive of motor.

**Propeller damage won't lay up your boat if you own a spare propeller.**

## Michigan Propeller Selector for MUNCIE, NEPTUNE, SEAGULL GAMBLE

MODEL OR SERIAL	Muncie's Part No.	Michigan's Equivalent	Rowboat Round or Flat Bottom	Kayak and Cartop to 75 lbs.	RUNABOUT 11'-14'		RUNABOUT 14'-17'		Racing Hydro.	Outboard Cruiser, Work Boats, Etc.
					150 to 350 lbs.*	350 to 600 lbs.*	150 to 350 lbs.*	350 to 600 lbs.*		
Jr. Single 1938-41 1A38, 1A39, 10A1, 11A1 (1.2 and 1.5 h.p.).....	OB100-99	E40	E40	E40	.....	.....	.....	.....	.....	.....
Singles 1933-41 OB1, OB11, OB12, 2A38, 2A39, 10A2, 11A2, 11AA2 (2 and 2.5 h.p.).....	OB1-99	M10	M10	M10	M12	.....	.....	.....	.....	.....
OB2 1930-31 (2.5 h.p.).....	OB2-99	M30	M30	M30	.....	.....	.....	.....	.....	.....
OB3, OB4, OB5 (1931-32) (3-4-5 h.p.).....	OB4-99	M34	M34	M34	.....	.....	.....	.....	.....	.....
Junior Twin 1933-41 OB31, OB32, OB34, OB35, OB38, OB39, 10A4, 11B4.....	OB31-99	M20	M20	M26	M27	.....	.....	.....	.....	.....
Twin OB51, OB61, OB63, OB64, OB51.....		M37	M37	M37	.....	.....	.....	.....	.....	.....
Alternate 1939-41 11A3, 11AA3, 5A39, 10A6, 11A6, 11AA6.....	OB31-99	M20	M20	M26	M27	.....	.....	.....	.....	.....
Imp. Twin 1938-39 6A38, 6A39.....	OB31-99	M20	M20	M26	M27	.....	.....	.....	.....	.....
Alternate 1938-41 9A38, 9A39, 10A10, 11A9, 11AA9....	OB9-99	M60	.....	.....	M65	M65	M65	M65	M62	M63
Master Twin 1931-41-46 OB15, OB16, OB17, 16A-38, 16A39, 10A16, 11B16.....	OB16-99	J154	.....	.....	J151	J150	J154	J160	J156	J160

\*Weights indicated are passenger and equipment loads exclusive of motor.

## Michigan Propeller Selector for MERCURY AND OTHER MOTORS

MOTOR AND MODEL NO.	Standard Michigan Duplicate	Rowboat Round or Flat Bottom	Kayak and Gartop to 75 lbs.	RUNABOUT 11'-14'		RUNABOUT 14'-17'		Racing Hydro.	Outboard Cruiser, Work Boat, Etc.
				150 to 350 lbs.*	350 to 600 lbs.*	150 to 350 lbs.*	350 to 600 lbs.*		
<b>BENDIX</b>									
All Singles, 1940, 2½ h. p.	X5	X7	X5	.....	.....	.....	.....	.....	.....
All Twins, 1940, 4½ h. p.	X20	X24	X20	.....	.....	.....	.....	.....	.....
<b>LAUSON</b>									
Single 1940-41-42 and 1946, 2½ h. p.	L30	L30	L30	.....	.....	.....	.....	.....	.....
<b>LEJAY</b>									
Electric	H50	H50	II50	.....	.....	.....	.....	.....	.....
<b>LOCKWOOD</b>									
Foldlight 1930	B10	B10	B10	.....	.....	.....	.....	.....	.....
Ace 1929-30	L411	.....	.....	L411	L411	L411	L411	L410	.....
Chief 1928-29, 82B-92B	L420	.....	.....	L420	L420	L423	L423	L421	L423
"72-T" 1927	L606	L606	.....	L606	L606	.....	.....	.....	.....
<b>MARTIN</b>									
Twin, 1946	Q10	Q10	.....	Q10	.....	.....	.....	.....	.....
<b>MERCURY</b>									
Singles, 1940, K-1, 2, 3, KB1, KB1A	K8	K8	K8	.....	.....	.....	.....	.....	.....
Twins, 1940, K-4, K-5	K10	K10	K10	.....	.....	.....	.....	.....	.....
Singles, 1941, KB2, KB3	K15	K15	K15	.....	.....	.....	.....	.....	.....
Twins, 1941, KB4, KB5 and Wizzard WB6	K15	K15	K15	.....	.....	.....	.....	.....	.....
<b>SEA KING (Montgomery-Ward)</b>									
Single 2.8 h. p. (by Kiekhaefer)	K8	K8	K8	.....	.....	.....	.....	.....	.....
Single 2 h. p. (by Thor)	T26	T26	T26	.....	.....	.....	.....	.....	.....
Single 1 h. p., No. 377, 381, 469	E40	E40	E40	.....	.....	.....	.....	.....	.....
Single 1.8 h. p., No. 477	E27	E27	E27	.....	.....	.....	.....	.....	.....
Single 1.8 h. p., No. 367	E4	E4	E4	.....	.....	.....	.....	.....	.....
Single, 2.2 h. p., No. 489, 490	E237	E237	E237	.....	.....	.....	.....	.....	.....
Twin, 2.5 h. p., No. 498	W8	W8	W8	.....	.....	.....	.....	.....	.....
Twin, 2.8 h. p., No. 449	E32	E32	E32	.....	.....	.....	.....	.....	.....
Twin, 3.3 h. p., No. 378	E32	E32	E32	.....	.....	.....	.....	.....	.....
Twin, 3 h. p., No. 369, 378, 379	E8	E10	E8	.....	.....	.....	.....	.....	.....
Twin, 4 h. p., No. 400, 416, 491, 494, 499	E242	E242	E242	.....	.....	.....	.....	.....	.....
Twin, 5 h. p., No. 371	E196	E199	E196	AM121	AM120	AM120	AM120	E198	.....
Twin, 8.5 h. p., No. 471, 492, 473	E291	.....	.....	AM80	AM81	AM81	AM81	E294	.....
Twin, 15.2 h. p., No. 375, 376	E222	.....	.....	AM42	AM41	AM45	AM45	E309	E365
Twin, 21.0 h. p., No. 615	V841	.....	.....	AM130	AM131	AM130	V844	V849	V844
<b>THOR</b>									
Single, 1935-36	T20	T20	T20	.....	.....	.....	.....	.....	.....
Single, 1937-38-39	T26	T26	T26	.....	.....	.....	.....	.....	.....
Twin, 1936	T24	T24	T24	.....	.....	.....	.....	.....	.....
Twin, 1937-38	T28	T28	T28	.....	.....	.....	.....	.....	.....
Twin, 1939	T26	T26	T26	.....	.....	.....	.....	.....	.....
<b>WATERWITCH (Sears-Roebuck)</b>									
Single, ¾ 1938-39-40 and 1941 1 h. p.	S5	S5	S5	.....	.....	.....	.....	.....	.....
Single 2.5 h. p. 1936-40 and 1941 2¾ h. p.	S10	S10	S10	.....	.....	.....	.....	.....	.....
Single, 3.5 h. p. 1940-41	S15	S15	S15	.....	.....	.....	.....	.....	.....
Twin, 4.0 h. p. 1936-37-38 and 1939 4¾ h. p.	S20	S20	S25	S23	.....	.....	.....	.....	.....
Twin, 5¾ h. p., 1940-41	S15	S15	.....	S15	.....	.....	.....	.....	.....
Twin, 10 h. p. 1941	S50	.....	.....	S50	S50	S50	S50	.....	.....
Twin, 8.5 h. p.	JK-1	.....	.....	JK-1	JK-1	JK-1	JK-4	.....	JK-4

\*Weights indicated are passenger and equipment loads exclusive of motor.

**Own a spare propeller to use while the original is reconditioned.**

# MICHIGAN PROPELLER PRICE LIST

(All prices are subject to change without notice)

## EVINRUDE — ELTO

Michigan Part No.	Price	Dia. and Pitch	Metal	No. Blades	PROPELLER TO BE USED ON MOTOR MODEL NO.	
E 2	\$ 1.65	5½ x 4¾	AL	2	Evin Mate 4263-Elto Cub 4264-SeaKing Single 1.8 H.P. 367 Evin Sportsman 4285, 4296, 4346, 4364, 4365, 4366, 4367 and 1946 Models Evin Sportwin 4287, 4303, 4353, 4368, 4369, 4371, 4372 and 1946 Models, and Seaking Twin 3 H.P. 369, 3.3 H.P. 378, 379 Evin Sportsman 4091-Elto Ace 4145, 4205	
E 4	2.20	7 x 6	AL	2		
E 8	2.75	7½ x 6	AL	2		
E 10	4.40	7½ x 5½	AL	3		
E 22	1.90	7 x 6	AL	2		
E 27	1.90	7 x 6	AL	2	Evin Sportsman 4146, 4207-Elto Ace 4256, 4301, 4329, 4351, 4352, Sea King Single 1.8 H.P. 477	
E 32	2.20	7½ x 6	AL	2	Evin Sportwin 4156, 4209-Elto Handitwin 4158, 4212, 4261, 4307, 4332, 4357, 4358-SeaKing Twin 2.8 & 3 H.P. 449, 3.3 H.P. 378	
E 40	1.65	6 x 5	AL	2	Evin Ranger 4252, 4265, 4334, 4406, 4407, Scout 4201-Elto Pal 4203, 4253, 4266-SeaKing Single 1 H.P. 377, 381, 469-Muncie Jr. Single 1A38, 1A39, 10A1, 11A1	
E 196	4.74	7½ x 8	AL	2	Evin Fisherman 4309, Zephyr 4359, 4361, 4362, 4363, 4378, 4379, 4381, 4382, 4402, 4403, 4404, 4405-Elto Lightwin 4313, 4314-SeaKing Twin 5 H.P. 371	
E 198	6.00	7½ x 9	BR	2		
E 199	5.50	8¼ x 6	AL	2		
E 201	7.00	10 x 10	BR	2	Elto Service Speedster 60000-69999, 80000H-89999H, 300, 348, HiSpeed Service Speedster 302	
E 204	8.80	10 x 8	BR	3		
E 204	9.90	8½ x 11½	BR	2R		
E 211	8.25	11 x 14	BR	2		
E 214	9.90	11 x 10	BR	3		
E 216	9.90	9½ x 14	BR	2R		
E 222	7.00	10 x 10	BR	2		
E 232	3.80	9 x 9	AL	2		
E 237	3.80	7½ x 6	AL	2		
E 242	3.80	8¾ x 8	AL	2		
E 246	7.00	10 x 10	BR	2	Elto Special Speedster 340-SeaKing Twin 15.2 H.P. 375 Elto Lightweight 90000,309 Evin Sport Single 432,4000, 4002-Elto Super Single 436, 4008, 4010 SeaKing Single 2.2 H.P. 489, 490 Evin Lightwin 402 407-Elto Lightweight 401, 411, 360-SeaKing Twin 4 H.P. 400, 416, 491, 494, 499 Elto Special Speedster 340, 905	
E 251	8.80	10 x 10	BR	3	Evin Sportfour 902-Elto Sr. Speedster 310, Jr. Quad 900	
E 258	9.90	9½ x 11½	BR	2R		
E 260	11.00	10 x 12	BR	2R	Evin Speeditwin 634, 6000, 6011, 6039, 6041-Elto Super "C" 605, 624, 638, Speeditwin 6004, 6034, 6015, 6018	
E 261	9.90	11 x 11	BR	3		
E 263	9.90	11 x 9	BR	3		
E 267	11.00	9¼ x 14	BR	2R		
E 271	9.90	11 x 13	BR	3		
E 272	9.90	10½ x 13	BR	3		
E 277	13.00	11¾ x 10	BR	3	Evin Speedifour 728, 7022-Elto Speediquad 7004, 7013 Elto Sr. Quad 314, 700, 721, 732	
E 279	11.00	10½ x 15	BR	2		
E 281	11.00	11 x 14½	BR	3		
E 283	11.00	10½ x 17	BR	2R		
E 291	7.00	9 x 8	BR	2		Evin Sturditwin 420, Fleetwin 418, 450, 4034-Elto Service "A" 424, Super "A" 422, Fleetwin 4038, 4335, 4336-SeaKing Twin 8.5 H.P. 471, 473, 492
E 293	7.00	9 x 6	BR	3		
E 294	8.80	8½ x 9½	BR	2R		
E 296	4.75	7½ x 8	AL	2		
E 304	8.80	10 x 10	BR	3	Evin Fisherman 4016, 4093, 4227, 4267, Sportwin 409, 476, Lightwin 422, 4020-Elto Lightweight 444, Fisherman 413, 4018, 4095, Service Twin 4161, 4163, 4151, 5216, 4229	
E 306	8.80	10 x 8	BR	3		
E 309	9.90	9½ x 11½	BR	2R		
E 313	4.75	7½ x 8	AL	2	Evin Sportfour 912, 90000, 9200-Elto Jr. Quad 914, 924-SeaKing Twin 15.2 H.P. 375, 376	
E 322	4.40	7½ x 8	AL	2		
E 332	5.50	8¼ x 8	AL	2		
E 342	6.00	8¾ x 9	AL	2		
E 360	8.80	9¾ x 10	BR	3		
E 363	8.80	8¾ x 12	BR	2R	Evin Weedless Fisherman 4092, 4152, 4269, 4312 Evin Lightwin 4097, 4153-Elto Lightwin 4099 Evin Lightwin Imperial 4102, 4165-Elto Lightwin Imperial 4106 Evin Lightfour 4231, 4271, 4315, 4316, 4317, 4322, 4324, 4375, 4376, 4377, Lightfour Imperial 4111, 4178-Elto Lightfour Imperial 4115 Evin Sportfour 9008, 9015, 9022, 9026, 9031, 9035-Elto Sportfour 9004, 9013, Jr. Quad 912, 9200, 9000, 900, 914, 924, SeaKing Twin 15.2 H.P. 375, 376	
E 365	9.90	10¼ x 8	BR	3		
E 422	5.50	7½ x 8	AL	2	Evin Lightwin 4221, 4289 Evin Lightfour 4231, 4271, 4314, 4316, 4317, 4322, 4323, 4324, 4375, 4376, 4377, Lightfour Imperial 4111, 4178	
E 446	7.70	9 x 6½	AL	2		
E 512	6.50	8¾ x 8	AL	2	Evin Lightfour Imperial 4042-Elto Lightfour Imperial 4044, Lightwin 4020, 4032	
E 513	6.50	9 x 6	AL	2		
E 522	6.00	8¾ x 9	AL	2		
EW 2	9.90	10½ x 10½	BR	3	Elto Handifour 4219	
EW 6	11.00	10½ x 13	BR	3		
EW 7	8.80	9¾ x 10	BR	3		
EW 10	9.90	10½ x 10½	BR	3		
EW 20	11.00	10½ x 13	BR	3		
EW 40	7.00	9 x 8	BR	2	Evin Speeditwin 6039, 6041-Elto Speeditwin 6034 Evin Speedifour 7026, 7031, 7032 Evin Sportfour 9026, 9031, 9035 Evin Speeditwin 1946 Models Evin Speedifour 1946 Models	
					Elto Fleetwin 4335, 4336	

R Indicates Racing Type Propeller  
W Indicates Weedless Type Propeller

# MICHIGAN PROPELLER PRICE LIST

(All prices are subject to change without notice)

## EVINRUDE — ELTO

Michigan Part No.	Price	Dia. and Pitch	Metal	No. Blades	PROPELLER TO BE USED ON MOTOR MODEL NO.
B 10	\$ 3.80	8½ x 8	AL	2	Evin Foldlight 162, 403-Elto Foldlight 162, 403-Sea King 162,403
V 128	4.00	8½ x 6	AL	2	Evin Sportwin 1500-10000, 183, 10500-14750
V 818	8.25	9 x 9	AL	2	Evin Fleetwin F, 1F, 4F
V 821	7.00	10 x 12	AL	2	Evin Fastwin H1001-H2500, 1H001-13H250
V 823	9.90	10 x 10	BR	3	
V 825	8.80	9 x 13½	BR	2R	
V 831	9.25	10 x 13	AL	3	Evin Speeditwin U1-U5
V 832	9.25	10 x 13	BR	3	
V 833	9.25	10 x 11	BR	3	
V 836	6.60	8 x 9	AL	2	Evin Fastwin 1-4429 Model R
V 841	8.80	10 x 13	AL	3	
V 842	9.90	10 x 13	BR	3	Evin Speeditwin 1U-15U, 143, 156, 167-Sea King 21H.P. 615
V 844	9.90	10½ x 10	BR	3	
V 849	11.00	9½ x 14	BR	2R	
V 851	9.90	11 x 11	BR	3	Evin Speeditwin 601, 618, Speedifour 704, 715
V 853	9.90	11 x 9	BR	3	
V 857	11.00	9¾ x 16	BR	2R	
V 861	9.90	11 x 13	BR	3	Evin Speedifour 704, 715
V 862	11.00	10½ x 15	BR	2R	
AM 10	10.45	8¾ x 10	BR	3	Evin Sportfour 902-Elto Jr. Quad 900, Sr. Speedster 310
AM 11	11.00	9½ x 10	BR	3	
AM 41	10.45	8¾ x 10	BR	3	Evin Sportfour 912, 9000, 9008, 9015, 9022, 9026, 9031, 9035-Elto Sportfour 9004, 9013, Jr. Quad 914, 924-Sea King 15.2 H.P. 375, 376
AM 42	10.45	8¾ x 10½	BR	3	
AM 45	11.00	9½ x 10	BR	3	
AM 50	12.65	10 x 10	BR	3	Evin Speeditwin 634, 6000, 6011, 6039, 6041-Elto Speeditwin 6004 6015, 6018, 6034, Super "C" 605, 624, 638
AM 51	13.20	10½ x 9½	BR	3	
AM 60	13.20	10½ x 12½	BR	3	Evin Big Four 802, 814, Speedifour 728, 7022, 7026, 7031, 7032-Elto Sr. Quad 314, 700, 721, 732, Speediquad 7004, 7013, Big Quad 800, 820
AM 61	13.20	10½ x 13½	BR	3	
AM 62	12.65	10 x 13	BR	3	
AM 70	8.80	8 x 8	BR	3	Evin Lightfour 4231, 4271, 4315, 4316, 4317, 4322, 4323, 4324, 4375, 4376, 4377, Lightfour Imperial 4111, 4178
AM 71	9.35	8 x 7½	BR	3	
AM 80	8.80	8 x 9	BR	3	Evin Fleetwin 418, 450, 4034, Sturditwin 420-Elto Service "A" 424, Super "A" 422, 456, Fleetwin 4038, 4335, 4336-Sea King Twin 8.5 H.P. 471, 473, 492
AM 81	9.35	8½ x 9	BR	3	
AM 120	8.00	7½ x 6½	BR	3	Evin Fisherman 4309, Zephyr 4359, 4361, 4362, 4363, 4378, 4379, 4381, 4382, 4402, 4403, 4404, 4405-Elto Lightwin 4313, 4314-Sea King Twin 5 H.P. 371
AM 121	8.00	7½ x 7½	BR	3	
AM 130	12.65	10 x 11	BR	3	Evin Speeditwin 156, 143, 167, 1U-15U-Sea King Twin 21 H.P. 615
AM 131	12.65	10 x 10½	BR	3	
AM 140	12.65	10 x 10	BR	3	Evin Speeditwin 601, 618
AM 141	12.65	10 x 10½	BR	3	
AM 150	12.65	10 x 13	BR	3	Evin Speedifour 704, 715
AM 160	13.20	10 x 10	BR	3	Evin Speeditwin 1946 Models
AM 161	13.20	10½ x 9½	BR	3	
AM 170	14.00	10½ x 12½	BR	3	
AM 171	14.00	10½ x 13½	BR	3	Evin Speedifour 1946 Models
AM 172	14.00	10 x 13	BR	3	

## WATERWATCH

S 5	\$1.65	6½ x 4	AL	2	Single 1938, 39, 40 ¾ H.P., 1941 1 H.P. Motor Nos.: 571.30, 571.31, 571.33, 571.34, 571.35, 571.36. (Replaces Sears Part Nos.: MB2265, MB2265-1, MB2265-2, MB2265-11)
S 10	2.75	7½ x 7	AL	2	Single 1936-40, 2½ H.P., 1941 2¼ H.P. Motor Nos.: MB10, 571.10, 571.11, 571.40, 571.41, 571.42, 571.43, 571.44. (Replaces Sears Part Nos.: MB265, MB7265)
S 15	3.30	8½ x 7	AL	2	Single 1940, 41 3.5 H.P. and 5¼ H.P. Motor Nos.: 571.12, 571.13, 571.14, 571.15, 571.20, 571.24, 571.26. (Replaces Sears Part Nos.: MB265-5, MB765-11)
S 20	3.80	8 x 8	AL	2	
S 23	5.50	8½ x 7	AL	3	
S 25	5.50	7½ x 9	AL	2	Twin 1936, 37, 38 4 H.P., 39 4¾ H.P. Motor Nos.: 5807, 571.21, 571.22, 571.23. (Replaces Sears Part Nos.: MB765 (2-Blade), 765-2 (3-Blade).
S 50	6.50	9 x 10½	AL	2	Twin 1941 10 H.P. Motor No.: 571.45. (Replaces Sears Part No.: MB9265-1)

R Indicates Racing Type Propeller  
W Indicates Weedless Type Propeller  
AM In part number indicates AQUAMASTER design.

**What's a vacation or fishing trip without the use of your motor —  
carry a spare propeller.**

# MICHIGAN PROPELLER PRICE LIST

(All prices are subject to change without notice)

## THOR

Michigan Part No.	Price	Dia. and Pitch	Metal	No. Blades	PROPELLER TO BE USED ON MOTOR MODEL NO.
T 20	\$3.30	6 1/2 x 4 1/2	AL	2	Single 1935, 36 Twin 1936 Single 1937, 38, 39, Twin 1939-Sea King Single 2 H.P. Twin 1939
T 24	3.30	7 3/8 x 5 5/8	AL	2	
T 26	3.30	7 x 6	AL	2	
T 28	4.30	9 x 7	AL	2	

## JOHNSON

J 1	\$ 5.00	8 x 7 1/2	AL	2	TD 15, TS 15 TD 15, TS 15 MD 38, 39-MS 38, 39 DS 37, 38-LS 37, 38 AT 39, 10-DT, 37, 38, 39, 10-LT 37, 38, 39, 10 2W	
J 4	5.00	8 x 6	AL	2		
J 5	1.65	6 1/2 x 3 1/2	AL	2		
J 10	4.40	8 x 4 3/4	AL	2		
J 14	4.40	8 x 7 1/2	AL	2		
J 17	6.50	8 x 6	AL	3W		
J 18	5.50	8 x 7 1/2	AL	2W		
J 21	8.80	9 3/4 x 7 1/4	AL	3		KA 37, 38, 39, 10-KD 15-KS 15 2R
J 22	11.00	9 3/4 x 7 1/4	BR	3		
J 23	8.80	9 1/2 x 9	BR	3		
J 24	9.90	9 x 11	BR	2R		
J 25	8.80	9 1/2 x 9	AL	3		
J 26	9.90	9 x 10	BR	2R		
J 30	2.20	6 3/8 x 5 1/4	AL	2	HA-HD-HS 39, 10 HA-HD-HS 15 MD 15, 20-MS 15, 20 HD 20-HS 20 MD 15-MS 15	
J 40	2.75	6 3/8 x 5 1/4	AL	2		
J 45	2.75	6 3/8 x 4 1/4	AL	2		
J 52	3.30	6 3/8 x 5 1/4	AL	2		
J 58	1.65	6 1/2 x 4 1/4	AL	2		
J 64	2.75	7 1/4 x 4 1/2	AL	2	100-110 200-210 F 70 F 75	
J 74	3.00	7 3/8 x 5 1/2	AL	3		
J 76	3.80	7 3/8 x 5 1/2	AL	3W		
J 80	4.75	8 1/4 x 6	AL	2		
J 84	4.75	8 x 9	AL	2	J 80, 300 J 25, 65 J 70 J 75 A Lightwin-A 25-BN Lightwin-AB 25	
J 86	4.75	8 x 6 1/4	AL	2		
J 90	4.40	7 3/8 x 5 1/8	AL	2		
J 94	4.75	7 3/8 x 5 1/8	AL	2		
J 96	4.40	8 x 8	AL	2		
J 110	4.40	8 x 7	AL	2	A 25-AB 25 A 35, A 45 K 35	
J 112	5.50	8 5/8 x 6 1/2	AL	2		
J 114	6.00	9 1/8 x 7.7	AL	3		
J 118	9.90	10 x 10	AL	3		
J 119	11.00	10 x 10	BR	3		
J 120	9.90	9 x 12	BR	2R		
J 121	11.00	10 x 8	BR	3	K 40, 45 P 35, 40, 45-PB 35	
J 122	8.80	10 1/4 x 13.02	AL	3		
J 123	9.90	10 1/4 x 13.02	BR	3		
J 125	9.90	10 1/4 x 11	BR	3		
J 126	9.90	10 1/8 x 12 1/2	AL	3		
J 127	11.00	10 1/8 x 12 1/2	BR	3		
J 128	9.90	10 x 12 1/2	BR	2R		
J 131	9.90	9 1/2 x 14	BR	2R	A 50, 65, 70, 75, 80-AA 37 K 50, 65, 70, 75, 80	
J 140	6.00	9 1/8 x 6	AL	3		
J 141	7.70	9 3/8 x 7	AL	2W		
J 144	7.70	9 1/2 x 7 3/4	AL	3		
J 145	7.70	9 1/2 x 9 1/4	AL	3		
J 146	8.80	9 1/2 x 9 1/2	BR	3		
J 148	8.80	9 1/2 x 7 3/4	BR	3		
J 149	9.90	9 x 11	BR	2R		
J 150	8.80	10 x 10	BR	2		Johnson S 45, 65, 70-SA-SE; Muncie OB15, OB16, OB17, 16A-38, 16A-39, 10A-16, 11B-16 P 30, 35, 40, 45
J 151	8.80	10 x 11	BR	2		
J 153	8.80	10 x 14	BR	2		
J 154	9.90	10 x 10	BR	3		
J 155	9.90	10 x 8	BR	3		
J 156	9.90	9 x 12 1/4	BR	2R		
J 157	9.90	9 x 14 1/2	BR	2R		
J 160	11.00	10 1/2 x 9	BR	3		
J 162	11.00	10 1/4 x 10 1/4	BR	3		
J 164	9.90	10 1/4 x 12 1/4	AL	3		
J 165	11.00	10 1/4 x 12 1/4	BR	3		

R Indicates Racing Type Propeller  
W Indicates Weedless Type Propeller



## MICHIGAN PROPELLER PRICE LIST

(All prices are subject to change without notice)

### JOHNSON AND MUNCIE "16"

Michigan Part No.	Price	Dia. and Pitch	Metal	No. Blades	PROPELLER TO BE USED ON MOTOR MODEL NO.	
J 174	\$13.00	12 x 13	BR	3	P 50, 65, 70, 75, 80-PO 10, 15, 37, 38, 39-V45, 65, 70-VA-VE50	
J 175	13.00	12 x 12	BR	3		
J 176	13.00	12 x 10	BR	3		
J 182	7.70	9 1/2 x 9	AL	3		K 50, 65, 70, 75, 80 SD 10
J 273	9.90	10 x 12	BR	3		
J 277	9.90	10 x 13	BR	3		
J 1197	11.00	10 x 14	BR	2R	P 50, 65, 70, 75, 80-PO 10, 15, 37, 38, 39-V45, 65, 70-VA-VE50	
J 1198	11.00	9 3/4 x 16	BR	2R		
J 1202	9.90	12 x 15	BR	2		V 45, 65, 70-VA-VE 50
J 1203	9.90	12 x 17	BR	2		
J 1222	9.90	9 x 15	BR	2		K 40, 45
J 1499	9.90	9 1/4 x 10 1/2	BR	2R		K 50, 65, 70, 75, 80 P 50, 65, 70, 75, 80, PO 10, 15, 37, 38, 39, V45, 65, 70, VA-VE50
J 1708	11.00	10 1/2 x 16	BR	2R		
J 1709	11.00	10 1/2 x 17 1/2	BR	2R		
JA 1	5.50	9 1/2 x 8	AL	2	OA 55, 60 OA 65	
JA 6	6.50	8 7/8 x 7 1/2	AL	3		
JK 1	6.60	10 1/4 x 13	AL	2	OK 55, 60-Waterwitch Twin 8 1/2 H.P.	
JK 4	7.70	10 1/4 x 10	BR	2		
JW 27	9.90	9 1/2 x 10	BR	2W		KA 37, 38, 39, 10 KD 15 KS 15 A-BN Lightwin A-BN Lightwin
M 26	4.75	8 x 8	AL	2		
M 27	6.50	8 1/4 x 6	BR	3		
AM 20	11.00	9 1/2 x 8 1/2	BR	3	KA 37, 38, 39, 10-KD 15 KS 15	
AM 21	11.00	9 1/2 x 9	BR	3		
AM 30	13.20	10 1/2 x 12 1/2	BR	3		
AM 31	12.65	10 x 13	BR	3		P 50, 65, 70, 75, 80-PO 10, 15, 37, 38, 39-V45, 65, 70-VA-VE50
AM 32	12.65	10 x 13 1/2	BR	3		
AM 90	8.00	7 3/4 x 6 1/2	BR	3	TD 15, TS 15	
AM 91	8.00	7 3/4 x 7	BR	3		
AM 100	11.00	9 1/2 x 8 1/2	BR	3	K 50, 65, 70, 75, 80	
AM 101	11.00	9 1/2 x 8	BR	3		
AM 110	11.00	9 1/2 x 9 1/2	BR	3		
AM 111	11.00	9 1/2 x 9	BR	3		S 45, 65, 70-SA-SE

### CHAMPION

P 44	\$3.30	7 1/2 x 6 1/2	AL	2	A, 1B, 2B, S1C, S2C, R1C, S1D, S2D D1D, D1C D2C D2D, Up to Model D2D3000 S1E, D1E, S1F, S2F, B1F, S1G, D1G, M1G
P 47	3.80	7 1/2 x 5 1/2	AL	3	
P 48	3.80	7 3/8 x 6	AL	3	
P 50	4.40	8 1/4 x 6	AL	3	
P 51	2.75	7 1/2 x 6 1/2	AL	2	
P 60	4.40	9 x 6	AL	3	D3C, D3D, 3B D3C, 3B, D3D D2F, S2G, M2G D2F, S2G, M2G 3G, 3H D2D, from 3000 up, D1F
P 62	6.00	8 x 9	AL	2	
P 70	5.50	8 1/4 x 7	AL	3	
P 73	6.60	8 x 8 1/2	AL	2R	
P 80	6.00	8 1/2 x 7	AL	2	
P 91	4.40	7 1/2 x 6 1/2	AL	3	

### MUNCIE (Also see Johnson for partial listing)

M 10	\$2.75	7 5/8 x 5 1/8	AL	2	OB1, OB11, OB12, 2A38, 2A39, 10A2, 11A2, 11AA2	
M 12	3.80	8 1/4 x 4	AL	2		
M 20	3.80	8 x 7	AL	2		
M 26	4.75	8 x 8	AL	2		OB31, OB32, OB34, OB35, OB38, OB39, 10A4, 11B4, 11A3, 11AA3, 5A39, 10A6, 11A6, 11AA6, 6A38, 6A39
M 27	6.50	8 1/4 x 6	BR	3		
M 30	2.75	9 x 9	AL	2	OB2 OB3, OB4, OB5 OB51, OB61, CB63, OB64, OB51	
M 34	3.50	9 x 9	AL	2		
M 37	3.50	9 x 8 1/2	AL	2		
M 60	7.00	9 x 9	AL	3		
M 62	8.25	8 1/2 x 10 1/2	BR	2R		
M 63	8.80	9 1/2 x 7 3/4	AL	3		9A38, 9A39, 10A10, 11A9, 11AA9
M 65	8.25	9 x 9	BR	2R		

R Indicates Racing Type Propeller  
W Indicates Weedless Type Propeller

**Carry a spare propeller to slip on when a damaged propeller would otherwise spoil your boating pleasure.**

## MICHIGAN PROPELLER PRICE LIST

(All prices are subject to change without notice)

### BENDIX

Michigan Part No.	Price	Dia. and Pitch	Metal	No. Blades	PROPELLER TO BE USED ON MOTOR MODEL NO.
X 5	\$4.40	7½ x 5	AL	2	All Singles 1940 2¼ H.P. All Twins 1940 4½ H.P.
X 7	5.50	8¼ x 4½	AL	2W	
X 20	4.75	8¼ x 6	AL	2	
X 24	6.00	8½ x 5	AL	3W	

### LAUSON

L 30	\$3.30	7½ x 6	AL	2	Single 1940, 41 2½ H.P.
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### LE JAY

H 50	\$2.50	6 x 5	AL	2	Electric Troller
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### LOCKWOOD

L 410	\$8.80	8 x 11½	BR	2R	Ace 1929, 30
L 411	8.80	9¼ x 8½	AL	2	
L 412	8.80	9¼ x 8½	BR	2	Chief 1928, 29-82B-92B-Sea King II and 15 H.P. No. 500 1927 "72-T"
L 420	9.25	9 x 14	BR	2	
L 421	9.25	9 x 15	BR	2	
L 423	9.25	10 x 12½	BR	2	
L 606	8.80	9 x 7	BR	2	

### MARTIN

Q 10	\$5.00	8 x 8½	AL	2	1946 Models
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### MERCURY

K 8	\$3.30	7½ x 6	AL	2	Singles K 1, 2, 3-KB1-KB1A-Sea King Single 2.8 H.P. Twins K4, K5 Singles KB2, KB3, KB4, KB5-Wizard WB6
K 10	3.30	7½ x 7	AL	2	
K 15	3.30	7½ x 7	AL	2	

### SEA KING (Also see E, K, & T Part Nos.)

W 8	\$2.20	7½ x 6	AL	2	Twin 2.5 H.P. No. 498
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R Indicates Racing Type Propeller  
W Indicates Weedless Type Propeller

**Propeller damage won't lay up your boat if you own a spare propeller.**

## A NATION-WIDE PROPELLER RECONDITIONING SERVICE

Accidents are bound to happen it seems in the life of a propeller. You hit a rock, a log or some other object and perhaps bend, twist, or tear one or more blades, or at least throw your propeller out of balance. But there's no need of discarding that propeller. Just attach a mailing tag to it (or have your dealer do so) and send it to the nearest of our many strategically located Service Stations. No matter how badly damaged it may be, chances are that they can fully restore it and make it as serviceable as ever. All authorized MICHIGAN Service Stations are fully equipped with our patented PITCH-BLOCKS which assure restoration of perfect pitch, and other factory equipment and are manned by factory trained workmen. Absolute accuracy of the finished job is guaranteed. And, incidentally, this is the only method of reconditioning in which accuracy can be guaranteed. It is significant that the Army and Navy have relied almost exclusively on MICHIGAN EQUIPMENT for their vast propeller reconditioning requirements in all parts of the world.

### OWN A SPARE PROPELLER

No propeller can give you smooth, vibrationless performance that is even slightly out of balance. Hence, a constantly increasing number of boat owners are finding it an excellent investment to own a spare wheel. This permits them, without laying up the boat, to have their wheels checked at the nearest MICHIGAN SERVICE STATION whenever damage to the propeller may be suspected.

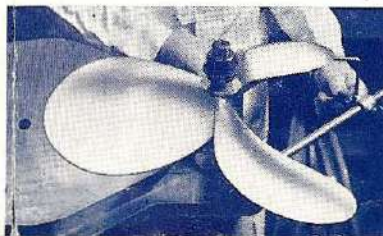
*Below: A typical authorized, factory-equipped Michigan Service Station.*

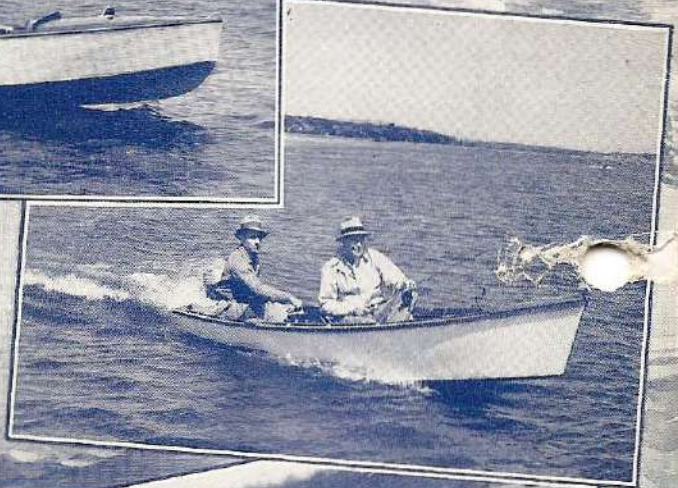


### A GRAPHIC EXAMPLE OF PROPELLER RECONDITIONING by the Michigan Machined-Pitch Method *Accuracy is Guaranteed*

**STEP BY STEP EVERY  
PROPELLER IS HANDLED  
AS AN INDIVIDUAL JOB**

1. Each is carefully inspected on receipt and proper sized machined-pitch block is selected.
2. Blades are individually straightened and aligned to conform with pitch block. There is no guesswork — accuracy is guaranteed.
3. Each propeller is welded as required and edges are built up in thickness and out to full diameter. No undersize trimming.
4. Next each wheel is ground, polished and buffed to the appearance of a new propeller. Very carefully checked for flaws.
5. Then comes Balancing and Checking for proper spacing and equalizing of blades.
6. Back on the patented pitch block for an inspection. It leaves this block only when it can be okayed as 100% accurate.





**SOLD BY**