Amphibious Excavator

We have been designing long reach attachment for numerous and unique dredging applications over the years. It is inevitable for us to continue providing comprehensive products to satisfy our customers' never ending quest for enhanced efficiency, safety and leading edge solutions. Our customers can look upon us to provide a complete package to carry out tasks in challenging terrains with incredible efficiency and high ROI (Return On Investment).

An **AmphiMaster**™ is specifically designed to manoeuvre in marshes, swampy area and soft terrain with the ability to float on water as an added safety feature. A versatile long reach front AmphiMaster dredging solution has always been in our product design roadmap. Our exposure during the many years of working with our customers in overcoming various challenging terrains has provided us with a wealth of experience and knowledge behind this superior design. Completely self-propelled, it can access virtually all terrains and yet requires minimal supporting transportation or hoisting equipment.

Greater versatility can be easily achieved when used in conjunction with the wide range of attachments we offer. We have in-house expertise in designing customized attachments for tackling unique challenges where traditional off-the-shelf solutions fail to deliver.

Amphibious Excavator

Applications:

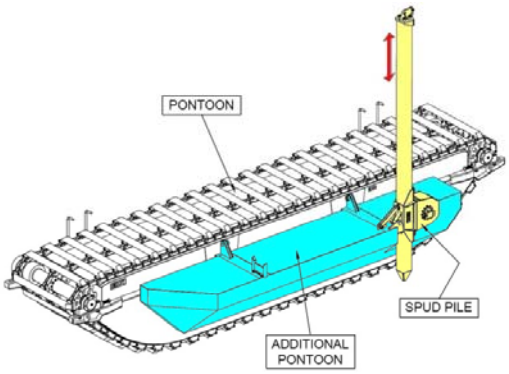
AmphiMaster™ has proven itself and performed exceedingly well in the followings applications:
- Dredging
- Landscaping
- Erosion control and prevention
- Deepening of waterways and river deltas
- Maintenance and cleaning of rivers, lakes, shorelines, ponds, etc

Industry Leading Features:

• **Hydraulic Extendable Pontoons:** The pontoon are constructed with premium grade steel. It is also designed to be able to float on water as an added safety feature. It has 3 watertight compartments, hermetically sealed with individual manholes for easy access from the outside for inspection and preventive maintenance.

An innovative design in the undercarriage system allows each pontoon to extend outward via hydraulic function, providing the extra stability whenever the situation calls for. Undercarriages designed for 14 ton class and below excavators will have a hydraulic control system for extending and retracting the pontoons as a standard feature.

Pontoons are designed with provision for future addition of supplementary pontoons and spud system if needs arises. A future proof of your investment indeed.



Optional Items:
- *Supplementary pontoons can be added on each side to boost stability in deeper water.*
- *Spuds attached to supplementary pontoons help to overcome buoyancy effect, and offers added stability and enhanced operability.*

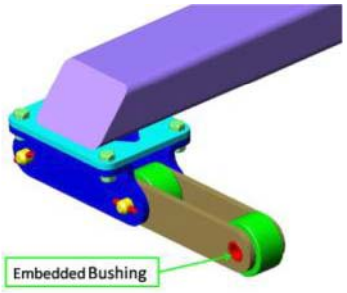
• **Final Drive:** A proprietary design using multi-synchronous hydraulic motors on each pontoon. Multiple active motors propelling each pontoon provide superior tracking power, making it virtually undeterred in any terrain. A similar concept applies to a full time 4x4 gear system of a land vehicle. Most single motor powered pontoon systems require a reduction system to reduce travelling speed. Our multi-synchronous drive system is designed to retain as much of the original excavator travelling speed as possible.

Many users do not realize that swampy areas are not necessary all flat. Mud viscosity varies widely from area to area and country to country. One would fully appreciate the superior design of our multi-synchronous motor powered pontoon system when faced with the most challenging terrains.

Another key advantage is its higher ground speed. We have conducted field tests, and it has been proven that when tracking in high viscosity muddy ground, a higher travelling speed and momentum, when coupled with front and back synchronized motor tracking, can drastically reduce the risk of being stuck and immobilized.

Amphibious Excavator

• **Track Chain:** Each pontoon comes with 3 strands of heavy duty track chains, constructed with high yield strength tensile steel. Track shoes/cleats supported by 3 strands of track chains provide the advantage of uniform pulling force and superior weight distribution across each track shoe/cleat.



• **Sprocket:** The hardworking sprockets, rollers and bushings (embedded within the rollers) are machine finished to high precision and subsequently induction hardened. This reduces the need for frequent replacement and costly maintenance down time. Rollers are travelling on a strip of wear resistant steel, preventing them from prematurely wearing down to the pontoons.

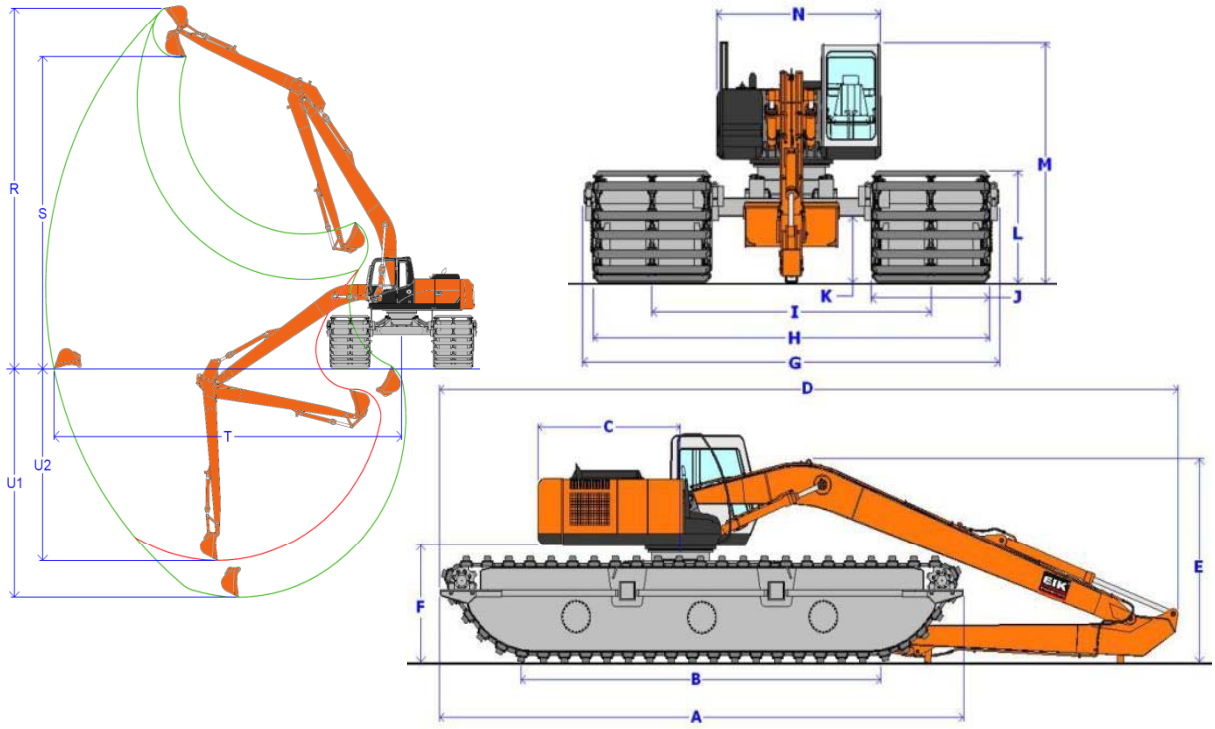
• **Track Shoe/Cleat:** The track shoes/cleats are steel fabricated. Steel is favoured over aluminium alloy because of its malleable property. The distinct advantage of steel over aluminum is it is less prone to cracking due to it wider spread between yield strength and ultimate tensile strength.

The steel track shoe/cleat used has a minimum yield strength and tensile strength of 280 Mpa (40,600 psi) and 480 Mpa (69,600 psi) respectively, which translates to an approximately 16% and 65% improvement of yield strength and tensile strength respectively over 6061 T6 aluminium alloy.

• **Storage Compartment:** The original counterweight can be replaced with a well constructed general purpose storage and tool box compartment as an option. Custom design and build to fit snugly at the back of the excavator. An innovative and welcoming feature.

• **Attachment:** The default configuration of the AmphiMaster™ is equipped with the original boom, arm and bucket that come as standard items with the excavator unless otherwise stated. The customer has the option to replace the standard boom and arm with a long reach attachment. The convenience of an extended reach and greater working range is always a welcomed advantage when carrying out work in marsh land and for dredging related applications.

Amphibious Excavator



Dimensions (m)	Description	Amphibious Undercarriage Models					
		AM80	AM140	AM200	AM250	AM300	AM350
		For 6 – 8 ton class excavator	For 12 – 14 ton class excavator	For 20 – 22 ton class excavator	For 24 – 27 ton class excavator	For 28 – 30 ton class excavator	For 33 – 36 ton class excavator
A	Max. Track Length	6.72	9.40	9.65	9.65	11.10	11.90
B	Track Length On Ground	3.90	5.25	4.30	4.30	5.70	6.48
C	Rear Upper Structure Length	1.75	2.18	2.68	3.00	3.12	3.50
D	Overall Length	7.10	12.32	13.12	14.40	15.60	16.06
E	Height of Boom	2.78	2.90	3.23	3.70	4.10	4.00
F	Counterweight Clearance	1.59	1.75	2.21	2.21	2.35	2.32
G	Overall Width, min/max (outwardly extendable)	3.50/4.30	4.22/5.32	5.29/ 6.09	5.87/6.67	6.20/7.00	6.27/7.07
H	Undercarriage Width, min/max	3.38/4.18	3.95/5.05	5.00 / 5.80	5.58/6.38	5.90/6.70	5.97/6.77
I	Track Gauge, min/max	2.11/2.91	2.50/3.60	3.38 / 4.18	3.66/4.46	3.98/4.78	4.02/4.82
J	Track Cleat Width	30	1.45	1.62	1.92	1.92	1.95
K	Min. Ground Clearance	0.94	1.07	1.29	1.29	1.15	1.13
L	Track Height	1.42	1.61	2.05	2.05	2.05	2.05
M	Overall Cab Height	3.56	3.45	4.14	4.20	4.23	4.25
N	Upper Structure Overall Width	1.17	2.50	2.71	2.85	2.98	3.00
R	Max. Cutting Height	9.50	12.50	14.50	16.00	17.10	18.20
S	Max. Loading Height	8.90	8.50	13.00	14.80	15.80	16.50
T	Recommended Outreach	9.00	12.00	14.00	15.00	16.00	17.00
U1	Max. Digging Depth from Front	5.00	7.50	9.50	10.5	11.50	12.50
U2	Max. Digging Depth from Side	2.95	5.90	7.00	8.00	9.00	10.10
	Bucket Capacity (m3)	0.25	0.40	0.60	0.80	0.90	1.00

*Dimensions are for reference only, it may vary from excavator brands and models.
**For the benefit of continuous product improvement, specifications are subject to change without prior notice.

Amphibious Excavator

Ease of Transportation and Installation

The innovative modular system was designed with ease of transportation and installation with minimum field equipment and manpower in mind, yet without compromising speed and safety. A trained 4-man team can fully assembled a complete 20 ton class AmphiMaster in under 3 hours, only assisted by a crane.









Post Sales Service and Support

We are a vertically integrated organization and take pride in our fully in-house design and manufacturing capability. Most parts and components are manufactured in-house, thus considerably reducing the risk of components becoming unavailable in years to come. Spares are well stock and we can deliver at a short notice. Availability of spare parts are guaranteed for at least 10 years.





Amphibious Excavator

Contact Us

Lemac Corporation
22909 Airpark Drive
Petersburg, Virginia 23803
United States
Tel: 1 (804) 862-8481 Fax: 1 (804) 862-1070
Email: sales@lemaconline.com

Lemac Engineering Ltd.
Block 3, Barnpark Drive
Tillicoultry, Clackmannanshire FK136BZ
United Kingdom
Tel: +44 (0) 1259-751573 Fax: +44 (0) 1259-751196
Email 1: uksales@lemaconline.com

CERTIFICATION INTERNATIONAL ISO 9001:2008 Cert No: CI/13921 — UKAS MANAGEMENT SYSTEMS 063

- ✓ ISO 9001:2008
- ✓ Our undercarriages are CE Mark, approved for sales in European market.
- ✓ Certification done by UK consultant.
- ✓ Design of undercarriages met stringent European's criteria.