

Linkflote™ pontoon setup crawler cranes/excavators (lifting)

Assumptions made by VolkerMarine Services in the compilation of the table below

1. Pontoon operations are within inland/protected waters
2. The machine is positioned centrally over the centre of gravity of the platform
3. Maximum deck inclination during lifting of rated loads does not exceed 3 degrees
4. Machine is sat up suitable timber mats and is loosely secured to the pontoon with adequate tackle

VolkerMarine Services recommended minimum setups for crawler crane/excavator (lifting)

Crane/Excavator <5t	=	2 wide x 1 long	=	5m x 5m
Crane/Excavator <10t	=	3 wide x 2 long	=	7.55m x 10.6m
Crane/Excavator <30t	=	4 wide x 3 long	=	10m x 16m
Crane/Excavator <50t	=	5 wide x 3 long	=	12.7m x 16m
Crane/Excavator <70t	=	5 wide x 4 long	=	12.7m x 21.5m
Crane/Excavator <80t	=	6 wide x 5 long	=	15.2m x 27m

Note: Unless there is a restriction on the pontoons overall size due to limited space available, for cranes between 30 tonnes and 70 tonnes, a good working platform with adequate deck space to accommodate a 4 point mooring system and a lay down area within the range of the crane is 5 wide x 4 long.

Considerations to be made by the hirer when determining the pontoon size

1. Crane weight and duties (see table above)
Note: Refer to the crane manufacturers specifications for the allowable inclination and lift duties for floating operations – this may include derating of the machine.
2. Ensure the lifting requirements from the deck of the pontoon are within the lifting range/radius of the crane (check minimum/maximum reach)
3. Determine the mooring system required and consider deck space required to accommodate it
4. Determine other equipment and storage required on board and the deck space required
5. Be aware of crush zones created by the excavator tail swing

Stability calculations

In every case, the hirer must ensure by calculation that the particular configuration “set up” complies with BS 6349-6:1989 (Code of practice for maritime structures – Part 6: Design of inshore moorings and floating structures) and the Bailey and Uniflote Handbook, 3rd edition (Hathrell, 1968). All imposed loadings are to be within the structural capacity of the Linkflote™.

Checks should be made to ensure that the stability criteria meets the requirements of the crane/excavator manufacturer.