MAQ Sonar Sea-Chest Installation References

Approvals:
Sea-Chest installations must be approved on a case-by-case basis with regard to the vessel’s national registry and corresponding maritime authority. The ship owner and shipyard performing the installation are responsible for obtaining installation approval.

Dry Dock:
Ensure proper clearance under Sea-Chest for sonar installation. Avoid placing supporting blocks in the area of the Sea-Chest. Ensure you record the position of the Sea-Chest for future reference. Sonar have been installed in existing Sea-Chest without placing the vessel in Dry Dock but this is at the discretion of the vessel owners and Dealers.

Sea-Chest:
MAQ sonar is one of the simplest and fastest Omni Sonar to install. This sonar was designed to fit on vessels with existing Sea-Chests and can be installed in as little as one day.

The Sea-Chest is probably the most important consideration when installing sonar. For best performance the transducer must extend properly out of the Sea-Chest in order that the active face is fully exposed (Short Stroke). When it is extended farther below the keel it will not be exposed to air bubbles that are may be driven under the vessel which will reduce sonar performance (Long Stroke). Many vessels do not have an issue with air bubbles from the Bow of the vessel and short stroke installations are more than adequate.

The recommended location for the Sea-Chest is 1/3 of the vessel length from the Bow and as close to the keel as possible. For assistance Please contact the Factory tech@maqsonar.com.

There are several other considerations for locating a Sea-Chest. When the vessel is already equipped with sonar these sonar may extend in front of or next to the MAQ. If these equipments are in the line of sight of the MAQ they will create a shadow or block the detection of the sonar in this direction.

Although MAQ sonar will fit in any 8” (90KHz and 60KHz) or 18” (22KHz) Sea-Chest, Sea-Chest extensions may have to be added to accommodate the MAQ. It is critical that the I.D. of a Sea-Chest extension matches the original Sea-Chest I.D. and that the extension is aligned properly with the original Sea-Chest.
Before proceeding with the installation reference the attached Installation drawings and diagrams. These drawing show typical lengths and dimensions for short stroke and standard stroke hoist installations of the 90KHz, 60KHz and 22KHz sonar.

Before installing the Sea-Chest or sonar it is **CRITICAL** to measure the angle of a vessel during typical search and catch situations as well as pitch and Roll measurements. We have experienced Sea-Chest that were angled as much as 10° off the typical vessel angles during standard sonar operation. This will make operation of OMNI sonar very difficult and also reduces performance greatly.

These issues should all be considered on installations in new or existing Sea-Chests. Reference the Technical Manual for further Hoist and Sea-Chest Guide drawings.

**Standard Stroke installations are preferred for best sonar performance.**
90KHz SHORT STROKE INSTALLATION
1m SEA-CHEST

MINIMUM SEA-CHEST LENGTH - 1m (39.37”)
WITH 1.02m (40.1”) PIPE & FLANGE

- MINIMUM DISTANCE TO PREVENT VIBRATION
LONGER SEA-CHEST AND PIPES ARE RECOMMENDED
USE STANDARD STROKE INSTALLATION IF POSSIBLE
REQUIRED CLEARANCE ABOVE SEA-CHEST FOR INSIDE
SERVICE WITHOUT UNBOLTING TRANSUDER IS 1.69m (66.4”)

DIMENSIONS FOR REFERENCE ONLY. VERIFY ALL DIMENSIONS BEFORE MODIFYING PIPE LENGTH
90KHz STANDARD STROKE INSTALLATION

MINIMUM SEA-CHEST LENGTH - 1.36m (53")
WITH 1.7m (66.7") PIPE & FLANGE

- MINIMUM DISTANCE TO PREVENT VIBRATION
- RECOMMENDED DISTANCE FOR EMERGENCY PIPE BENDING.

REQUIRED CLEARANCE ABOVE SEA-CHEST FOR INSIDE SERVICE WITHOUT UNBOLTING TRANSUDER IS 2.39m (93.8")

LONGER SEA-CHEST AND PIPES CAN BE USED

1.7m (66.7") MINIMUM PIPE LENGTH

81.3cm (32") HOIST STROKE

25.4cm (10") MINIMUM PIPE REQUIRED ABOVE FLANGE IN DOWN POSITION

30.5cm (12") PIPE MOUNTED BUMPERS

ZINC

KEEL

5cm (2") 2.5cm (1")

66.8cm (26.3") TRANSUDER LENGTH

16.8cm (6.625" DIA.)

RECOMMEND SEA-CHEST IS FAIRED INTO KEEL

1/3 POSITIONED AT 1/3 OF THE BOAT LENGTH FROM THE BOW

DIMENSIONS FOR REFERENCE ONLY. VERIFY ALL DIMENSIONS BEFORE MODIFYING PIPE LENGTH

MAQ SONAR
60KHz SHORT STROKE INSTALLATION

MINIMUM SEA-CHEST LENGTH - 1.072m (42.2")
WITH 1.02m (40.1") PIPE & FLANGE

1 - MINIMUM DISTANCE TO PREVENT VIBRATION
LONGER SEA-CHEST AND PIPES ARE RECOMMENDED
USE STANDARD STROKE INSTALLATION IF POSSIBLE
REQUIRED CLEARANCE ABOVE SEA-CHEST FOR INSIDE 
SERVICE WITHOUT UNBOLTING TRANSUDER IS 1.76m (69.3")

102cm (40.1") MINIMUM PIPE LENGTH

25.4cm (10") MINIMUM PIPE REQUIRED ABOVE FLANGE IN DOWN POSITION

74.2cm (29.2") TRANSUDER LENGTH

45.7cm (18") HOIST STROKE

30.5cm (12")

21.1cm (8.625" DIA.)

TRANSUDER MOUNTED BUMPERS

KEEL

2.54cm (1")

ZINC

RECOMMEND SEA-CHEST IS FAIRED INTO KEEL

DIMENSIONS FOR REFERENCE ONLY. VERIFY ALL DIMENSIONS BEFORE MODIFYING PIPE LENGTH
60KHz STANDARD STROKE INSTALLATION

MINIMUM SEA-CHEST LENGTH - 1.4m (55.3")
WITH 1.68m (66.15") PIPE & FLANGE
- MINIMUM DISTANCE TO PREVENT VIBRATION
- RECOMMENDED DISTANCE FOR EMERGENCY PIPE BENDING.

MINIMUM CLEARANCE ABOVE SEA-CHEST FOR INSIDE SERVICE WITHOUT UNBOLTING TRANSDUCER IS 2.42m (95")

3m (118.1")
STANDARD PIPE & FLANGE LENGTH

81.3cm (32")
HOIST STROKE

1.68m (66.15")
MINIMUM PIPE LENGTH

25.4cm (10")
MINIMUM PIPE REQUIRED ABOVE FLANGE IN DOWN POSITION

21.9cm (8.625" DIA.)

74.4cm (29.3")
TRANSDUCER LENGTH

5cm (2")

2.5cm (1")

21.9cm (8.625" DIA.)

MINIMUM SEA-CHEST 1.4m (55.3")

MISSING BUMPER ORIENTATION

RECOMMEND SEA-CHEST IS FAIRED INTO KEEL

1/3
POSITIONED AT 1/3 OF THE BOAT LENGTH FROM THE BOW

DIMENSIONS FOR REFERENCE ONLY.
VERIFY ALL DIMENSIONS BEFORE MODIFYING PIPE LENGTH

MAQ SONAR
MINIMUM SEA-CHEST LENGTH - 1.7m (67") WITH 2.3m (90.5") PIPE & FLANGE

- MINIMUM DISTANCE TO PREVENT VIBRATION
- RECOMMENDED DISTANCE FOR EMERGENCY PIPE BENDING.

1.9m (75") MINIMUM RECOMMENDED HOIST CLEARANCE ABOVE FLANGE

3m (118.1") STANDARD PIPE & FLANGE LENGTH

1.2m (48") HOIST STROKE

30.5cm (12") PIPE MOUNTED BUMPERS

ZINC

104cm (41") TRANSDUCER LENGTH

5cm (2") KEEL

38.1cm (15" I.D.) Minimum

MINIMUM SEA-CHEST 1.70m (67")

35.5cm (14" DIA.)

RECOMMEND SEA-CHEST IS FAIRED INTO KEEL

1/3 POSITIONED AT 1/3 OF THE BOAT LENGTH FROM THE BOW

MAQ SONAR
**22KHz Sea-Chest**

Pipe must be round (not oval) inside diameter must be consistent for the entire length of sea-chest.

Consult marine authorities for safety regulations.

**90/60KHz Sea-Chest**

Sea-chest length determined at installation
Minimum sea-chest length 52.75" (1.34m)

This drawing and all the information on it is the sole property of MAQ Sonar Company and cannot be duplicated or copied in whole or in part without the written consent of the MAQ Sonar Company.