

## INSTALLATION INSTRUCTIONS FOR 2090 SERIES CONTROLS

When installing the control heads, it is important that they are located on a clean and flat surface which is easily accessible. The cables leading from the main control head to the reverse reduction gear and the propulsion engine throttle should be installed and made functional first. It is important that the following points are carefully observed.

As illustrated in the diagram below, in Position A (showing the clutch actuating pivot plate in the gear engaged position and the control handle in the full speed position), the cable must extend slightly beyond the attaching point on the clutch actuating pivot plate in the pull mode. The cable must also retract slightly beyond Position B in the push mode with the control head in a full speed position.

In order to obtain equal excess travel in both positions on the cable, the adaptor kit cable-end must be adjusted accordingly. After the proper position is found, the cable-end is attached to the clutch actuating pivot plate. The locking nut must be secured. This will ensure that no mechanical binding takes place in the cable or control head. It is also very important that the clutch control valve goes from neutral to both gear engaged positions without bottoming. A slight amount of end play is essential.

The throttle cable attached to the throttle actuating pivot plate must also operate within the available stroke of the cable and, again, the adaptor kit cable-end must be adjusted in such a manner to avoid bottoming of the control cable in either direction. In order to obtain full handle travel in the speed range, it is important to select the appropriate connection point for the adaptor kit on the throttle pivot plate.

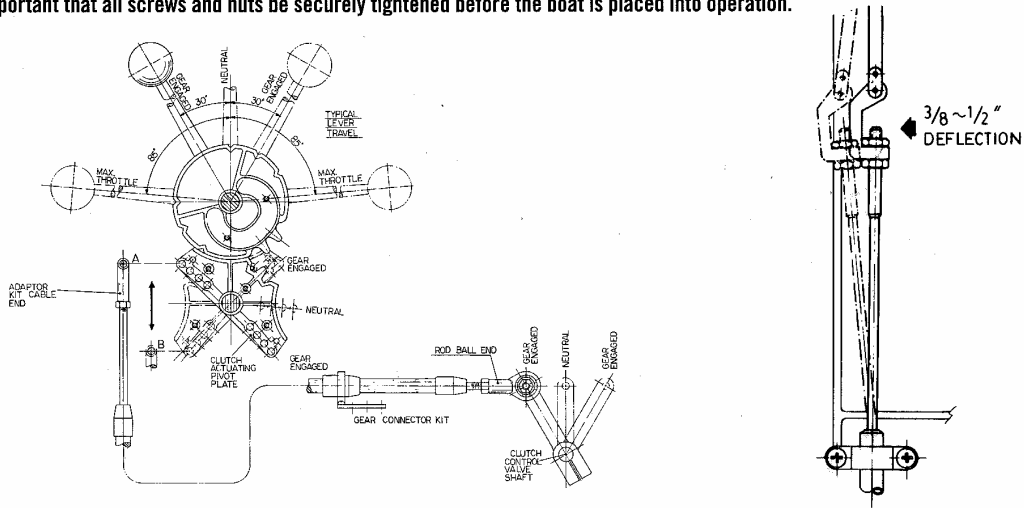
After the master station is connected to the engine, the cables can be connected from this station to the remote station. It is important that the cables are of the correct length. Too short a cable can result in tight bends which will increase friction. Too long a cable will also result in extra loops which again generate additional friction. Either of the above can make the control stiff and difficult to operate.

After the cable is attached with the clamps on the bottom of the supports of the control heads, the chain can be placed over the sprocket. When the control head is in the neutral position (with handle in mid-position), the loose ends of the chain should be about the same length on either side of the sprocket. The cable core is equipped with two nuts on either end. One of the nuts must be removed and the cable-end passed through the adaptor link. The nut can then be re-installed.

It is also important to remember that the cable must be crossed between the control heads in order to get the handles to move in the same direction (the forward cable from the master station is attached on the aft side of the remote station and the forward cable of the remote station is attached to the aft side of the master station). The cables should have enough thread at the end to allow balancing of the handles at both stations in the neutral position. The adjusting nuts at the end of the cable can now be tightened or loosened as required to balance the handles. Over-tightening of the cable core will result in excessive friction and will make the control system very stiff and difficult to operate. A deflection of  $3/8" - 1/2"$  in the cable to either side between the sprocket and cable conduit clamp is essential. It is important that the two nuts at the cable-end are secured tightly against the adapting link. Two  $3/8"$  wrenches can be used to accomplish the task. Under no circumstances must the chain be twisted when tightening these nuts.

**Use only felsted pull-pull cables to interconnect head and felsted 40 series push-pull cables from control to gearbox/engine.**

**It is extremely important that all screws and nuts be securely tightened before the boat is placed into operation.**



Clutch and throttle cable connection kits are ordered by the control head number followed by -0901 for 30 series cable and -0902 for 40 series cable.

Two cables per engine are required for interconnecting the master and remote station. They are ordered as follows: 47-xx where xx is the length in feet. Example 47-12 is a 12 ft interconnecting cable. Cables are available in even foot lengths from 8 to 30 feet long. Control heads include all necessary parts to attach cables from the master station to the remote station.

## 2090 Series Two Station Single Lever Controls



The 2090 series provides single lever control from two control stations.

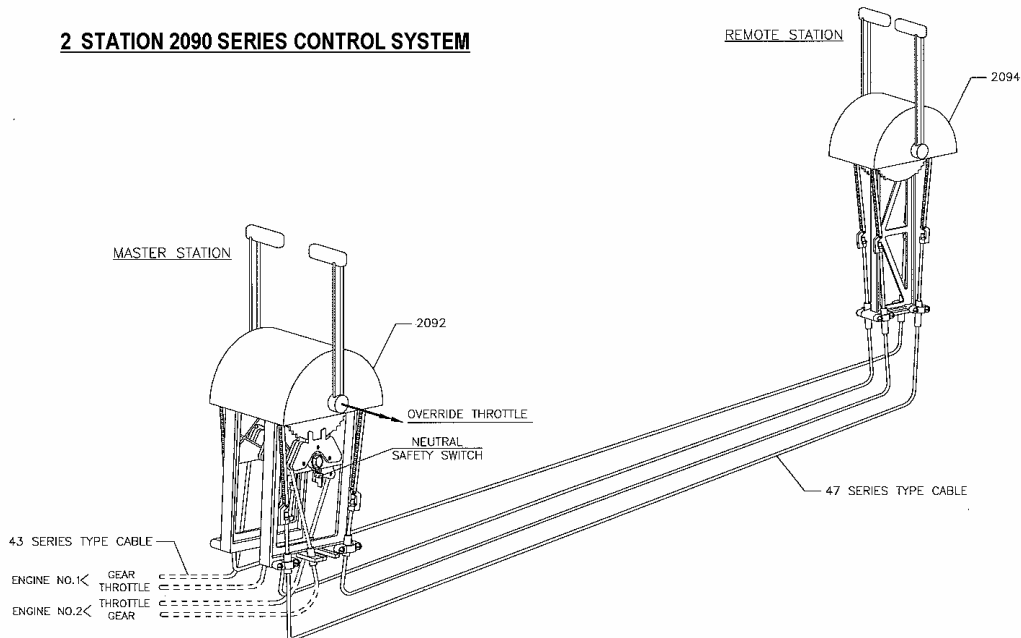
Pull-pull cables, known as 47 series cables, are required to interconnect the control heads. These cables operate in a pull mode only which give better performance and eliminate lost motion.

For connections from main control station to the clutch and throttle, 43 series cables are recommended. Please specify the length when ordering.

The installations for the push pull control cables are the same as the single lever control and should be done before the pull-pull control cables.

## Installing Pull-Pull and Push-Pull Cables on the 2090 Series Control

The 2090 series provides single lever control from two control stations. The Kobelt 2090 series control operates on a pull-pull cable system between the control heads. These cables, Felsted 47 series cables, operate in a pull mode only giving better performance and eliminating lost motion.



Push-Pull cables, Felsted 40 series cables, are used to connect the head to the engine clutch and throttle. 43 series are recommended. The installation instructions for the push-pull control cables are the same as the single lever control. Pull-Pull cables, needed to interconnect the control heads, should be installed last.

After the master station is connected to the engine, the cables can be connected from the master station to the remote station. It is important that the cables are of the right lengths. Too short a cable can result in tight bends which will increase friction. Too long a cable will also result in extra loops, which will again generate additional friction to the operation. Either of the above can make the control stiff and difficult to operate.

After the cable is attached with the clamps on the bottom of the supports of the control heads, the chain can be placed over the sprocket. When the control head is in the neutral position, with handle in mid-position, the loose ends of the chain should be equal in length on either side of the sprocket. The cable core is equipped with two nuts on either end. One of the nuts must be removed and the cable-end passed through the adaptor link. The nut can then be re-installed.

It is also important to remember that in order to get the handles in both stations moving in the same direction, the cable must be crossed between the control heads, i.e. the forward cable from the master station is attached to the aft side of the remote station and the forward cable of the remote station is attached to the aft side of the master station.

