

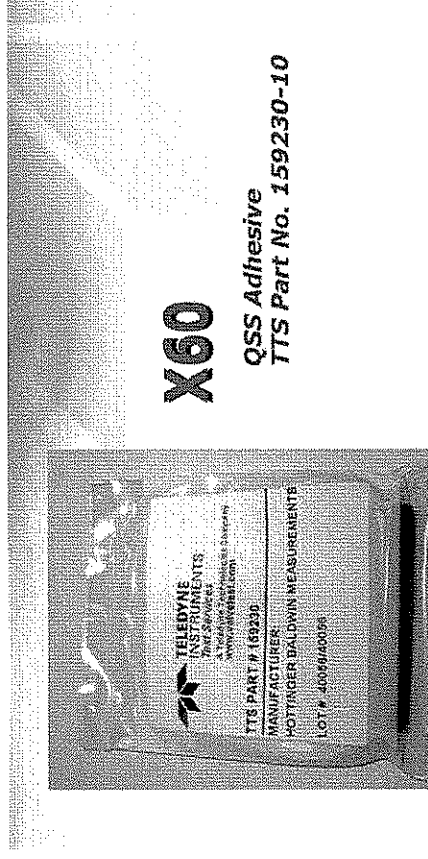
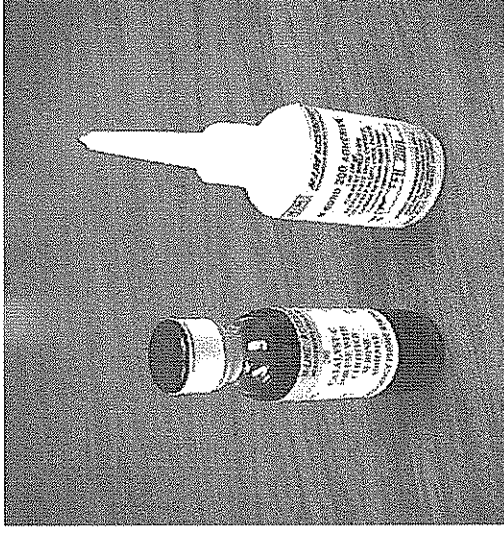


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QSS Tip and Tricks

To get a good QSS installation:

- Follow the procedure
- No short cuts
- Take your time





Common problems

- **Cleaning: Clean, Clean, Clean**
 - Sand and clean with M-Prep Conditioner. This step should be repeated until the stem is CLEAN. Wipe the excess off before it dries.
 - Clean with M-Prep Neutralizer and wipe the excess off before it dries. Try to neutralize a larger area than what was conditioned.
- **Not enough glue**
 - It is better to wipe off the excess glue after the QSS is mounted than to not have enough.



Common problems (continued)

- **X60 Problems**
 - Heat will shorten the pot life of the glue. The glue should be stored in a refrigerator and some people transport it to the valve in a cold pack. **DO NOT TRANSPORT X60 PACKETS IN YOUR POCKET.**
 - Mixing too long will make it start to cure while in the package. Remove the divider that separates the package halves. Then rub the package back and forth 3 or 4 times over a square corner (table, cabinet, or similar). Quickly cut the package and get the glue out of the bag and on to the QSS. This will keep the glue from heating up in the bag.



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QSS Tip and Tricks

- **QSS Probe Check after installation**
 - Most procedures recommend probing the individual strain gages on a QSS while monitoring the output to verify adequate bonding. The numbers should change slightly, but then return within $10 \mu\text{"/"}$ from the original reading.
 - While probing the gage the output should not change more than $30 \mu\text{"/"}$ even though it returns within $10 \mu\text{"/"}$.



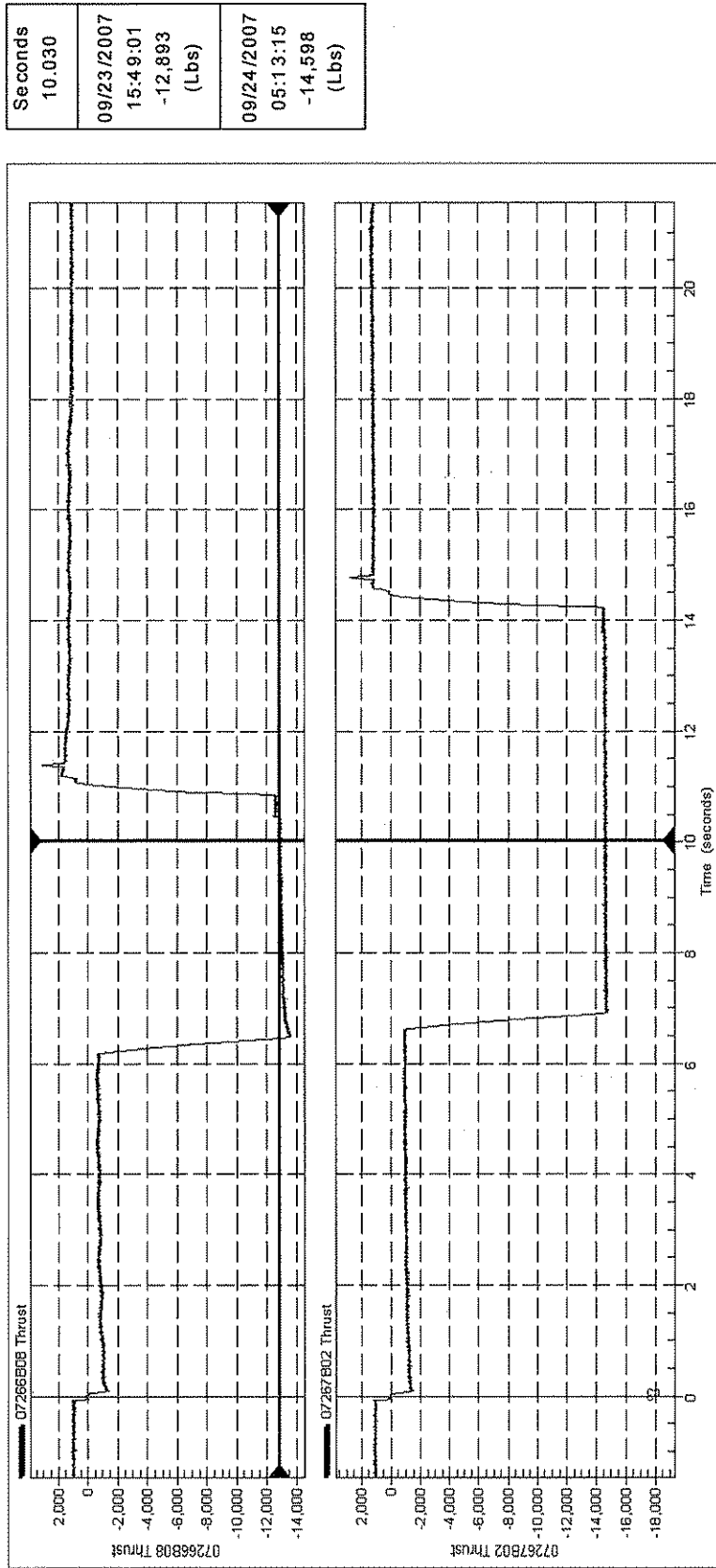
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QSS Tip and Tricks

- **The following slides show thrust traces from the same valve. Nothing has changed on the valve between the traces except for remounting the QSS.**



Thrust Overlay @ Marker c3

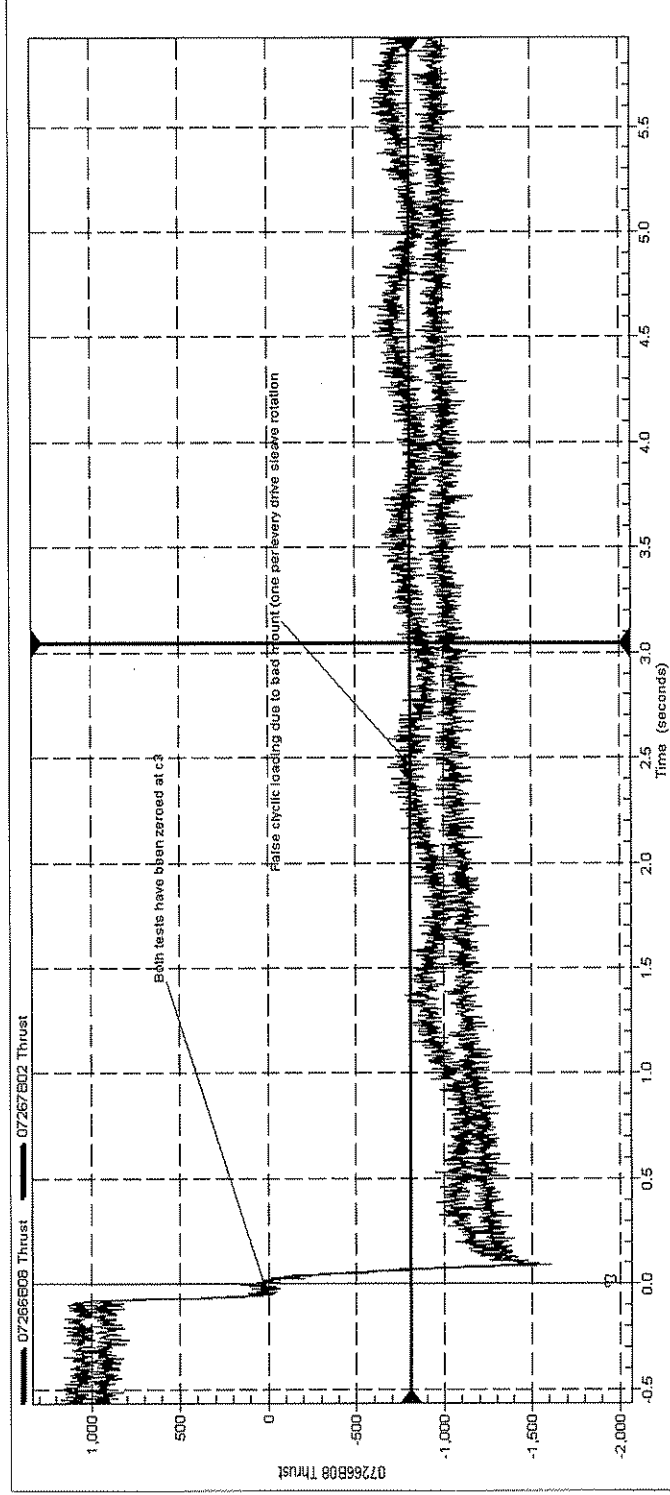


- The black trace is the result of an imperfect QSS-to-stem bond.



QSS Tip and Tricks

Good Installation vs Bad Red is Good



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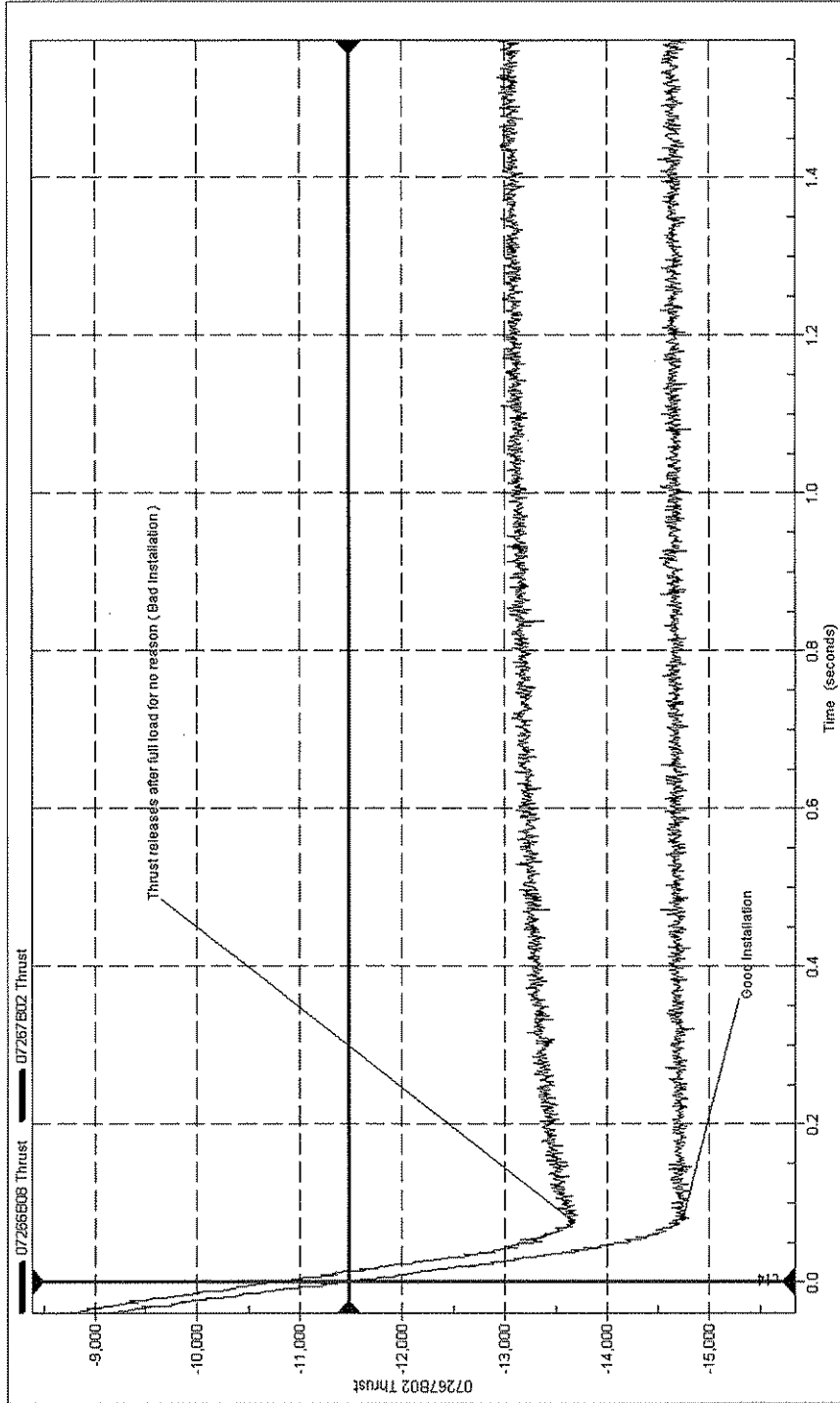
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- These traces are both zeroed at c3. Notice the cyclic loads on the black trace. This is because only one side of the QSS is bonded correctly. Therefore the QSS may be affected by bending affects which it normally would cancel out.



QSS Tip and Tricks

Seconds	0.000
09/23/2007	15:49:01
	-10,788 (Lbs)
09/24/2007	05:13:15
	-11,480 (Lbs)



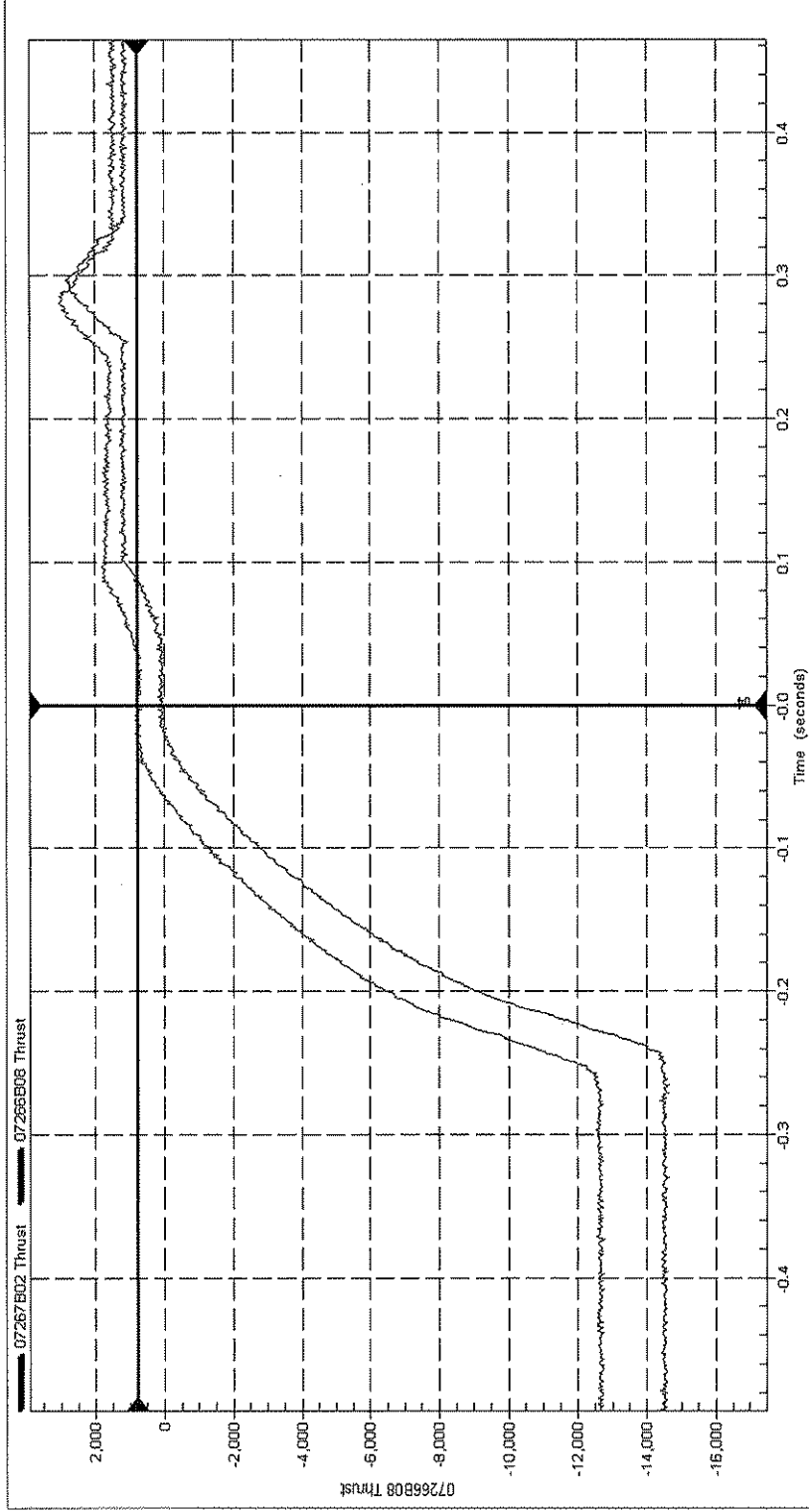
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- The black thrust trace, acquired with an imperfectly bonded QSS, is lower and it releases at maximum load.



QSS Tip and Tricks



Seconds	0.000
09/24/2007	05:13:15
	-16.22
(Lbs)	
09/23/2007	15:49:01
	766.4
(Lbs)	

- The difference between the open and close zero plateaus is 766 lbs on the bad installation (red trace), compared to only 16 lbs on the good installation (black trace).