Kickstand frame repair

The big tab on the frame that mounts the kickstand, or side-stand got ripped up. Here I weld on a new tab.

A year ago the original frame bracket just gave way. I cut it off with an angle grinder. I then sawed up a junk frame to get a good bracket. I welded it once. It lasted a week. I welded it again. It lasted 3 seconds. I plopped the bike on it's side and welded it again. I guessed the angle wrong so the bike would tip over. I took a torch to the side stand and bent it. I should have cut the bracket off and started over.

The Sportster sidestand bracket takes a lot of abuse on a kickstart-only bike. This one has broken off after a bad welding job.

My 1977 Sportster started having side stand problems 10 years ago. I remember the bracket splitting and having to have it welded back to the frame. I good tip-- on kick-start Sportsters you can just kick the kick starter down and lean the bike over the other way on the kickstarter.

A lot of the side stand problems were caused by the front wheel. Don't laugh. Always look for causality elsewhere in a Harley, not at the thing that breaks.

Someone had put a 21-inch front tire in the bike (as well as a 16-inch rear). The front raised the frame from the design position and caused it to lean more on the kickstand. The 16-inch rear rubbed the taillight wiring raw and blew generators and regulators for two years before I figured it out.

I don't have side stand and generator problems on this bike. I have customization problems. Think hard about this.

My welding lasted six months before the bracket broke off again. This looks a little strange for an iron Sporty. My 1977 has a 1995 primary cover with the starter pocket cut off and welded up. I run a 57 to 66 dry clutch setup with a custom lever/ I welded a foot peg mount on the 77 frame so I can run the 76 and earlier foot pegs instead of the engine mounted foot pegs. I run a 73 and earlier right-side shifter on the cut down shifter shaft.

Pathetic. Not just the out of focus picture. There were just two small places where the weld actually penetrated and held. It's amazing the weld held at all.

Here's a shot down under the primary cover where the side stand mounted. You can see the lousy weld.

I bent the side side stand with a torch to make up for welding the bracket on at the wrong angle. My dad used to joke about golfers who had a bad slice "fixing" their slice by just standing at an angle to the fairway. They still sliced, only the ball went down the fairway kinda sorta. Same stupidity here. I should have ground of the bracket and started over. Actually the real cool way to fix this is to pull the motor.....

....and weld in the is genuine authorized factory replacement piece I got from Turlock Bob at the Cow Palace swap meet. I'm keeping this in reserve just in case I can't fix this thing with the engine in. Time will tell.

I use the torch to straighten out the side stand. This part has a dull silver finish . This is cadmium plating. Cadmium is highly toxic. Breathing the fumes is deadly. Zinc from galvanizing is toxic too. But it cleans out of your system. If you breath a lot of zinc fumes you get nauseous but you're OK after a couple days. Cadmium builds up in your system while you feel fine until one day you fall over dead.

A whiff of smoke, deadly cadmium fumes. The stand is a lot straighter now.

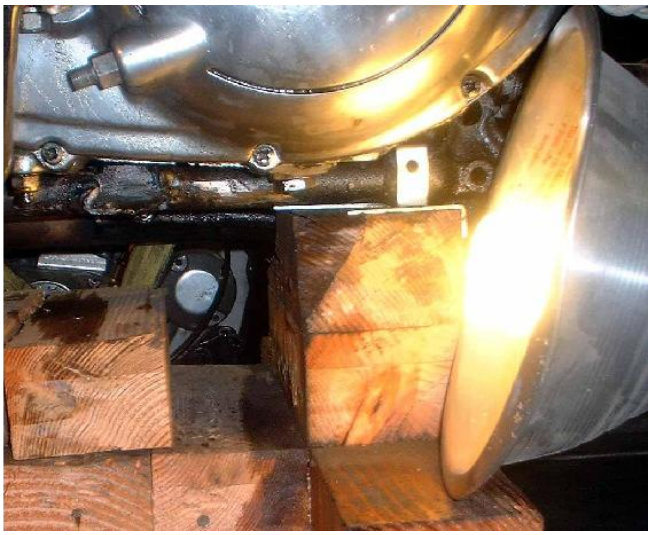
While it's still red hot I clamp it hard in the vise twice at 90 degree rotations to straighten it that last little bit.

Cool off the cadmium fumes. Don't just set it down You will forget and pick it up guaranteed and burn the living daylights out of your hand. Cool it off right away and that's one less time bomb you have ticking around your work area.

Time for the right-angled grinder, shown here with the two essential accessories. There is nothing more punk then some moron that thinks risking his hearing and eyesight is somehow macho and admirable. There are no blind and deaf alpha males. Like cadmium poisoning, hearing loss is cumulative-- you don't need blood coming out your ears to damage them permanently.

I wear earplugs when I ride and I use muffs when I grind or shoot or make other loud noises. I was using a 1/2 inch hand held belt sander on a 1954 straight leg frame. I turned my head sideways to see as I cut some braze material from where somebody was filling the joints. I was wearing safety glasses under goggles. The goggles came a little off my nose and a chunk of steel went under them, bounced off my cheek and went under the safety glasses and into my eye. I knew right away it was bad. I tried to rub it out with a paper towel. Ha ha . Off to the clinic to have them grind it out of my cornea before it rusted. Then a follow up to and ophthalmologist to grind out the last bit and get it perfect. About 150 dollars but at least I can still see. Use glasses.

OK, clean up the frame as best can be done with the engine still in.



At my shop in Sunnyvale I have an 8 foot fixture every 200 square feet as well as halogen flood lights and these cheap spun clamp on fixtures with florescent bulbs that can be dropped without burning out like incandescent ones. If you can't see you can't see. Kind of obvious, but critical in workmanship cases like this. Light is your friend. Spend time with your friends.

Now that I can see, I touch up a few more areas on the frame.

The frame is done. Now I really lay into the bracket. My welder buddy Phil would talk about guys like me that did these splatter jobs and then bring them in asking him to "just touch them up". He had to explain that it takes way longer to grind out all their bad welds, bevel everything and clean everything so a decent weld can be made. This time I hope to do a better job.

Here's a view of the first level clean up. Still a lot of work to do. There is a little undercut by the spring that I tried to bridge before, but know I decide to grind the undercut way deep so I can get a stick in there to weld the actual pad.

Keep cooling off the parts. Burnt fingers are a real drag. You will be reminded of your stupidity for weeks to come every time you use your hands which is about 16 hours a day for most people.

I really got medieval on this thing. You can see where I ground the undercut way way deep by the spring so I can get in with the stick welder. Also notice the bevels on all the three sides that I will be able to reach with the engine still in the frame. My buddy. Phil was the guy whose dad used to say: "Everybody wants to **be** somebody. Nobody wants to **become** somebody." I don't know if I'll ever be a welder.

Here's another view of the bracket. Now the problem will be holding the bracket while I do the weld.

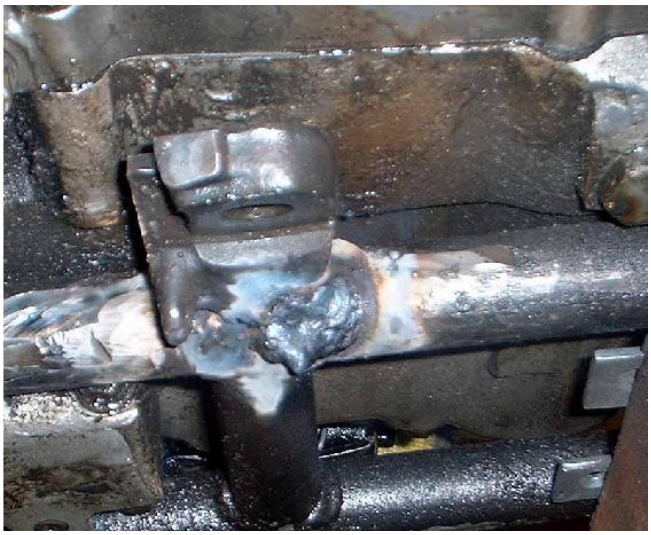
I won't show the whole fiasco where I tried to epoxy the bracket to the frame in the right position so I could then weld it. It didn't work so I peeled off the epoxy and tried to fixture the thing up. I took out this screw so I can take the stand apart easily once I tack weld the bracket.

The pin was binding. Experience has taught me that any hangs up or deviations will result in too much force and the bracket will break at the tack weld and I have to grind everything clean again. I sand off the burr on the pin. The belt is not even running, I'm just rubbing it against the stopped belt.

The stand had a burr in it too. A big rat tail file takes care of this. I make sure the pin just falls through the hole the way it is supposed to.

Here's a shot of the frame area I need to weld the bracket to.

I am leaving the stand on while I position the bracket. The angle can be determined by the up position of the stand. There is a little dent in the engine case where the stand used to hit when it was up. The headache now was to hold it in place. I tried to clamp it but that didn't work. I then clamped a big clamp to the frame and adjusted so the stand would rest just right against the case. Now I've got the free hand I need to do a tack weld while holding the bracket and stand with the other hand.



Here's the second tack weld. It's a little droopy but some of that glop is flux that will break off. I did a little one with the clamp setup and using my left hand I could get the stick in for a little tack. I then took the pin out (easily due to all that deburring) and did a pretty big tack.

I put the stand back on to eyeball it and see how it looks in the up and in the down position. I compare the gap from the top of the pin to the engine case to another bike.

Here I swing the stand back and see how it looks in the up position. It looks much better than it used to with that bent stand. It is a little low but it almost stops in the exact same dent the original stand did 25 years ago. After this looked OK I just ran the stick around the bevels. It's like paint--days of preparation minutes of painting. The actual welding took about 20 seconds. It was still a little splattery so I won't shame myself with a picture you decent welders will laugh at.

Always misery and suffering with Harleys. I guess it builds character. The little stop screw that holds the pin in won't thread in easily. I clean up the the threads (12-24) and run the screw into a die

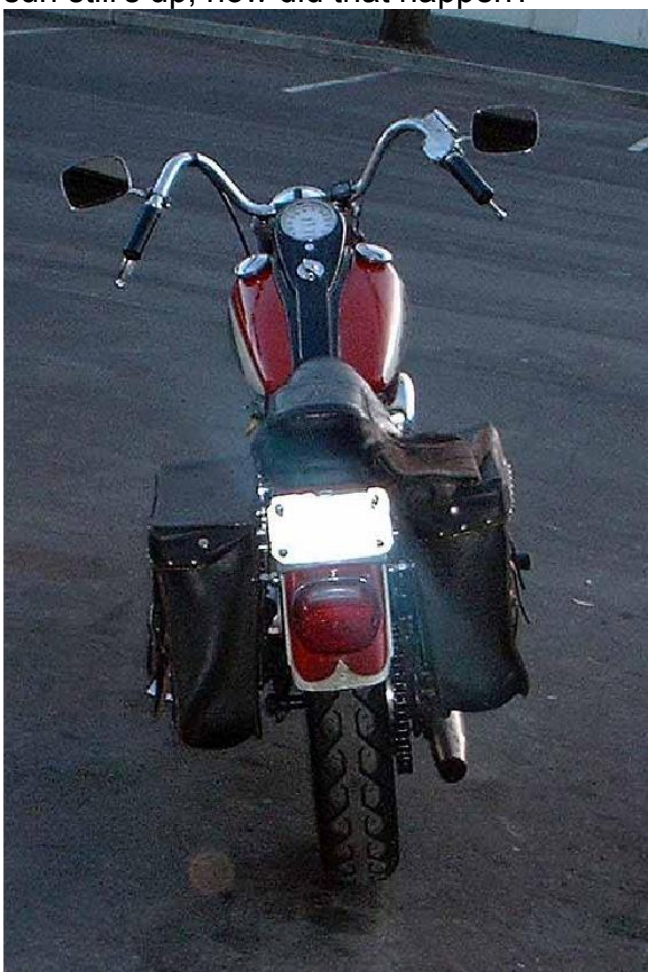
I rant and rave about how bad Loctite is and how you shouldn't glue your bike together and then I whip it out and use it. Hypocrisy is the tribute vice pays to virtue. The is one of the few places I think Loctite is a good idea.

Countersink-head screws are notorious for backing out. The military won't let you use them in high vibration environments unless you use little floater nuts so they self align. Dale my buddy that retired from the GE electric motor plant explained that the countersink never lines up perfectly with the hole. It either presses on one side of the screw head or the other. Depending where the threads start you have a 50-50 chance the screw will vibrate out. The other 50% of the time it actually will tighten under vibration. Unfortunately having your side stand fall off only 50% of the time is not a viable option.

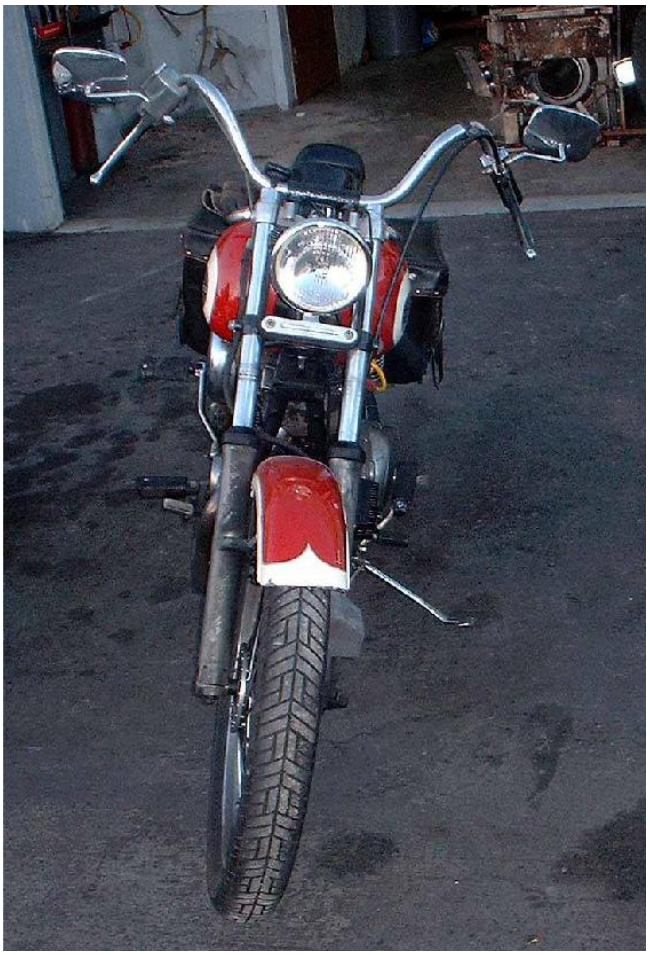
The screw still didn't want to thread in even after I chased all the treads. I went into the parts stash and found this nifty jiffy stand I scored at a swap meet. It's a bit longer so I figure if I did weld the bracket in perfectly this will compensate for the 21-inch wheel in the front. It's also got the little tab on the end that makes it a lot easier to find the stand with your heel.

I get the bike up on the old desks I use to work on? A hoist on the roof beam. The desks legs are dropped into big steel tubes I welded casters to. I wheel the desk under the hoist, lift the bike and .....

roll the desk out of the way so I can lower the bike back on the ground. Hmm-- the sun still's up, how did that happen?

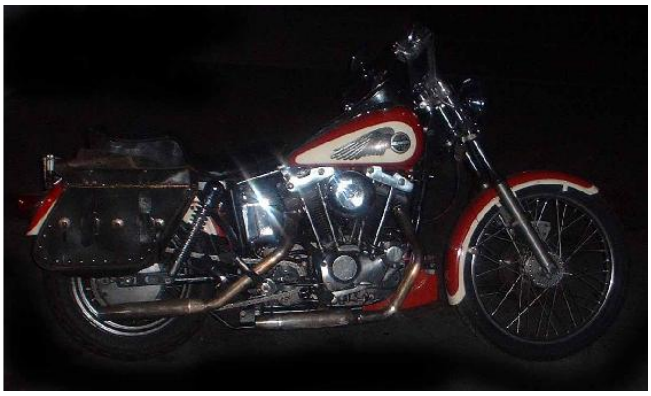


The big moment-- yup its perfect.



Here's the front view.

The truly magnificent $205 Fuji Finepix 2300 digital camera had filled up all three of my smart media cards so I went upstairs and used the ultra cool USB cable to suck them into my computer. By the time I surfed the net a little it was dark but I took a few pics of the bike anyway. Pretty dramatic huh? This bike has shovelhead FXE sheet metal and a Ness dash cover. I run a nice set of bags Denton sold me dirt cheap (he sold me the sheet metal too). I've had this bike 20 years and I love it more every year. I really love it when it doesn't fall over when I kick it.



Here's the show side of the bike. I threw the sprocket cover in the trash and fabbed up a steel bracket for the kick starter. I mount the battery in the front in that swoopy bracket you can just make out. I need to redesign it though-- this fender just touches it at full jounce. That's a project for another day.

It will never tip over no matter how hard the wind blows but it it upright enough so I can get a good strong kick in without putting a lot of force into the side stand. I used to kick them balancing the bike with the side stand up but after a few slips I don't need any worse Sportster knee then I have. Now I leave the side stand down and put my left knee on the seat. That way when the starter ratchet slips (and it will, sooner or later) you can't follow all the way through and smash your knee at the bottom of the stroke-- your left leg is curled under you and cushions the blow.