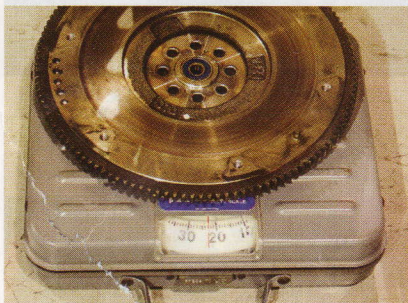
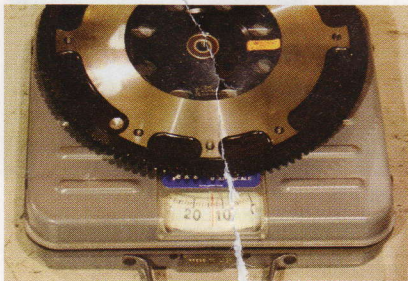




READY FOR INSTALLATION IS AN ACT HEAVY DUTY PERFORMANCE CLUTCH PLATE, FULL-FACE ORGANIC STREET DISK AND STREET LITE CHROME-MOLY FLYWHEEL. YOU'LL BE GLAD TO KNOW ALL ACT CLUTCHES ARE SFI 1.1 CERTIFIED AND MEET OR EXCEED REQUIREMENTS. ALSO INCLUDED IN EVERY ACT KIT IS A PILOT BEARING, RELEASE BEARING, AND CLUTCH ALIGNMENT TOOL.

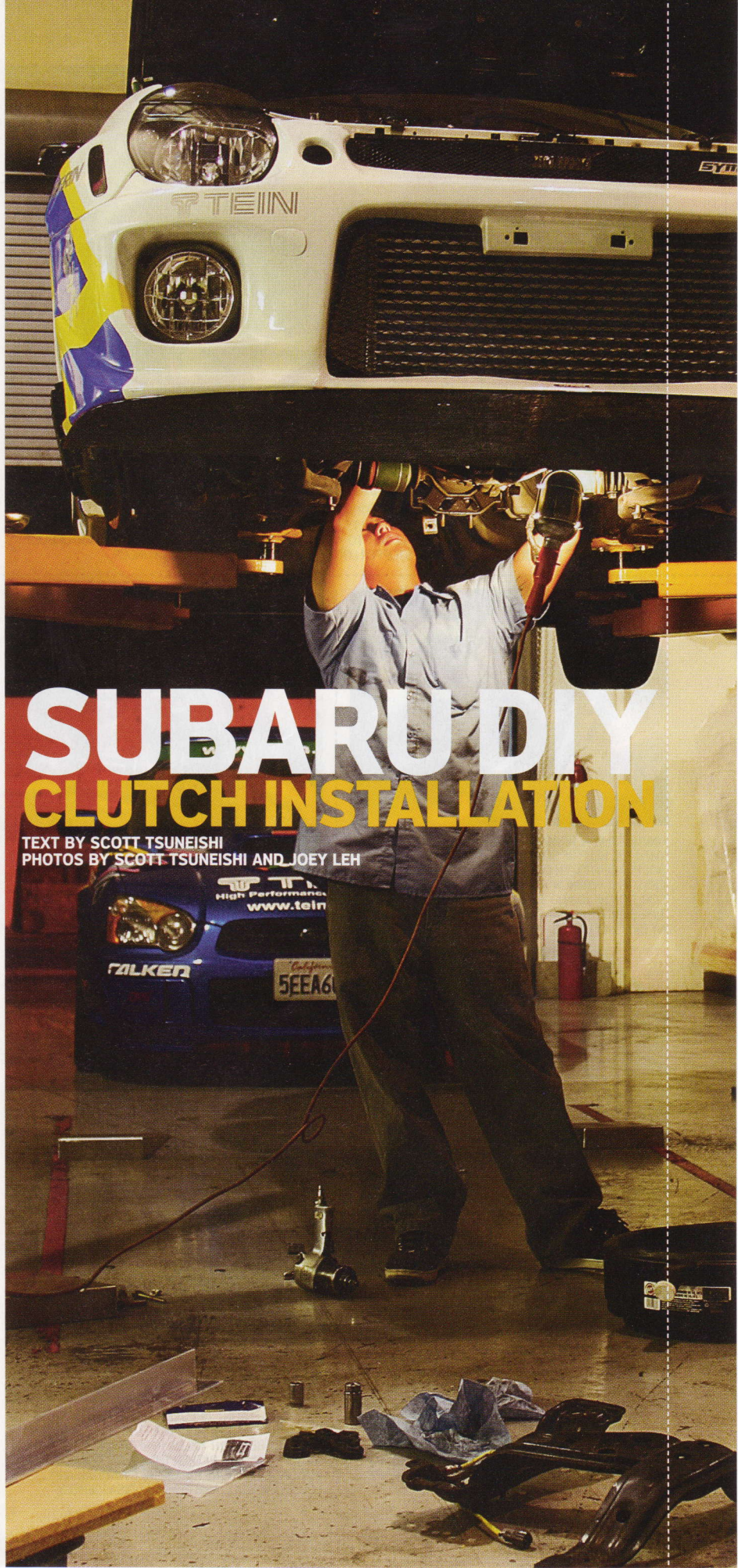


GRABBING THE NEAREST WEIGHT SCALE, WE WEIGHED IN THE FACTORY FLYWHEEL AT 23 POUNDS.



ACT CLAIMS THEIR STREETLITE FLYWHEEL COMES IN AT 13.9 LBS. SURPRISINGLY, OUR SCALES SHOWED US MIRRORED NUMBERS. THE THEORY GOES, FOR EVERY 1LB OF WEIGHT TAKEN OFF, A RECIPROCATING ASSEMBLY WILL NET AN AVERAGE OF 2.7HP. WITH FORCED INDUCTION VEHICLE AND NITROUS UNITS, THE NUMBERS WILL VARY. THE LIGHTER ACT FLYWHEEL (9.1LBS LIGHTER) IS CALCULATED TO APPROXIMATELY A PICKUP OF 24.57HP OVER USING THE FACTORY FLYWHEEL.

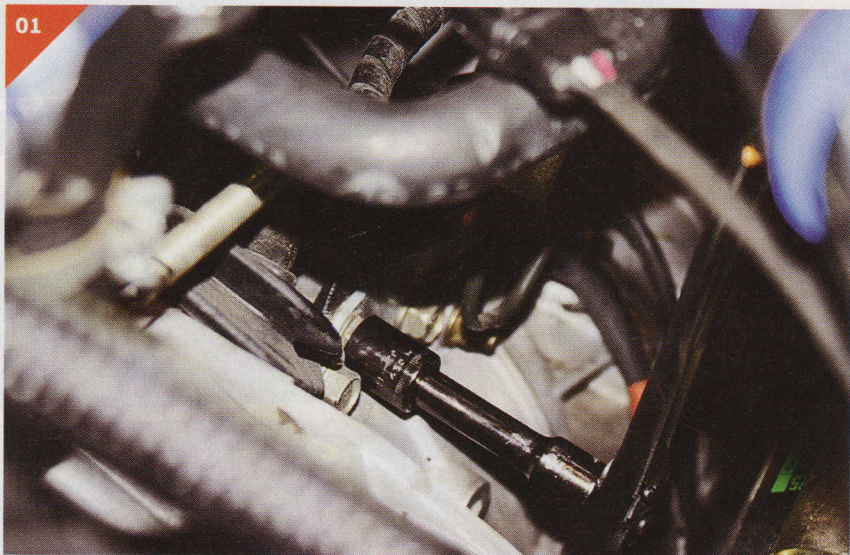
Clutch slippage is no laughing matter. You line up against a rival competitor and notice your car goes limping off the line. Your once-proud Subaru is now reduced to geriatrics mobile, slowly crawling with every shift and revving incessantly. Now you're faced with two options. The first is biting the bullet and taking your vehicle to a local mechanic, dishing out anywhere from 600-900 dollars for a simple clutch job. The second is sucking it up and spending a full day installing it yourself—the choice is yours. We'd like to think you'd want to use those hard earned dollars treating yourself to a couple lap dances at your favorite club rather than giving that greasy mechanic those elusive Benjamin's. Regardless of whichever direction you move towards, we give you, our valuable readers, a comprehensive step-by-step installation process to get your car back to pimp status in no time.



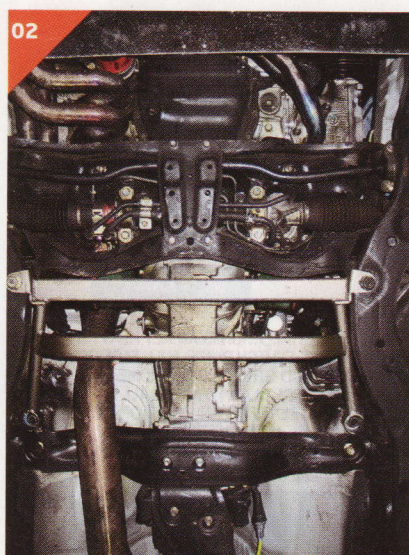
# SUBARU DIY CLUTCH INSTALLATION

TEXT BY SCOTT TSUNEISHI  
PHOTOS BY SCOTT TSUNEISHI AND JOEY LEH

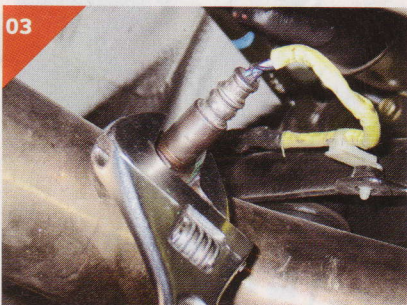




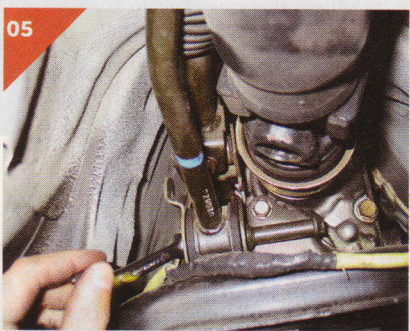
01 THOSE WHO ALREADY HAVE A FRONT MOUNT INTERCOOLER CAN SAVE A FEW STEPS WITHOUT HAVING TO REMOVE THE FACTORY TOP MOUNT UNIT. REMOVE THE TWO BOLTS HOLDING THE BRACKET TO THE CLUTCH SLAVE CYLINDER AND REMOVE THE RETAINER SPRING. BE CAREFUL NOT TO YANK ON THE ROD PISTON INSIDE THE CYLINDER. UNBOLT AND REMOVE THE TWO BOLTS ON THE PITCH STOPPER LOCATED JUST ABOVE THE SLAVE CYLINDER.



02 REMOVE PARTS SUCH AS UNDERCARRIAGE TRAYS AND AFTERMARKET BRACING TO GAIN ACCESS TO THE DOWNPIPE AND FACILITATE THE TRANSMISSION REMOVAL.



03 UNBOLT THE AFTERMARKET OR FACTORY DOWNPIPE WITH THE HELP OF SOME WD40 IF YOUR NUTS AND BOLTS ARE FROZEN ONTO PLACE WITH RUST. USE A CRESCENT WRENCH TO EASILY REMOVE THE O2 SENSOR. GO AHEAD AND JUST LEAVE IT HANGING FOR THE TIME BEING. THE UNIT WILL COME OFF WITH THE TRANNY BRACKET LATER.



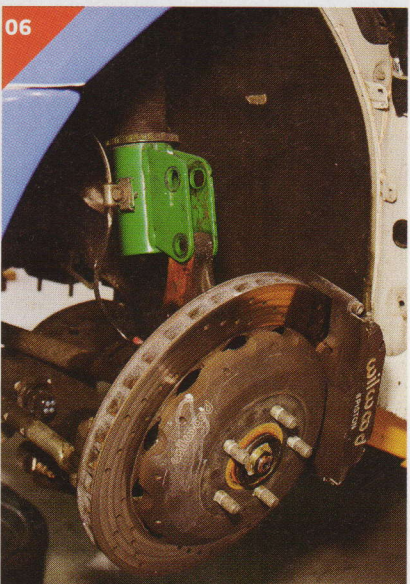
05 REMOVE THE GEAR SHIFT ROD (SHIFTER LINKAGE) AND STAY FROM THE TRANSMISSION. NOW WOULD BE A GOOD TIME IF YOU'RE LOOKING TO UPGRADE YOUR SHIFTER BUSHING FOR A FIRMER UNIT. THE FACTORY BUSHING GIVES THE WRX THAT SLOPPY FEELING WHEN SHIFTING OR IN GEAR.



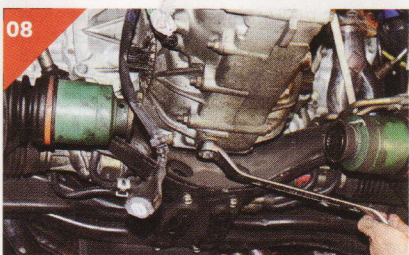
07 USING A 6MM PUNCH, POUND OUT THE SPRING PIN COMPLETELY TO SEPARATE BOTH FRONT DRIVESHAFTS FROM THE TRANNY. IT'S A GOOD IDEA TO REPLACE THESE PINS WITH NEW SETS WHEN REINSTALLING YOUR DRIVESHAFTS.



04 WITH THE DOWNPIPE OUT OF THE WAY, REMOVE THE EXHAUST SYSTEM. YOU DON'T NECESSARILY HAVE TO TAKE THE WHOLE UNIT OFF. JUST REMOVE THE B-PIPE WHILE YOUR CANISTER CAN REMAIN INTACT.



06 WITH BOTH FRONT TIRES OFF, UNBOLT BOTH FRONT STRUT TO HUB ASSEMBLY BOLTS IN PREPARATION TO REMOVE THE FRONT AXLES. PERFORMING THIS METHOD SAVES MORE TIME RATHER THAN THE TYPICAL SUBARU MANUAL DIRECTIONS REQUIRING SWAY BAR AND LOWER CONTROL ARM REMOVAL DISASSEMBLY.

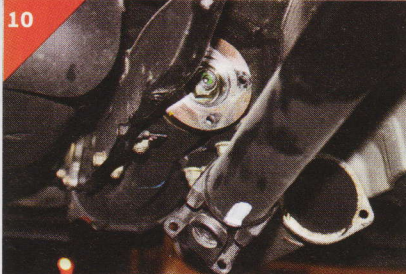


08 BEFORE WE GET TOO FAR INTO THE TEARDOWN, DRAIN THE TRANSMISSION FLUID BEFORE ATTEMPTING TO YANK OFF THE DRIVESHAFT. WE NOTICED THE MAGNETIC DRAIN PLUG HAD UNWANTED METAL SHAVINGS. LOOKS LIKE A TRANNY REBUILD WITH SOME STRAIGHT CUT GEARS OR HELICAL TYPE IS COMING UP FASTER THAN WE EXPECTED.



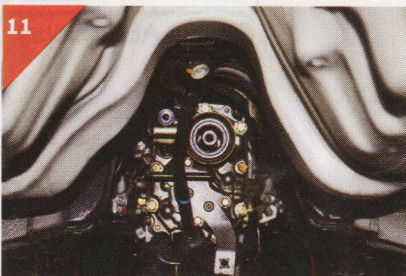
09 UNBOLT THE SIX BOLTS HOLDING UP THE DRIVESHAFT PROTECTOR.





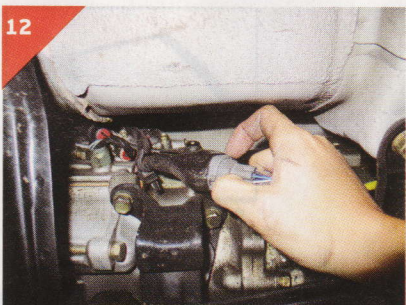
**10**

WHEN PREPARING TO REMOVE THE DRIVESHAFT, ASK A FRIEND TO JUMP IN YOUR SUBIE AND HOLD DOWN THE BRAKES FOR AN EASIER JOB REMOVING THE FOUR-BOLTS CONNECTING THE DRIVESHAFT TO THE AXLE HUB. THE TIGHT AREA LEAVES YOU WITH JUST ENOUGH ROOM TO USE AN OPEN-END WRENCH AND SOME BRUTE STRENGTH.



**11**

BE CAREFUL WHEN SLIDING THE DRIVESHAFT OUT FROM THE TRANSMISSION NOT TO BEND OR DAMAGE THE OIL SEAL. IF THE SEAL IS CRACKED, DEFORMED, OR DAMAGED MAKE SURE TO REPLACE IT WITH A NEW SET OR YOU'LL HAVE A LEAKAGE PROBLEM ON YOUR HANDS IN THE FUTURE.



**12**

UNCLIP THE NEUTRAL SWITCH AND BACKUP SWITCH WIRES, MAKING SURE BOTH CLIPS AND WIRE LEADING TO THE ENGINE BAY HAVE BEEN FULLY DISCONNECTED. THE RUBBER SHIELDED O2 SENSOR CLIP ALSO NEEDS TO BE REMOVED. BE SURE, WHEN REMOVING THE TRANSMISSION, THAT ALL WIRES AND FOREIGN OBJECTS ARE CLEAR FROM BEING SNAGGED OR CAUGHT IN THE PATH OF THE TRANNNY.



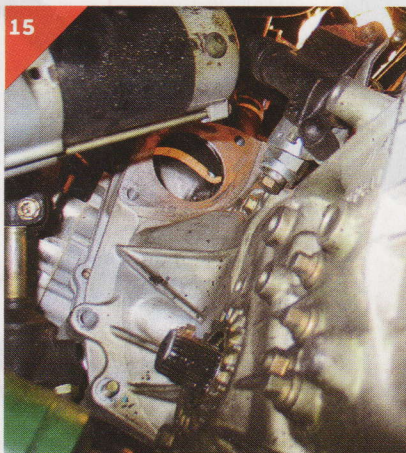
**13**

REMOVE THE SIX BOLTS HOLDING THE TRANSMISSION REAR CROSS MEMBER TO THE VEHICLE CHASSIS.



**14**

WE FIGURED NOW WAS AS GOOD OF A TIME AS EVER TO REPLACE THE FOUR FACTORY CUSHION RUBBERS WITH A SET OF SUPER PRO (FULCRUM PERFORMANCE) POLYURETHANE BUSHINGS. WE NOTICED WHEN GIVING THE VEHICLE A QUICK BLIP OF THE THROTTLE WHEN DRIVING, THE SHIFTER WOULD MOVE EXCESSIVELY DUE TO THE SOFT FACTORY BUSHINGS.



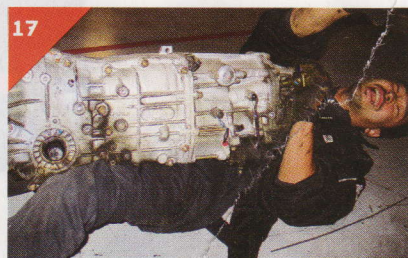
**15**

REMOVE THE 6 BOLTS AND LOWER 2 NUTS CONNECTING THE TRANSMISSION TO THE ENGINE INCLUDING THE STARTER.



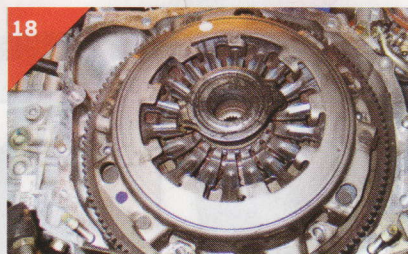
**16**

AN IMPORTANT PIECE TO REMOVE BEFORE ATTEMPTING TO PRY APART THE TRANSMISSION HOUSING FROM THE BLOCK IS THE RELEASE FORK SHAFT. REMOVE THE PLUG WITH A 10MM SOCKET TO ACCESS THE SHAFT. USING A 6MM DIAMETER BOLT, SCREW IT INTO THE SHAFT AND PULL THE UNIT OUT. PULL OUT THE RUBBER SHIFT BOOT AND RAISE THE RELEASE FORK AWAY FROM THE RELEASE BEARING TO FREE THE PIECE. PAY CLOSE ATTENTION TO THE PROPER DIRECTION OF THE FORK WHEN REINSTALLING THE UNIT.



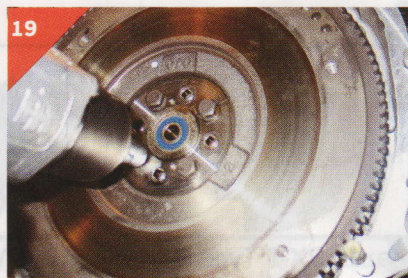
**17**

A TRANSMISSION JACK IS ALWAYS THE SAFEST AND PROPER WAY TO REMOVE A TRANNNY, BUT THEY DON'T COME CHEAP. IF YOU'RE ON A BUDGET, YOU CAN PURCHASE A CRADLE FOR YOUR HYDRAULIC FLOOR JACK TO FACILITATE AN EASIER REMOVAL AND INSTALLATION PROCESS. TRUST US, SUBIE TRANNNYS AREN'T PARTICULARLY ON THE LIGHTWEIGHT SIDE.



**18**

WHEN REMOVING THE FACTORY CLUTCH AND PRESSURE PLATE, REMEMBER TO ALWAYS REMOVE THE BOLTS IN A CROSS DIRECTIONAL STAR PATTERN TO PREVENT ANY WARPAGE TO THE UNIT.



**19**

SUBARU SELLS A CRANKSHAFT STOPPER TO MAKE REMOVING THE FLYWHEEL EASIER. IF YOU LACK THAT CERTAIN PIECE OR JUST DON'T WANT TO BOTHER, HAVE A FRIEND OR YOUR MOM STAND IN THE FRONT OF THE VEHICLE HOLDING THE CRANK PULLEY WITH A BREAKER BAR WHILE YOU CRAWL UNDERNEATH AND REMOVE THE FLYWHEEL BOLTS IN AN ALTERNATING CRISS CROSS STAR PATTERN.

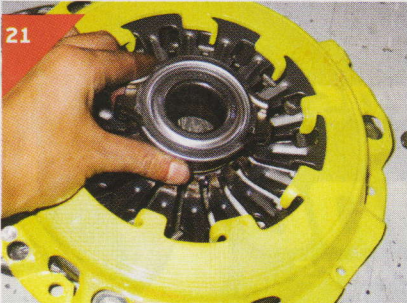


20



USE A RUBBER Mallet TO GENTLY TAP THE PILOT BEARING IN PLACE. USING A TORQUE WRENCH, INSTALL THE NEW ACT FLYWHEEL WITH A MIDWAY TORQUE OF 26.4 LB-FT ON ALL THE BOLTS BEFORE THE FINAL TORQUE SPEC.

21



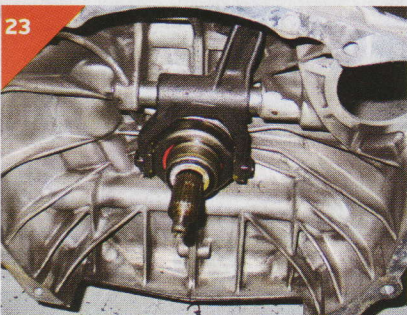
HERE'S AN IMAGE OF THE THROW OUT BEARING. DON'T INSTALL THE UNIT JUST YET. PUTTING IT ON NOW ONLY MAKES THE TRANSMISSION INSTALLMENT A LOT HARDER.

22



A CLOSE-UP OF THE RELEASE FORK SHAFT

23



INSTALL THE THROW OUT BEARING ONTO THE RELEASE FORK. BE SURE NOT TO SPRAY THE UNIT WITH CLEANER SOLVENT OR NON AUTOMOTIVE TYPE GREASE.

24



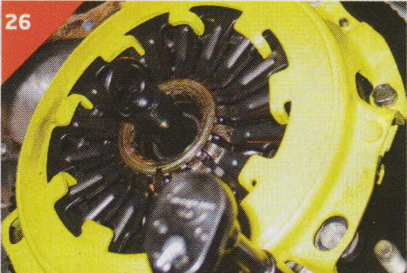
IT'S IMPORTANT TO ALWAYS PROTECT THE INTERNALS OF THE OIL SEAL FROM CONTAMINANTS ONCE THE TRANNNY WAS REMOVED.

25



OIL OR SOLVENTS CAN RUIN A PERFECTLY GOOD CLUTCH WITH UNWANTED GLAZING. USE BRAKE CLEANER ON A CLEAN RAG TO WIPE OFF BOTH THE PRESSURE PLATE DISK AND FLYWHEEL TO CLEAN OFF ANY DEBRIS.

26



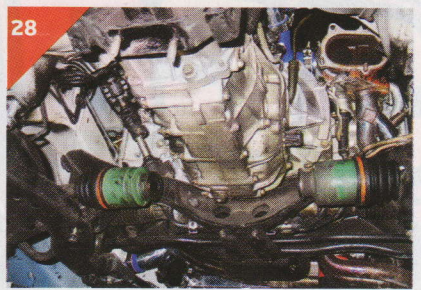
LINE UP THE NEW ACT HEAVY DUTY CLUTCH AND PRESSURE PLATE USING THE PROVIDED CLUTCH ALIGNMENT TOOL. TORQUE THE COVER BOLTS TO 11.6 FT LBS AGAIN IN A CROSS PATTERN TO RESIST WARPAGE.

27



REINSTALLING THE TRANNNY IS NEVER AN EASY TASK. WITH SOME HELP FROM YOUR FRIENDS HAVE SOMEONE MAKE SURE ALL THE WIRING AND HARD LINES ARE CLEAR OF THE TRANNNIONS PATH WHEN INSTALLING. IF YOU ARE USING A FLOOR JACK HAVE A FRIEND SLOWLY ELEVATE THE UNIT WHILE YOU GUIDE IT IN.

28



ONCE THE TRANNNY HAS BEEN PROPERLY ALIGNED, REINSTALL THE BELL HOUSING BOLTS AND TWO NUTS TO THE SUBARU SUGGESTED TORQUE OF 36.9 LB-FT.

29



ONCE YOU HAVE COMPLETED THE INSTALLATION PROCESS AND DOUBLE CHECKED ALL BOLTS, USE THE TRANSMISSION FILLER DIP STICK AS A GUIDE FOR A FUNNEL TO REFILL THE TRANSMISSION. WE REFILLED THE SUBIE WITH 5.5 QUARTS OF 75W90 REDLINE FLUID. THE TRANSMISSION ITSELF TAKES 3.7 QUARTS WHILE THE FRONT DIFFERENTIAL CONSUMES 1.8 QUARTS. THEY ARE FILLED TOGETHER FROM THE SAME AREA.

## Conclusion

Anxious to test out the new clutch, I hopped into the car and pressed the clutch only to realize the pedal quickly sank to the floor without rebounding back up. Double-checking the clutch cylinder, it occurred to me that the throw out bearing wasn't fully seated onto the pressure plate after the installation. I was able to fiddle with the clutch fork and properly snap the bearing's c-clip into the pressure plate and it worked like a charm. The clutch engagement or release point was definitely lower than the factory position while pedal feeling was slightly on the stiffer side. ACT states a 32-percent clamp load increase over factory. If the pedal is too low to your liking, the clutch master cylinder rod can be adjusted by screwing farther into the cylinder, actuating the cylinder sooner. Just be careful not to extend the rod too far in or it will ruin the cylinder. Be patient! Properly break in the clutch before performing any spirited driving or you'll end up with a unit that's as useless as a paperweight. So there you have it, your pockets are fat and you have consolation knowing you've wrenched and installed a performance clutch on your own ride.

## HOTBOX

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