

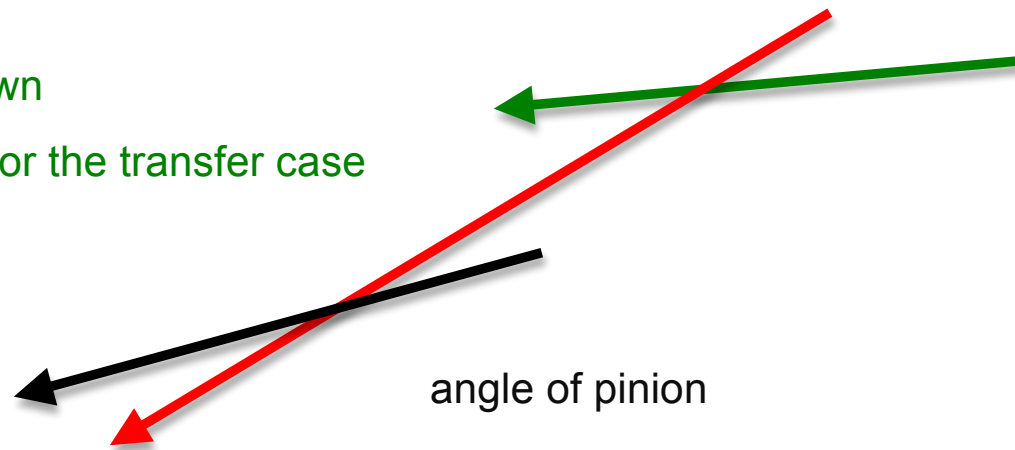
Transfer Case Slope = 2° down

10° - 2° = 8° operating angle for the transfer case

Driveshaft Slope = 10° down

Pinion Slope = 4.5° down

10° - 4.5° = 5.5° operating



We can see that the front operating angle is 8°. Assuming we are using a 1350 series u-joint, and the vehicle is not a frequent, long-range freeway cruiser, nor does it have a super-flexy suspension with monstrous travel, we decide that this is satisfactory. The axle joint operating angle is 4.5°. Because it is a rear driveshaft, the rear pinion will rotate up, let's say 2° under cruise throttle. Since our measurements and calculations were done at static, this means that in reality, under cruise throttle, the pinion slope would change from 4.5° down to 0° down. This would make the axle joint operating angle actually 10° - 6.5° = 3.5° at cruise. Since we need it to equal 8° at cruise, we need to rotate the pinion at rest to 4.5° up. This will result in a static pinion slope of 0°. So the would net a cruise throttle pinion slope of 0° + 2° = 2°. That would make our axle joint operating angle now 10° - 2° = 8° - A perfect match for the front!