LS Front Accessory Drive — Belt Routing

Bench reference · Track 01 · LS Engine Swaps

The routing diagram below covers a 6-rib LS3 / L92 front accessory drive (FAD). With Belt routing decides fitment against the frame rail and the AC line; it also decides an LSA, you swap to an 8-rib setup and adjust the tensioner travel - see the swap which accessory fails first when the tensioner weakens. Diagram the path BEFORE you notes in the second column.
tighten any bracket bolt.

BELT WRAP - 6-rib 90A (LS3 / L92 stock)
crank -> AC compressor (~145 deg) -> idler pulley -> tensioner (~65 deg) -> alternator (~120 deg) -> water pump (~110 deg) -> back to crank
   total wrap .... ~440 deg
   tensioner travel .... 0.50" usable, 0.85" max

BELT WRAP - 8-rib LSA supercharger
crank -> supercharger input (~180 deg) -> idler pulley -> AC compressor (~110 deg) -> tensioner (~55 deg) -> alternator (~125 deg) -> water pump (~80 deg) -> back to crank
   total wrap .... ~550 deg
   tensioner travel .... 0.65" usable, 1.10" max

TENSIONER LIMITS - do NOT tighten past these
   6-rib 90A .... 140 lb-ft span
   8-rib LSA .... 175 lb-ft span
   Aftermarket (Mechman / Ohio Generator) .... 200 lb-ft span

INSTALL-DAY ORDER

1. Mount water-pump pulley last - fitting it first blocks the belt path.
2. Snug AC bracket bolts finger-tight; align compressor to within 1/16" before locking.
3. Install belt dry (no power), then rotate tensioner body onto the belt.
4. Power up - confirm no chirp at idle for 30 seconds. A chirp = belt slip; recheck
5. Re-tension after first heat cycle (10 min idle) - the belt will settle.

wrap angles.

COMMON TROUBLES

- Belt chirps in damp weather: tensioner is below spec; replace with an aftermarket
- Alternator failure: belt was slipping before - the alternator over-drew while the

unit.

- Water-pump seal leak at install: pulley misaligned - countersink the bolts and

belt was not driving it.

See engine-bay-diagram.pdf for the body-channel envelope this drive sits inside.

recheck.