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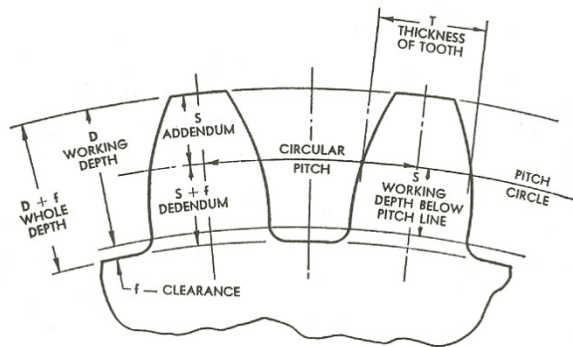
METHOD OF PRODUCING STUB DEPTH GEAR AND SPLINES

To produce a stub tooth gear, standard or nonstandard, certain information is required: Diametral pitch, pressure angle, major diameter, minor diameter, number of teeth, and circular tooth thickness, (space width of internals).

FOR EXAMPLE:

10 D.P., 20° P.A., 30 Teeth, 3.1" O.D., 2.768" R.D., 0.15708" Tooth thickness, 0.1657" D&F.

At first glance the gear tooth appears stubby, but a standard cutter can produce this part. The O.D. of this gear has been reduced, (standard O.D. is 32"). The difference between the standard O.D. and our O.D. is 10" or .05 on one side. That difference plus the D&F of the gear, (.1657") is .2157". Therefore a standard finishing cutter would work. In cases when the tooth thickness is nonstandard, a standard cutter can be modified by top-grinding to produce the correct stub tooth.



FOR EXAMPLE:

Same part as above, except the tooth thickness is .1520". The most accurate way to determine the amount to remove from the tool is to first cut a sample to measurement over pins. This will give us the tooth thickness we need. Remove the difference of root diameter produced and root diameter desired from the O.D. of the tool. This can also be determined with nearly the same accuracy without cutting a sample by dividing the difference of desired tooth thickness and standard tooth thickness by the tangent of the pressure angle. Reduce the O.D. of the tool by this amount.

FOR EXAMPLE:

.15708" - .1520" = .0051 / TAN P.A. = .0140" .0140" = Amount of Reduction