

## **Typical Applications of Limits and Fits**

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Engineers and designers are continually confronted with the problem of choosing the correct class of fit to obtain a specific functional relationship between the mating components of an assembly. As it is impracticable to produce every conceivable application, some typical examples of each type of fit taken from the preferred range are illustrated showing the degree of freedom.

- (a) Loose running fit H9/d10. This combination is suitable for such applications as loose pulleys, idler gears, large bearings for steel mills, etc.
- (b) Easy running fit H9/e9. This combination may be used on internal combustion engines for main and camshaft bearings and valve rocker shafts. It has also been found suitable for applications such as the selector mechanism shown, in which both sliding and rotary motion are required.
- (c) Normal running fit H8/f7. This is relatively easy to produce and is used in circumstances where a good quality fit is required, such as small shaft bearings, gears running on fixed shafts, and for medium and light mechanisms generally.
- (d) Precision running or location H7/g6. A very fine clearance is provided by this combination. Where motion is involved it is only suitable for conditions of low loading, such as prevails in precision slide ways and bearings. It is also used for location purposes.
- (e) Average location H7/h6. This combination is used for location purposes, also frequently used on non-running assemblies.
- (f) Push fit H7/n6. On average a very small clearance is obtained by this combination. It is a transition fit and is employed in circumstances where the amount of clearance or interference must be kept to a minimum. The designation is widely used as a push fit, especially where vibration has to be eliminated.
- (g) Press fit H7/p6. Although this fit results in only a small amount of interference, it is sufficient for a press fit, and allows such assemblies to be dismantled without overstraining. The fit may also be used as a shrink fit.
- (h) Heavy Press fit. H7/s6. Commonly used for permanent assemblies; temperature may need to be used to achieve the fit.

