LIMITS

INTRODUCTION:

In mathematics, a limit is the value that a function (or sequence) approaches as the input (or index) approaches some value. Limits are essential to calculus and mathematical analysis, and are used to define continuity, derivatives, and integrals.

Types of limits:

In this section, we discuss the types of limits. There are two type of limits given below.

1. One-sided limit (left & right-hand limit)
2. Two-sided limit

1) One-sided limit

1) One-sided limit:

This limit function is only defined at an open interval. So, we can check the limit by both ends from the left side of the interval and also from the right side of the interval. Also, it is further categorized into two types given below.

1. Left-hand limit
2. Right-hand limit

a) Left-hand limit:

In this limit, we move from the left side of the interval and the interval is defined as $a \in [a + \varepsilon, a - \varepsilon]$. g(X) is defined on the interval as given below,

$$\lim_{X \to a^-} g(X) = L$$

It is read as the left-hand limit of g(X) as "X" approaches "a" and "a" is the point where the limit is found.

"L" is the result of the limit. direction of the real line.

This limit moves from the negative

b) Right-hand limit:

In this limit, we move from the right side of the interval and the interval defined as $a \in [a + \varepsilon, a - \varepsilon]$. g(X) is defined on the interval as given below,

$\lim_{X \to a+} g(X) = L$

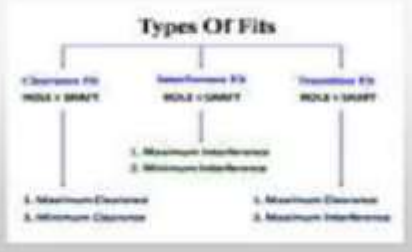
It is read as the right-hand limit of g(X) as "X" approaches "a" and "a" is the point where the limit find. "L" is the result of the limit. This limit moves from the positive direction of the real line.

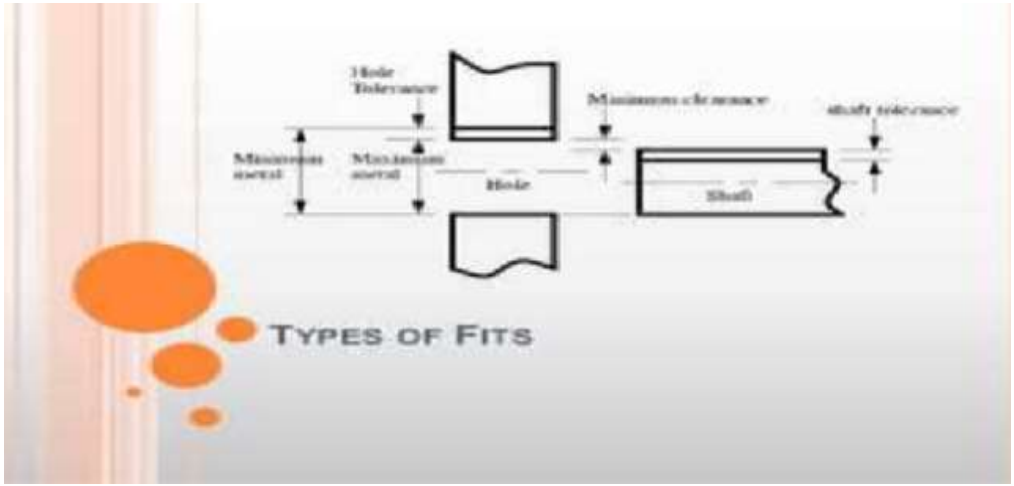
2) Two-sided limit:

If the both-sided limit exists (left & right-hand limit) and the same is called the two-sided limit exists. In this limit, we check both side limits from the left hand as well as from the right hand and compare the results must be equal.

WHAT ARE FITS?

- Fit is defined as the degree of freedom of tightness between the mating parts in an assembly. Fit obtaining parts are either movable joint or fixed joint.

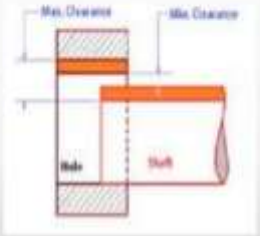



Hole
Tolerance
Maximum clearance
Shaft tolerance
Maximum
metal
Maximum
metal
Hole
Shaft
TYPES OF FITS

CLEARANCE FIT

- This means there is a gap between the two mating parts.
- Clearance fit is arises at the Diameter of the shaft is smaller then the hole.
- The minimum diameter of hole is grater then large diameter of the shaft.
- Clearance value is positive when in this type of fit

CLEARANCE FIT



CLEARANCE FIT


TRANSITION FIT
Transition fit is neither loose nor tight as like clearance fit and interference fit.
The transition fit is two types they are.
Wringing Fit
Push fit
TRANSITION F
Transition fit i
clearance fit a
The transition
Wringing Fit
Push fit

INTERFERENCE FIT