

THREAD ENGAGEMENT

Thread engagement is the amount of pipe thread necessary to make a tight connection between pipe and fitting. Refer to T on Figure 1.

For the length of thread engagement for the various nominal diameters of pipes, refer to T on Table A.

NOTE: When cutting threads on various diameters of pipe, it is usual practice to add approximately two additional threads to the length of thread shown in (T) of Table A.

Example: A 1/2-inch diameter pipe.

Engagement when tight in inches (T) equals 1/2 inch. Thread length will equal 1/2 inch plus approximately two additional imperfect threads.

THREADS PER INCH

It is possible to cut threads on pipes of different diameters with the same die chasers. The following examples show the nominal pipe diameters that have the same number of threads per inch.

EXAMPLE 1

1/4-inch and 3/8-inch nominal pipe size have 18 threads per inch.

EXAMPLE 2

1/2-inch and 3/4-inch nominal pipe size have 14 threads per inch.

EXAMPLE 3

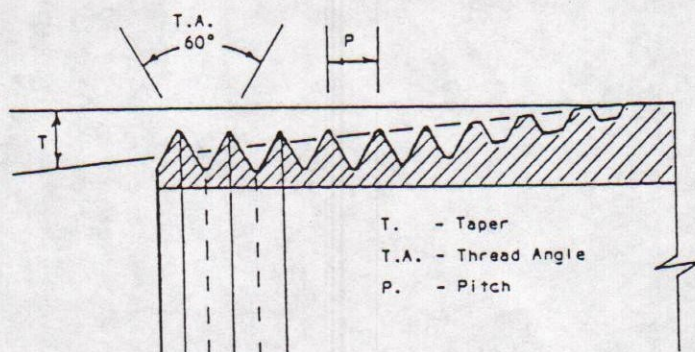
1-inch, 1 1/4-inch, 1 1/2-inch and 2-inch nominal pipe size have 11 1/2 threads per inch.

EXAMPLE 4

2 1/2-inch nominal pipe size and larger have 8 threads per inch.

NOTE: The above examples of threads per inch are shown in Table A.

Figure 2 PIPE THREAD

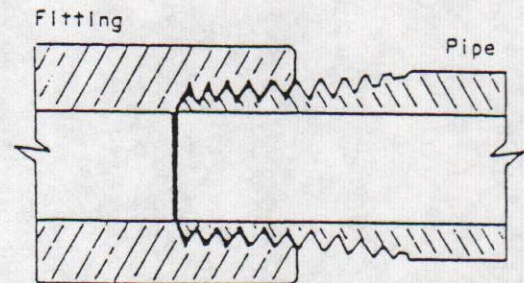


Length of Thread

It is of the utmost importance when threading pipe to cut the correct length of thread for a given pipe diameter.

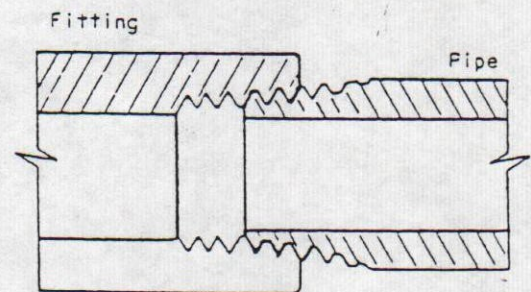
Too long a pipe thread allows the pipe to travel too far into the fitting. The pipe is prevented from turning any further when it reaches the end of the thread inside the fitting. Correct thread engagement of the taper is not made since most of the tapered threads remain outside the fitting. This can cause damage to the fitting and possible leakage.

Figure 3 Too long a pipe thread



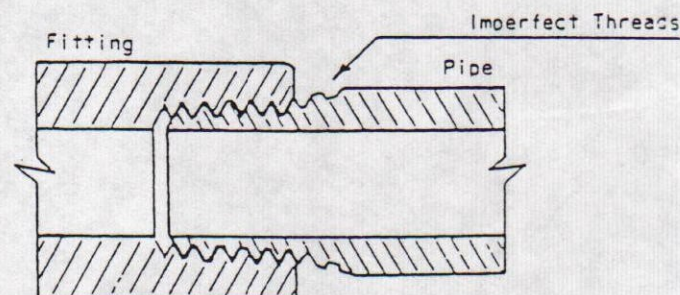
Too short a pipe thread does not allow enough thread to enter the fitting. This prevents the proper use of all the threads in the fitting and can result in a weakened connection and possible leakage.

Figure 4 Too short a pipe thread



Correct length of pipe thread allows the pipe to enter the fitting with the proper number of threads. The thread taper is able to make a tight connection.

Figure 5 Correct pipe thread



NOTE: With the *Correct* thread engagement, approximately two imperfect threads should remain outside the fitting.

PIPE FITTINGS AND THREAD ALLOWANCES

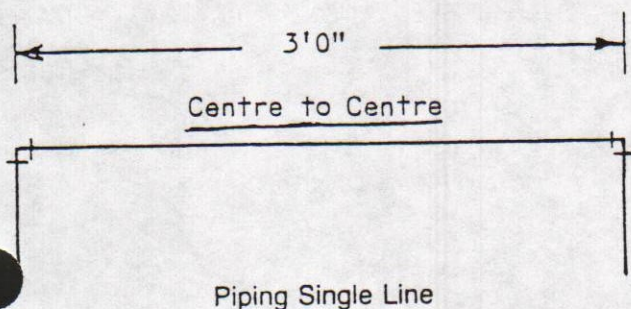
INTRODUCTION

This package has been developed to show how steel pipe and fittings are measured to a given length from diagrams for on-the-job installation. Pipes must be cut to various lengths and threaded for many different installations.

DIAGRAMS

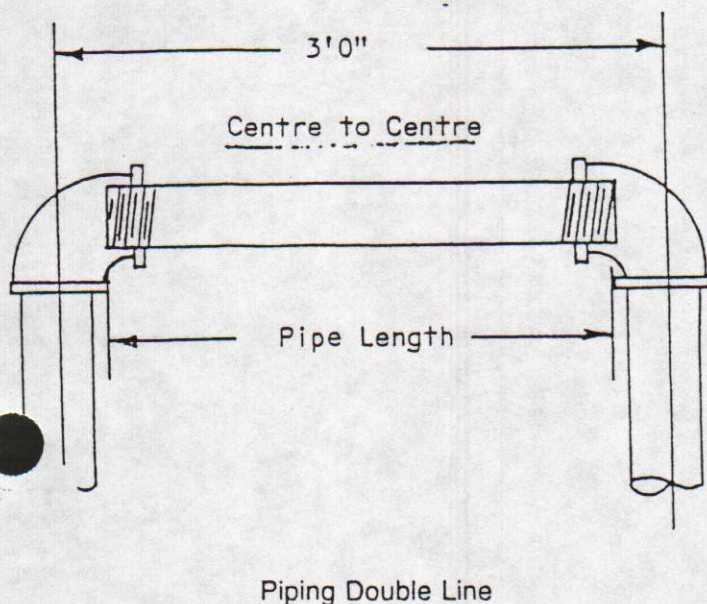
In general, piping diagrams as supplied by engineers show measurements as centre to centre. Refer to Figure 1.

Figure 1



To convert the centre to centre measurements to actual length of pipe, it is necessary to measure the fittings being used because the pipe does not travel into the centre of the fitting. Refer to Figure 2.

Figure 2



METHODS OF MEASURING

As mentioned, piping diagrams usually give measurements as centre to centre of fittings. However, all piping measurements *are not* taken from centre to centre because many have to be taken on the job site when the pipes are fitted.

It is important that the learner be familiar with the various terms used when measuring pipes and fittings. Figure 3 below shows many of these.

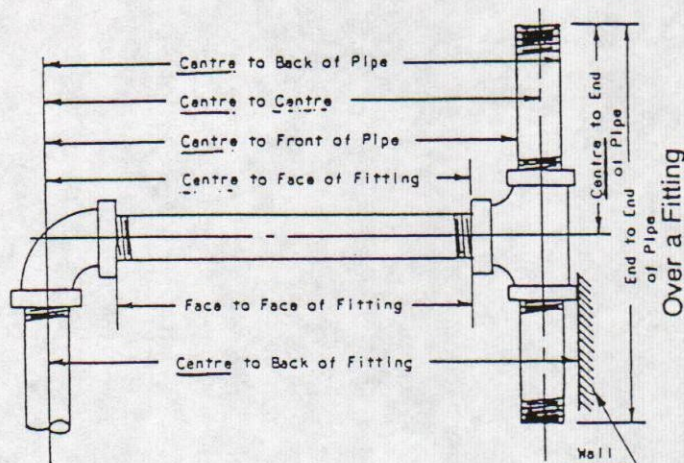


Figure 3

Abbreviations of Terms used when measuring pipes and fittings.

Centre to Back of Pipe	- C. to B. of P.
Centre to Centre	- C. to C.
Centre to Front of Pipe	- C. to F. of P.
Centre to Face of Fitting	- C. to F. of F.
Face to Face of Fitting	- F. to F. of F.
Centre to Back of Fitting	- C. to B. of F.
Centre to End of Pipe	- C. to E. of P.
End to End of Pipe	- E. to E. of P.

THREAD ENGAGEMENT AND FITTING ALLOWANCE

Before pipes can be cut and fitted to a given measurement, the "fitting allowance", "thread engagement" and "pipe diameter" must be known.

TABLES

American Standard Pipe Thread tables are available giving the fitting allowance and thread engagement for various pipe and fitting diameters.