

1953
"MAINS WITHOUT MAINTENANCE"

"Century"

ASBESTOS-CEMENT PIPE

with

"Century"

SIMPLEX COUPLINGS



**KEASBEY & MATTISON
COMPANY • AMBLER, PENNA.**

"CENTURY" ASBESTOS-CEMENT PIPE WITH "CENTURY" SIMPLEX COUPLINGS

Warranty

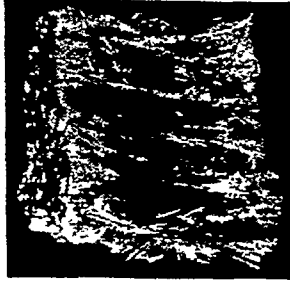
Our products are carefully inspected for manufacturing defects; however, it is not always possible to detect hidden defects. Our products are warranted only to the extent that we will replace without charge, products proved to have manufacturing defects within six months of the date of delivery thereof and provided we have been given an opportunity to inspect the product alleged to be defective and the installation or use thereof. No warranty is included against any expense for removal, re-installation or other consequential damages arising from any defect. Owing to the widely varying conditions under which our products are installed and used we cannot be and are not bound, and no person is authorized to bind us, by any further warranty whatsoever, express or implied.

Table of Contents		Page No.
Warranty	Inside Front Cover	
Introduction	2 and 3	
Advantages of "Century" Pipe	4 and 5	
Installation Recommendations	6	
Handling	6	
Alignment and Grade	7	
Trenching	7	
Installation of "Century" Pipe	8	
The "Century" Simplex Coupling	9	
The "Century" Simplex Coupling Puller	10	
Installation of the "Century" Simplex Coupling	11	
Illustrations of Coupling Installation . 12, 13, 14, 15 and 16		
Curved Lines	16	
Cutting "Century" Pipe in the Field	17	
End Caps	17	
Connections to Cast Iron Pipe and Fittings	18	
Thrust Blocking	19	
Service Connections	19	
Partial Backfilling for Test	21	
Expelling Air Before Test	21	
Hydrostatic Tests	21	
Final Backfill	22	
Storage of Gaskets	22	
Recovery	22	
Coupling Puller Policy	23	
Dimensions and Weights of "Century" Pipe	24	
Dimensions and Weights of "Century" Simplex Couplings	Inside Back Cover	

**KEASBEY & MATTISON
COMPANY AMBLER, Penna.**

ASBESTOS . . . A UNIQUE MATERIAL

Asbestos has been known for centuries. Many of its qualities are so remarkable that it is small wonder they were noticed and recorded by the ancients. Marco Polo reported seeing asbestos cloth at the court of Kublai Khan in China. Asbestos was used by the Greeks for candle wick, and by the Romans for wrapping the bodies of their honored dead before cremation.



A sample of the mineral asbestos, clearly showing its remarkable fibrous structure.

These early uses took advantage of two outstanding features of asbestos—its resistance to fire, and its durability. But only in the last century was a third unusual quality of this material discovered and put to important use. Asbestos is one of the few known minerals which can be successfully used as a reinforcing agent in Portland cement. Cement also is an ancient and durable material. Many of the viaducts which added to the fame of the Roman Empire, and which remain in good condition today, were made of cement.

Asbestos fibres are finer than silk and sufficiently flexible to be spun and woven. They have an exceptionally high tensile strength.

In Asbestos-Cement, these strong, pliable, durable fibres are mixed with Portland cement to form a homogeneous mass of uniform strength. It is of such material, scientifically processed in each manufacturing step, that "Century" Asbestos-Cement Pressure pipe is made.

Over 30 years of experience has convinced engineers the world over that *Asbestos-Cement Pipe, once laid, may be forgotten.*

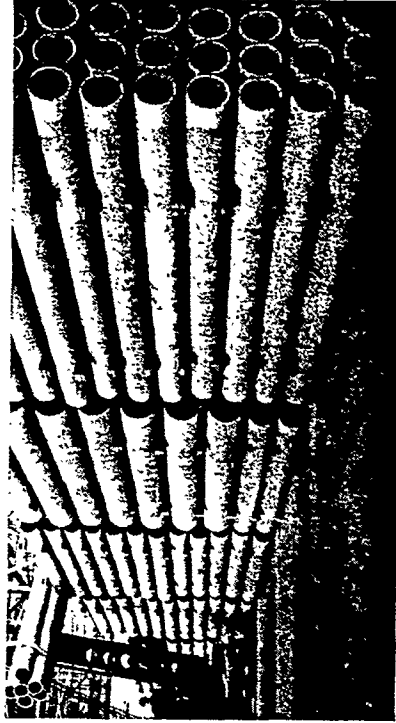
(2)

DEVELOPMENT OF ASBESTOS-CEMENT PIPE

For years, engineers in this country received reports of a revolutionary new kind of pipe that was being widely and successfully used in Europe. It was said to have great durability, and to require none of the maintenance that had long been accepted as a costly matter-of-course in the distribution of water throughout a community. It was made of asbestos and Portland cement, a combination which had already earned a high reputation in other fields for durability and low maintenance.

The experimental manufacture of Asbestos-Cement Pipe was begun in Europe in 1913, and within three years was established on a commercial basis. It was first used for the conveyance of sea water, an especially severe form of service. Progress was rapid, and by 1921 seamless Asbestos-Cement Pipe was generally accepted for many important water mains and other pressure services throughout Europe. In the same year, the manufacturing process was first patented in the principal industrial countries of the world.

In the United States very rapid progress has been made in the acceptance and use of Asbestos-Cement Pipe, and although this position has been aided materially by the experience accumulated in European countries since 1913, the extent of the progress made can be ascribed mainly to the inherent and permanently good qualities which make Asbestos-Cement Pipe so eminently suited for water conveyance.



(3)

Advantages You Obtain with "Century"® Asbestos-Cement Pipe

MEETS GOVERNMENT SPECIFICATIONS

"Century" Pipe is made in accordance with and conforms to U. S. Federal Specification SS-P-351 covering asbestos-cement pipe; which recognizes this material as suitable for purchase by all U. S. Government agencies.

DURABILITY In the type of service for which this pipe is used, long life is a primary consideration. The two ingredients of which it is made—Asbestos and Cement—have been known and used since antiquity for projects that were built to endure. Archaeological discoveries in recent years prove that these products of nature have lasted through the centuries.

STRENGTH The Special Process builds exceptional strength into "Century" Asbestos-Cement Pipe. The rigid quality-control which is a feature of K&M manufacture is your further assurance of high strength and uniformity alike.

NON-CORROSIVE Corrosion, usually an external enemy, first weakens and finally destroys ordinary pipe. This means water works, in many instances, are faced with the recurrent necessity of replacing part or all of a line. "Century" Asbestos-Cement Pipe being non-metallic cannot corrode.

NON-TUBERCULATING Tuberculation, the enemy from within, first increases friction and later reduces flow area in ferrous pipe. The flow area is fully maintained and friction is kept at a minimum in "Century" Asbestos-Cement Pipe, for, being non-metallic, it cannot tuberculate, thus insuring against increased pumping costs as the pipe ages.

(4)

TIGHT JOINTS "Century" Simplex Couplings are immediately and permanently tight, with the result that there is no problem of leakage. This means reduced pumping costs and prevents loss of water and revenue over the years.

ECONOMY In addition to reducing transportation costs because of its light weight, "Century" Asbestos-Cement Pipe is easily and economically handled and laid. Its extreme durability means extra long life with minimum replacements. Its immunity to tuberculation, corrosion and electrolysis not only goes far to insure maintenance-free service but consistently low pumping cost as well.

EASE OF LAYING The light weight of "Century" Asbestos-Cement Pipe, and the speed with which joining is accomplished both contribute to ease and low cost of laying.

SMOOTH BORE Formed on a smooth steel mandrel, the pipe has an interior surface to match. The Williams and Hazen Constant "C" is conservatively placed at 140 for "Century" Asbestos-Cement Pipe. It will remain at its initial figure.

LIGHT WEIGHT "Century" pipe is relatively light in weight. Transportation and labor costs are favorably affected, while machinery is unnecessary for handling except with the largest and heaviest pipe, or under exceptional conditions.

IMMUNE TO ELECTROLYSIS Being non-metallic, "Century" Asbestos-Cement Pipe is not affected by stray electric currents. In many localities this is an invaluable feature.

RECOVERY VALUE "Century" Asbestos-Cement Pipe has 100% recovery value. It is easily removed and may be re-installed as many times as desired and used in its original pressure class.

(5)

Installation Recommendations

The following pages are devoted to the necessary instructions for the installation of "Century" Asbestos-Cement Pipe. It is not intended to be a substitute for, nor to be superior to, competent engineering judgment based upon a complete understanding of special conditions.

Many familiar practices which apply to the installation of all pipe are included, because they apply equally well to the installation of "Century" Pipe. Since the installation of "Century" Pipe is easier, simpler and speedier than other types of pipe, there are also recommendations which apply specifically to the installation of "Century" Pipe.

HANDLING

Check the shipments against the packing tickets and report any error or damage to the transportation agent.

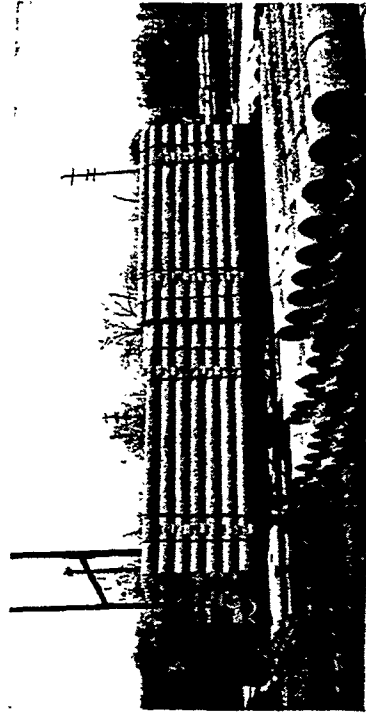
All pipe materials can be damaged by rough handling. "Century" Asbestos-Cement Pipe is no exception. However, its comparatively light weight makes handling easier and cuts down the possibility of mishap. Pipe should be rolled or lifted. It should not be thrown, slid, dropped or rolled together hard.

Pipe should be stacked on high level ground and supported on heavy planks placed about 3 feet from each end.

For pipe sizes over 6", rope or skids should be used in handling. Only in unusual cases will machinery be necessary.

Keep earth and foreign matter out of pipe interior. The coupling ends must be protected from damage and kept clean to assure quick assembly of permanently tight joints. If pipe is distributed along the trench it should, where possible, be placed on the side opposite the excavated earth.

(6)



Trailer loaded with "Century" pipe.

ALIGNMENT AND GRADE

The pipe should be laid to the line and grade established by the engineer or other authority in charge of the installation.

TRENCHING

The trench should be 18" wide for pipe sizes up to and including 6". For larger size pipe the trench should be one foot (1') wider than the diameter of the pipe. No trench should be greater than 18" more than the diameter of the pipe except when tabled 4" above the top level of the pipe.

While the recommended minimum depth of cover over pipe is three and one-half (3½) feet, due consideration must be given to frost line and surface loads. Competent engineering judgment should be considered.

Where conditions permit, the trench should be excavated to a flat bottom cut true and even at the established grade.

Where excavation is below grade, correction should be made with suitable material carefully tamped.

Stones and rock should be removed to a depth of 6" below grade and the holes filled with suitable material carefully tamped to grade.

(7)

INSTALLATION OF "CENTURY" PIPE

There are three approved methods of installing the pipe in the trench which are described below in the order of their preference.

Pipe Laid on Trench Bottom

Two wooden blocks approximately 6" wide and 2" thick and 6" longer than the diameter of the pipe should be placed on the level trench bottom with the longest dimension across the trench and so located that a block will be approximately 31" from each end of the 13 foot section. For pipe lengths under 13 feet a block should be located one-fifth of the pipe length from each end. The clearance obtained facilitates installation of the coupling.

The pipe should then be lowered into position on the blocks. Next, provide a "coupling hole" so that the barrel of the pipe, after the coupling has been assembled, will rest firmly for its entire length on the trench bottom when the blocks are removed.

After the blocks are removed, suitable materials should be carefully tamped in 4" layers around and above the pipe for a minimum depth of 12" over the pipe, leaving the couplings exposed until completion of test. See instructions for "Partial Backfilling for Tests". (Page 21)

Pipe Laid on Earth Pads

Two earth pads, approximately 12" wide and 2" high should be placed across the trench bottom and so located that a pad will be approximately 31" from each end of the 13 foot section. For pipe under 13 feet a pad should be located one-fifth of the pipe length from each end. The clearance obtained facilitates installation of the coupling.

The pipe should then be placed firmly into position on the pads. After the coupling is installed, suitable material should be carefully tamped between the pads under the barrel of the pipe and in 4" layers around and above the pipe for a minimum depth of 12" over the pipe, leaving the coupling exposed until completion of the test. See instructions for "Partial Backfilling for Test". (Page 21)

(8)

Pipe Laid on Wood Blocks

When the trench bottom is unsuitable for the two previous methods due to soft or rocky bottom, proceed as outlined for pipe laid on earth pads except that wood blocks are used. They should be placed in the same position as the earth pads in relation to the ends of the pipe. Blocks should be approximately 6" wide and 6" longer than the diameter of the pipe and of sufficient thickness to give a clearance between pipe and trench bottom of 2" at the minimum point.

After the coupling is installed, suitable material should be carefully tamped between the blocks under the barrel of the pipe and in 4" layers around and above the pipe for a minimum depth of 12" over the pipe, leaving the coupling exposed until completion of the test. Do not remove the blocks. See instructions for "Partial Backfilling for Test". (Page 21)

THE "CENTURY" SIMPLEX COUPLING

As the name implies, the "Century" Simplex Coupling is simple in design and easy to assemble. It results in a joint which is immediately and permanently tight.

It is made of an asbestos-cement sleeve, the composition of which is the same as the pipe itself. Two specially compounded rubber gaskets of round cross-section are used as a seal between the pipe and the sleeve.

Flexural strains which may be caused by earth settlement or trench loading are minimized because the joint is flexible and both ends of each pipe are cushioned in rubber.

The "Century" Simplex Coupling is not a mechanical lock-joint. While the weight of the backfill, when the pipe is laid with recommended depth of cover is sufficient to prevent longitudinal movement of the pipe, the recommendations outlined under "Thrust Blocking" (Page 19) should be followed for blocking dead ends, valves, fittings and changes in direction greater than 10 degrees.

(9)

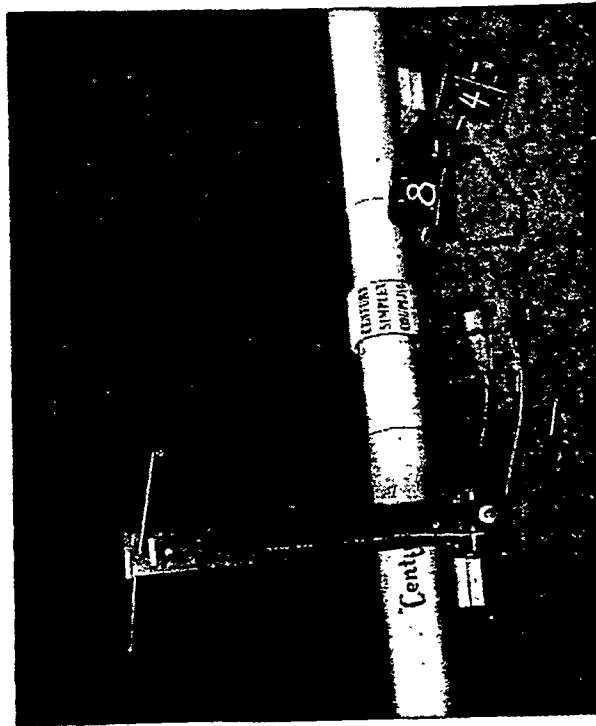
THE "CENTURY" SIMPLEX COUPLING PULLER

Manufactured by The Sullivan Mfg. Co.
Phoenix, Arizona, August Patent No. 2399312

The "Century" Simplex Coupling Puller is of simple, mechanical construction, light in weight, easy to handle and operate. Model No. 468 is for use with "Century" Simplex Couplings from 3" to 8" sizes inclusive. Model 1012 is used for 10" and 12" couplings.

The mechanism operating the puller is contained in the vertical column, from the upper portion of which the operating handles extend. Model No. 468 is supplied with three interchangeable saddles, one each for 4", 6" and 8" pipe. (Use the 4" saddle on 3" pipe by shortening the anchor chain with a bolt.) Model 1012 is supplied with one column and two interchangeable saddles for 10" and 12" pipe.

The photo below shows the component parts which consist of the 4" and 8" saddles shown separately and the 6" saddle bolted to the vertical column of the puller. The anchor bar is shown in the foreground.



(10)

INSTALLATION OF THE "CENTURY" SIMPLEX COUPLING

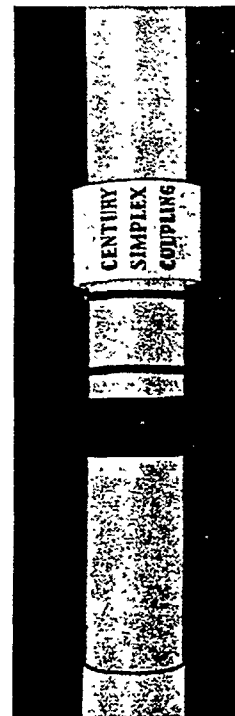
"Century" Pipe sections are readily and speedily coupled in the trench in the following manner:

- (1) Clean off thoroughly with a cloth all foreign material from the machined ends of the pipe. Thoroughly clean the interior of the couplings in the same manner. Assembly is best accomplished when pipe and coupling are dry. If damp, dust with cement.
- (2) Place the Simplex Coupling, small end first, over end of pipe, and slide back as far as possible.
- (3) Stretch one gasket over the pipe, eliminate all twist and line it up with the end of the pipe. Then roll it back four turns so that the edge facing the pipe end lines up with the second mark on the pipe. This places the gasket 7" from the end of the pipe.
- (4) Place the other gasket as close to the same pipe end as possible, eliminating all twist. Then roll it back one turn. CAUTION: Be sure that both gaskets are without twist and are parallel with the end of the pipe at all points. This is important when pulling the coupling on as "cocked" gaskets increase materially the power required to roll them into final position and if not properly positioned, leakage may develop. See photo 1 Page 12.
- (5) BUTT THE NEXT PIPE LENGTH AGAINST THE END OF THE OPPOSING PIPE SO THAT EACH PIPE IS IN THE SAME HORIZONTAL AND VERTICAL PLANE. ON LARGE PIPE THIS IS ACCOMPLISHED BY USING BLOCKS AND WEDGES.
- (6) Set "Century" Simplex Coupling Puller with proper size saddle on pipe to which coupling is to be pulled.
- (7) Turn the handles so the cables are fully extended.
- (8) Place the "Century" Simplex Coupling against the gasket and set the two Puller hooks on the rear edge of the coupling, directly opposite each other (180 degrees). The cross chain permits adjustment for various pipe sizes.
- (9) Move the Coupling Puller back until the cables are taut.
- (10) Drape the anchor chain over the pipe, with loops of equal length on each side, then place the anchor bar under the pipe and over the chain with the lugs on the

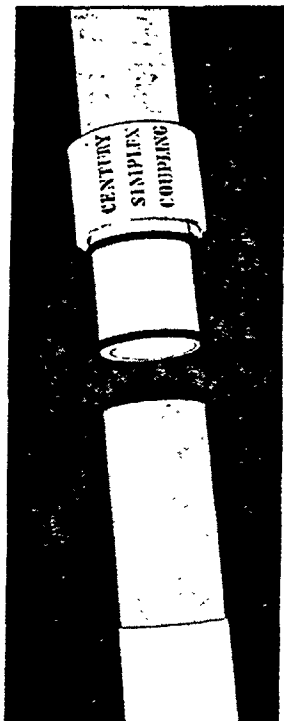
(11)

anchor bar located on the outside of the chain with the plate 'FLAT' against the pipe.

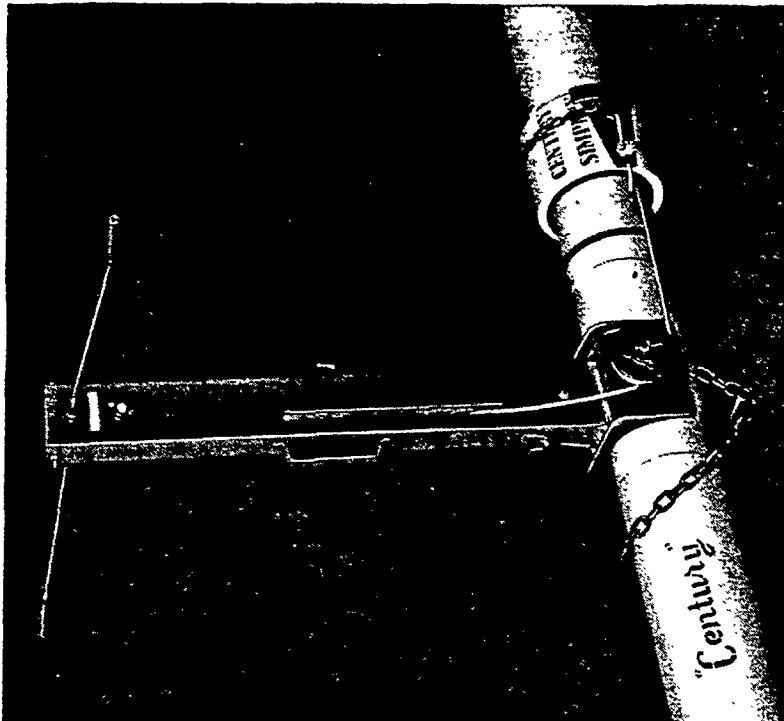
- (11) Be sure that it does not span the joint or carry over to the other pipe. See illustrations Nos. 2 and 3 on Page 13.
- (12) Turn the handles of the coupling puller until the coupling is in contact with the first ring. By keeping an even steady pressure on the handles, let the coupling glide easily over the ring. This permits the ring to flow under the lip of the coupling. Repeat the process when the second ring is in contact with the coupling. **DO NOT USE A SUDDEN JERKY MOTION ON THE HANDLES TO FORCE THE COUPLING OVER THE RINGS.** Pull steadily until the first mark on the opposite pipe is reached. This is $3\frac{1}{2}$ " from the pipe end or one-half the coupling length. The coupling is now located in its final position. The gasket nearest the joint has been carried over to the other pipe and the rear gasket has been rolled closer to the joint. See illustrations Nos. 4, 5 and 6 on Pages 14 and 15.
- (13) If the pull is excessive, it is apparent that either the coupling is cocked or that the ends of the pipe are not aligned properly. It then becomes necessary to remove the coupling and reassemble.
- (14) Check the position of the gaskets within the coupling with a rule or feeler gauge to determine that they are properly located. Each gasket must be at least $1\frac{1}{4}$ " and not more than 2" from its coupling end.
- (15) Raise the free end of the pipe approximately 15" and then lower it to the former position. This provides a clearance between pipe ends which is necessary for longitudinal expansion of the pipe and flexibility of the coupling.



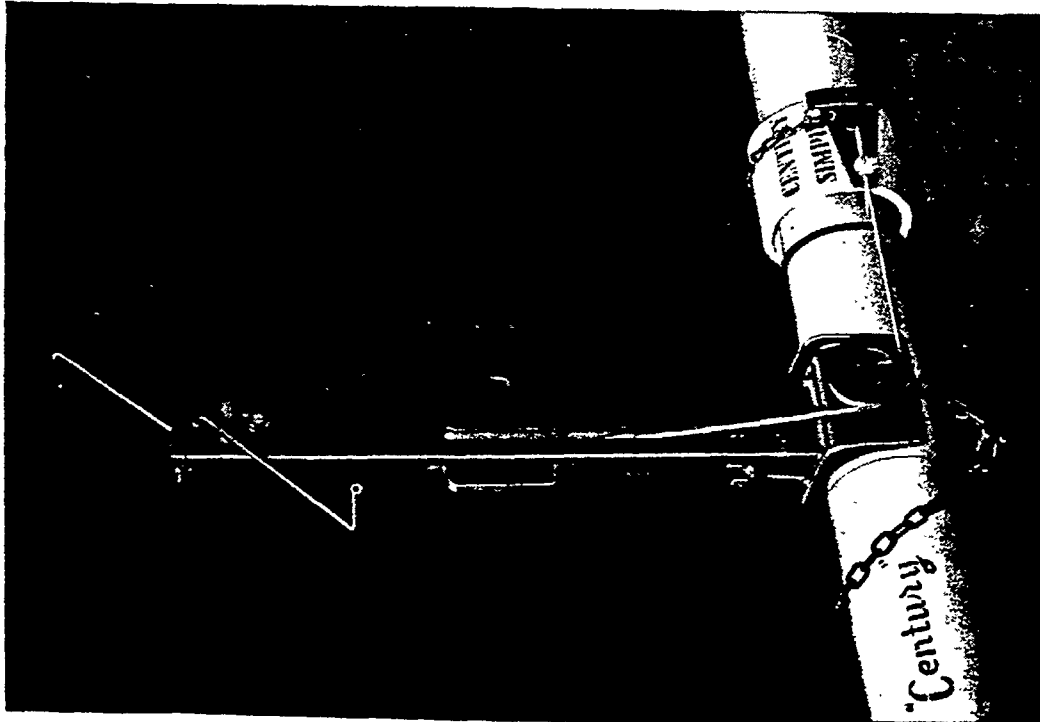
No. 1 View showing initial position of coupling and gaskets.
(12)



No. 2. Pipe separated to show location of gaskets prior to drawing Coupling into final position. Note that the second gasket has been rolled to the edge of the pipe.

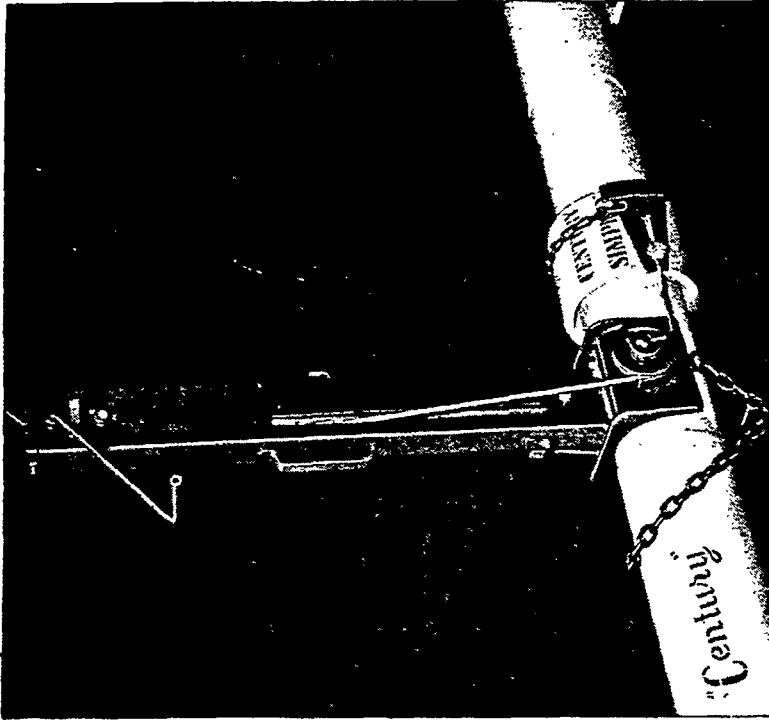


No. 3. Puller in position prior to initial pull on coupling. Caution—Roll front gasket to edge of pipe before pulling coupling.
(13)

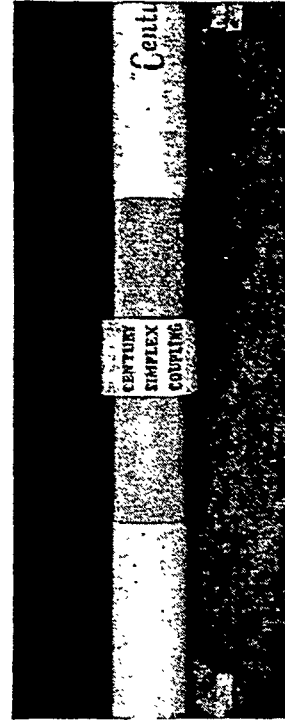


No. 4. Coupling in process of being drawn into final position.

(14)

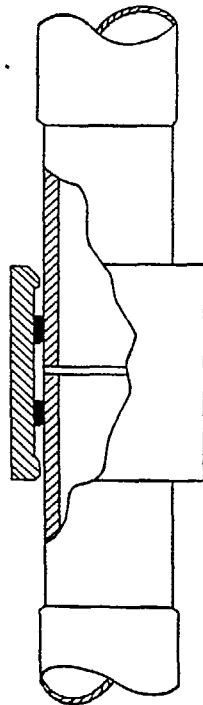


No. 5. Coupling in final position.



No. 6. The completed joint.

(15)



No. 7. Cut-away view of coupling showing location of gaskets in final position.

CURVED LINES:

The "Century" Simplex Coupling is designed to permit up to 5 degrees deflection in any direction (which means an offset of 13.6" per 13' length) and still make a perfectly safe joint. This feature permits the installation of pipe lines on large radius curves without the use of special bends. The use of pipe in lengths shorter than standard will permit curves of shorter radius.

Lay each pipe straight and deflect after the coupling has been completely assembled.

The following table shows the amount of offset and radius of subsequent pipe ends from a straight line for pipe lengths and degrees of deflection.

OFFSET OF PIPE AND RADIUS

Degree of Deflection	LENGTH OF PIPE IN FEET					
	3 1/4'		6 1/2'		13'	
	Offset Inches	Radius Feet	Offset Inches	Radius Feet	Offset Inches	Radius Feet
1	0.6	187	1.3	374	2.7	748
2	1.4	93	2.7	186	5.4	372
3	2.0	62	4.0	124	8.0	248
4	2.7	46	5.4	93	10.8	186
5	3.4	37	6.8	74	13.6	148

(16)

CUTTING "CENTURY" PIPE IN THE FIELD

"Century" Pipe, being composed of asbestos and Portland cement, is abrasive to cutting tools and frequent sharpening is necessary.

When a minimum of cutting is required it can readily be done with a buck saw or a two-man saw with "tuttle-tooth" blades. It is not advisable to cut "Century" Pipe with a cold chisel or a standard iron pipe cutter. Their use may fracture the pipe and ragged, uneven edges usually result.

When a considerable amount of cutting is involved hand operated cutters which are low in cost and perform satisfactorily are available. Included are "Spring Load" and "Pilot" cutters (prices on request). They are adjustable to accommodate various pipe sizes and are light in weight. These cutters make a clean cut and are much faster than any other hand method. They can be easily disassembled for safe storage.

A portable electric saw or similar equipment with a carbide or tungsten blade or equal may also be used to advantage.

END CAPS



"Century" Bell Type End Caps, available for 4", 6" and 8" pipe only, are made of malleable iron. They are fastened to the end of "Century" Asbestos-Cement Pipe, either the machined end or the barrel of the pipe, in the same manner as joining pipe into a cast iron bell, that is, with jute and lead or sulphur base compound.

The Bell Type End Cap fits both classes of the same size pipe.

The end cap is 3 1/2" deep and of a sufficient inside diameter to provide ample joining compound between the pipe and the end cap.

The end cap is drilled and tapped off center with standard iron pipe threads. The 4" caps are drilled and tapped 1" with all others being 2". No other tapping is available.

The end cap is placed as far on the pipe end as possible and blocked with concrete or substantial timber to resist end thrust.

(17)

CONNECTIONS TO CAST IRON PIPE AND FITTINGS

Connections to bell ends of cast iron pipe and fittings are made by yarning with dry unbraided jute or other suitable material and pouring with a self-caulking compound, the same as in joining two lengths of bell and spigot cast iron pipe. Joints may be poured with lead if properly and carefully caulked.

The machined end of the "Century" pipe in all sizes and classes can be inserted into the bell ends of Class "1" C.I. fittings, valves and hydrants with sufficient clearance for proper caulking. The barrel of the pipe in all sizes and classes may also be connected in this manner if the all-around clearance between the O.D. of the pipe and the I.D. of the bell is at least .30". In all cases a short piece of "Century" Pipe should be used at each bell of fittings, valves and hydrants to assure flexibility. The minimum length to be used is 2'2" with the maximum length, 6'6".

Fitting "Century" Pipe to Cast Iron Connections



Lower into place



All work on surface



Install couplings

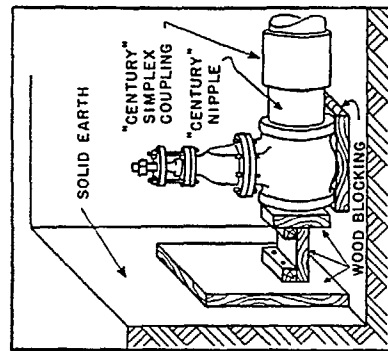
(18)

THRUST BLOCKING

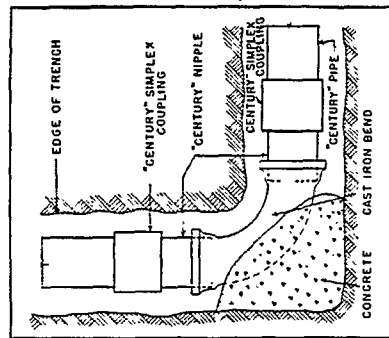
The line should be thrust blocked at all bends greater than 10 degrees, tees, caps, valves and hydrants to prevent movement of lines under pressure.

Place blocking between solid ground and fitting to be anchored, never at coupling, and in such manner that pipe and fitting joints will be accessible for repairs.

Blocking should be concrete, of a mixture calculated to have a compressive strength of not less than 2000 pounds per square inch. Other approved materials may be used.



Showing method of temporarily blocking dead end by use of timber.



Cast Iron All Bell Bend

SERVICE CONNECTIONS

"Century" Pipe should be drilled and tapped for corporation stops with a standard tapping machine, in the same manner as other kinds of pipe. Only Mueller type thread is recommended. The maximum size recommended is $\frac{3}{4}$ " for 4" and 6" pipe and 1" for 8" pipe and over. Do not tap 3" pipe directly. Saddles or sleeves must be used. "Century" Pipe may be tapped dry or under pressure.

As asbestos-cement pipe is highly abrasive, standard drill-taps will soon dull. Special drill-taps (cement-resisting) are available and give much longer life.

(19)

Use only sufficient pressure to lead the drill through the pipe wall. If forced, a punching instead of a cutting action will result and chipping may occur. A mixture of graphite and oil on the drill-tap is of value as a lubricant.

The tapping should be of the proper depth to permit a maximum of three threads of the corporation stop to be exposed. It is advisable to make a test tap to determine the depth and a new mark should then be made on the boring bar.

The corporation stop should be tightened sufficiently to prevent leakage but should not be forced.

Both the drill point and tap threads must be kept properly sharpened. Sharp taps give clean-cut threads. A dull tap produces a rounded thread which may result in a leak or blowout of the corporation stop.

Service clamps, saddles, tapping sleeves and similar accessories are available from water works supply houses for use with "Century" Pipe for outlets larger than recommended above. However, maximum opening, when using saddles or service clamps, should not exceed 1" for 4", 1½" for 6", 2" for 8", 2½" for 10" and 3" for 12" size. When ordering above accessories specify machined O.D. of pipe plus ¼".

Copper or lead goose necks are recommended between corporation stop and service line. Swing ells must not be used to connect the service line to the corporation cock when taken directly from the barrel of the "Century" Pipe. Swing ells may be used with iron service clamps or saddles.



Test tapping dry pipe for a corporation stop



Corporation stop with goose neck

(20)

PARTIAL BACKFILLING FOR TEST

Leaving the couplings exposed, the line shall be backfilled and tamped under, around and in 4" layers directly over the pipe for the full width of the trench and not less than 12" above the top of the pipe, being careful to use earth or suitable material free from stone, frozen lumps or other objectionable matter.

However, if conditions are such that the exposed coupling area will be filled with water, snow or other objectionable matter so as to cause the bed of the pipe to become unstable, the trench should be completely backfilled as outlined under FINAL BACKFILL.



Partial Backfill
Coupling Exposed

EXPELLING AIR BEFORE TEST

Before filling the line with water, tap the line, if necessary, at the points of highest elevation to expel air. After releasing the air all taps shall be tightly plugged.

HYDROSTATIC TESTS

After partial or total backfill, the line shall be slowly filled with water, taking care to expel air as mentioned before. The customary test is 50 lbs. above the static pressure.

If possible, make tests in sections not over 1000 feet in length.

Pressure shall be applied by means of a pump connected to the pipe in a satisfactory manner.

While test pressure is being maintained, thoroughly inspect all exposed pipes, fittings, valves, hydrants and joints for

(21)

leaks. If all joints are tight and pressure gauge falls off slightly this is probably due to trapped air and gauge will hold steady after approximately 48 hours.

If leakage is evident at a coupling it has been improperly installed.

Disassemble the joint, inspect thoroughly for improper assembly or foreign matter lodged under the gasket.

Poured joints of a self-caulking compound will sometimes seep in the early stages of their life, but will "take up" as they age. This may take approximately two weeks.

FINAL BACKFILL

After the test has been completed to the satisfaction of the authority in charge, the trench may then be completely backfilled, after the exposed coupling sections have been backfilled in the same manner as the barrel of the pipe (see PARTIAL BACKFILLING FOR TEST).

Balance of backfill may contain coarser materials. Flooding the trench may also be employed but caution should be exercised not to float the pipe. Debris, large stones or objectionable matter should not be thrown into the trench.

STORAGE OF GASKETS

When the gaskets are not to be used for several weeks they should be stored in a clean, dark, damp location.

RECOVERY

After a period of service "Century" Pipe can be reclaimed in entirety. It can be used again on the same pressure class installation as it was originally designed for. Its walls are not weakened by corrosion or decay.

(22)

INSTALLATION ENGINEERING

If there are special problems in your case, or other reasons for requiring information not in this booklet, write your K&M representative or the nearest District Office explaining the circumstances.

COUPLING PULLER POLICY

A "Century" Simplex Coupling Puller or equivalent device is necessary for the application of the Simplex Coupling.

It is recommended that large users of "Century" Pipe and contractors purchase one or more of these pullers as standard tools.

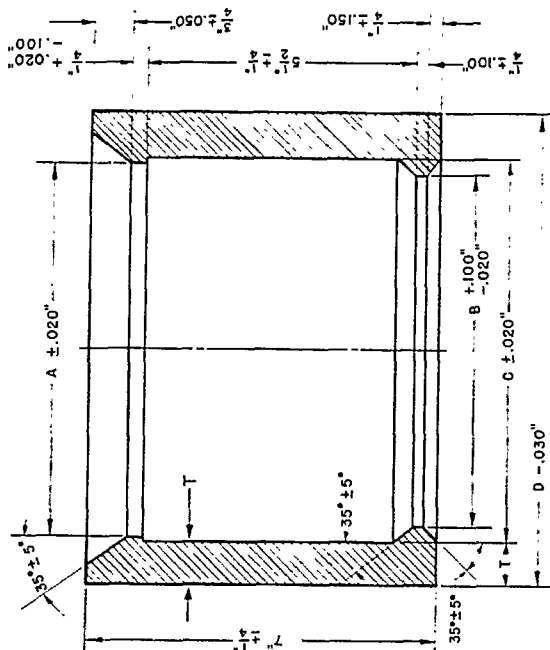
However, these pullers are available on a "loan" basis and when so ordered will be invoiced at time of shipment and credited upon prompt return after completion of the job. Return transportation charges are to be prepaid. The actual cost of any lost or broken parts will be deducted from the credit. No charge will be made for ordinary wear and tear.

IT IS IMPORTANT THAT THE PULLER BE RETURNED PROMPTLY AFTER COMPLETION OF THE JOB. OTHERWISE, A RENTAL CHARGE MAY BE MADE.

Repair parts should be ordered by their accompanying numbers on the accompanying sketch.

(23)

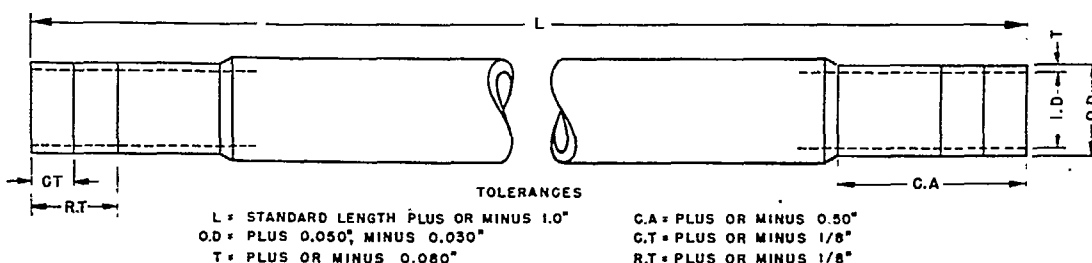
DIMENSIONS AND WEIGHTS "Century" Simplex Couplings



NOMINAL PIPE SIZE INCHES	A ±.020" INCHES	B +.100" - .020" INCHES	C ±.020" INCHES	D -.030" INCHES	T -.080" INCHES	COUPLING WEIGHT ±10% POUNDS	GROSS SECTION GASKET INCHES	GASKET WEIGHT ±10% POUNDS
CLASS 100								
3	4.11	3.82	4.17	5.21	0.52	4.4	.47	.084
4	5.19	4.82	5.25	6.45	0.60	6.2	.55	.153
6	7.25	6.88	7.31	8.51	0.60	8.4	.55	.208
8	9.37	9.00	9.43	10.63	0.60	10.6	.55	.274
10	11.21	10.84	11.27	12.95	0.84	17.4	.55	.321
12	13.28	12.91	13.34	15.04	0.85	20.6	.55	.35
CLASS 150								
3	4.25	4.00	4.35	5.63	0.64	5.6	.47	.084
4	5.30	4.97	5.40	7.00	0.80	8.9	.55	.153
6	7.40	7.07	7.50	9.10	0.80	11.9	.55	.208
8	9.60	9.27	9.70	11.30	0.80	14.5	.55	.274
10	11.71	11.38	11.81	13.87	1.03	23.0	.55	.321
12	13.90	13.57	14.00	16.36	1.18	31.0	.55	.35

DIMENSIONS AND WEIGHTS "Century" Asbestos-Cement Pipe

CLASS 100								
NOMINAL PIPE SIZE INCHES	I.D. INSIDE DIAMETER INCHES	O.D. OUTSIDE DIAMETER INCHES	T WALL THICKNESS INCHES	L STANDARD LENGTH FEET	C.T. COUPLING TOOL MARK INCHES	R.T. RING TOOL MARK INCHES	C.A. COUPLING AREA INCHES	WEIGHT LB. PER LINEAL FOOT PIPE ONLY ± 10%
3	3.00	3.70	0.35	13	3.5	7	15	4.3
4	3.95	4.70	0.375	13	3.5	7	15	5.8
6	5.85	6.76	0.455	13	3.5	7	15	9.7
8	7.85	8.88	0.515	13	3.5	7	15	14.3
10	9.68	10.72	0.52	13	3.5	7	15	17.5
12	11.57	12.79	0.61	13	3.5	7	15	23.9
CLASS 150								
3	3.00	3.88	0.44	13	3.5	7	15	5.3
4	3.95	4.85	0.45	13	3.5	7	15	7.0
6	5.85	6.95	0.55	13	3.5	7	15	11.7
8	7.85	9.15	0.65	13	3.5	7	15	17.3
10	9.68	11.26	0.79	13	3.5	7	15	25.6
12	11.57	13.45	0.94	13	3.5	7	15	35.7





DISTRICT OFFICES

**134 PEACHTREE STREET, N. W.
ATLANTA 3, GEORGIA**

**120 SOUTH LA SALLE STREET
CHICAGO 3, ILLINOIS**

**515 HANNA BUILDING
EUCLID AVENUE & E. 14th STREET
CLEVELAND 15, OHIO**

**815 WALKER AVENUE
HOUSTON 2, TEXAS**

**30 ROCKEFELLER PLAZA
NEW YORK CITY 20, N. Y.**

**1405 LOCUST STREET
PHILADELPHIA 2, PA.**

**391 SUTTER STREET
SAN FRANCISCO 8, CALIF.**

COPY FORM		INITIALS	DATE
BOX NUMBER 74-1950	SEGMENT NO.	REQUESTING PARTY	
NOTES Australian Blue 1964			