# RESTRAINED COUPLING
# KUBOLOCK-T

# RETAINER GLAND
# KUBOLOCK-K

In actual products, Wedge has the same color as body.


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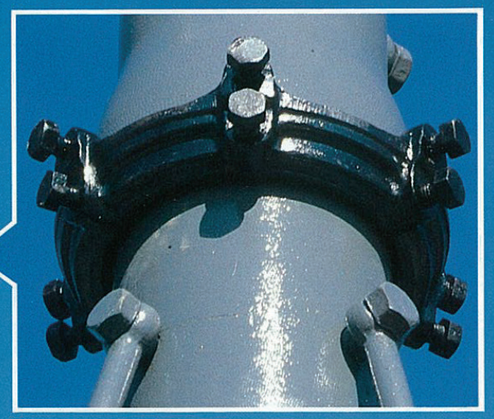
# KUBOLOCK-T: A Restrained Coupling That Converts Push-on Joints Into Restrained Joints.

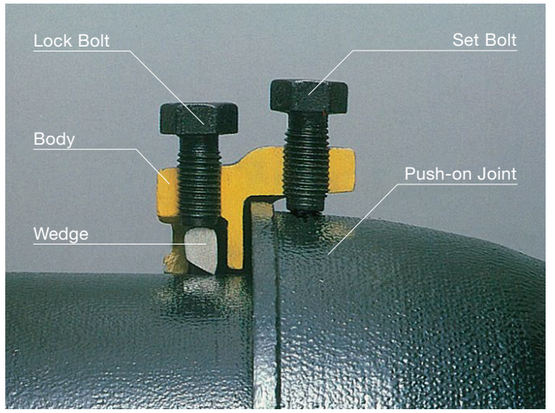
KUBOLOCK-T is designed with a unique restraining mechanism that provides push-on joints with a positive lock against high thrust forces.
KUBOLOCK-T is applicable to T-type KUBOTA Ductile Iron Pipes and Fittings ranging from DN 80mm to DN 1200mm.






## Excellent Restraining Mechanism

One side of KUBOLOCK-T is hooked onto the socket of the adjoining pipe by tightening set bolts over the lip on the exterior surface of the socket. The other side is held in place on the spigot by fastening lock bolts onto a wedge ring composed of several arched segments.




Since KUBOLOCK-T is independent of the sealing portion of the joint, the excellent water tightness of the joint is unaffected.

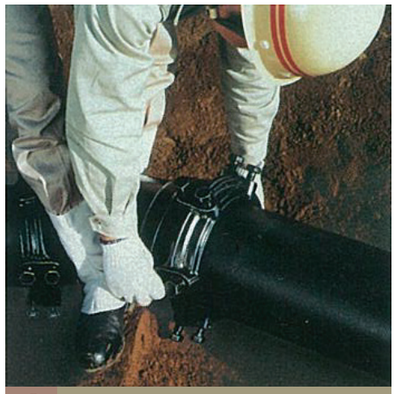
| Nominal Diameter (mm) | Allowable Operating Pressure | |
|---|---|---|
| | (bar) | (MPa) |
| 80 to 200 | 25 | 2.5 |
| 250 to 500 | 16 | 1.6 |
| 600 to 1200 | 10 | 1.0 |

## Simple Assembly

KUBOLOCK-T can be assembled simply and in a short time with ratchet wrench and torque wrench. The assembly procedure is outlined below.

1 Set KUBOLOCK-T on the spigot of the pipe.

2 Joint the pipes by pulling on the lever block.



3 Pull KUBOLOCK-T to the socket.

4 Tighten the set bolts and lock bolts.

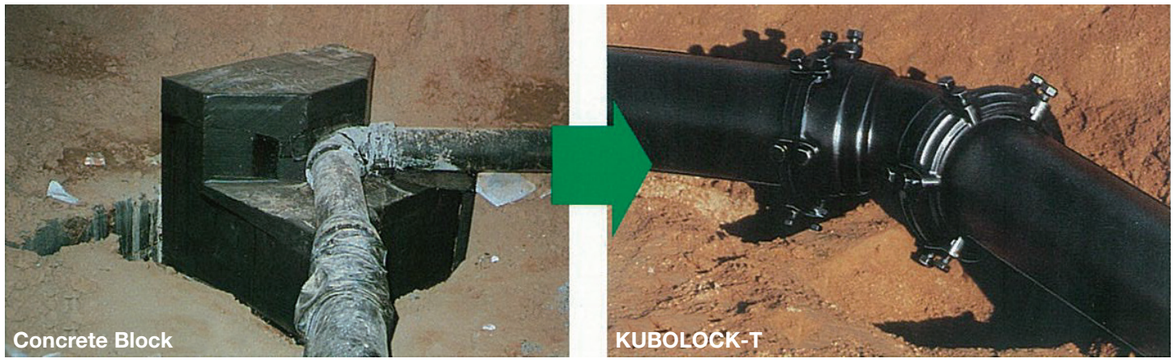
KUBOLOCK-T

# Elimination of Concrete Blocks

To resist thrust forces due to the internal pressure working on bends, tees, tapers and dead ends, concrete thrust blocks are usually employed. However, concrete blocks are not suitable in the following cases:

- When there is insufficient time to set and cure the concrete blocks
- Where space is limited

KUBOLOCK-T is applicable even in the above cases.




The required restrained lengths of the pipes at each side of the bend are shown below.

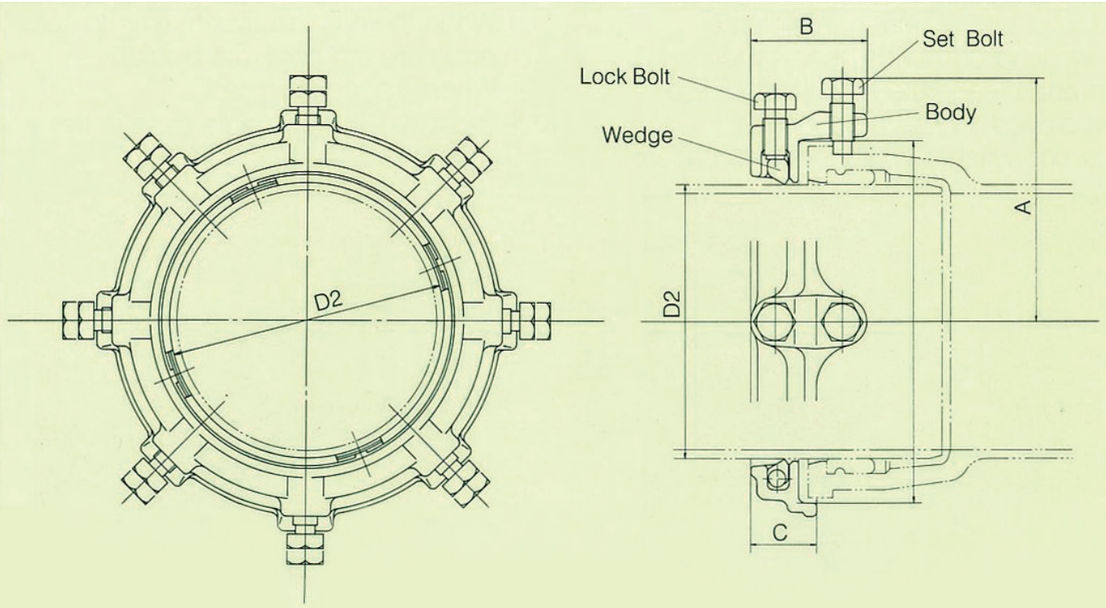
| Nominal Diameter (mm) | Hydraulic Pressure (bars) | Restrained Lentgh (m) | | | | |
|---|---|---|---|---|---|---|
| | | 90° Bend | 45° Bend | 22-1/2° Bend | 11-1/4° Bend | Dead End |
| 80 | 5 | 2 | 1 | 1 | 1 | 3 |
| | 10 | 3 | 2 | 2 | 1 | 6 |
| | 15 | 5 | 3 | 2 | 1 | 8 |
| 100 | 5 | 2 | 2 | 1 | 1 | 4 |
| | 10 | 4 | 3 | 2 | 1 | 7 |
| | 15 | 7 | 4 | 2 | 2 | 10 |
| 150 | 5 | 3 | 2 | 1 | 1 | 5 |
| | 10 | 5 | 3 | 2 | 1 | 9 |
| | 15 | 9 | 5 | 3 | 2 | 13 |
| 200 | 5 | 4 | 2 | 2 | 1 | 6 |
| | 10 | 8 | 4 | 3 | 2 | 12 |
| | 15 | 13 | 7 | 4 | 2 | 17 |
| 250 | 5 | 4 | 3 | 2 | 1 | 7 |
| | 10 | 10 | 5 | 3 | 2 | 14 |
| | 15 | 17 | 11 | 5 | 3 | 21 |
| 300 | 5 | 5 | 3 | 2 | 1 | 8 |
| | 10 | 11 | 6 | 4 | 2 | 16 |
| | 15 | 19 | 12 | 5 | 3 | 24 |
| 350 | 5 | 5 | 4 | 2 | 2 | 9 |
| | 10 | 13 | 7 | 4 | 3 | 18 |
| | 15 | 22 | 16 | 6 | 3 | 27 |
| 400 | 5 | 6 | 4 | 3 | 2 | 10 |
| | 10 | 16 | 9 | 4 | 3 | 20 |
| | 15 | 25 | 19 | 6 | 4 | 30 |
| 450 | 5 | 7 | 4 | 3 | 2 | 11 |
| | 10 | 17 | 11 | 5 | 3 | 22 |
| | 15 | 28 | 22 | 9 | 4 | 33 |
| 500 | 5 | 8 | 5 | 3 | 2 | 12 |
| | 10 | 19 | 13 | 5 | 3 | 24 |
| | 15 | 31 | 24 | 12 | 4 | 36 |
| 600 | 5 | 9 | 5 | 3 | 2 | 14 |
| | 10 | 23 | 16 | 6 | 4 | 28 |
| | 15 | 37 | 30 | 17 | 5 | 41 |

| Nominal Diameter (mm) | Hydraulic Pressure (bars) | Restrained Lentgh (m) | | | | |
|---|---|---|---|---|---|---|
| | | 90° Bend | 45° Bend | 22-1/2° Bend | 11-1/4° Bend | Dead End |
| 700 | 5 | 11 | 6 | 4 | 2 | 16 |
| | 10 | 26 | 20 | 7 | 4 | 31 |
| | 15 | 42 | 35 | 22 | 6 | 46 |
| 800 | 5 | 13 | 6 | 4 | 2 | 17 |
| | 10 | 30 | 23 | 10 | 4 | 34 |
| | 15 | 47 | 40 | 27 | 6 | 51 |
| 900 | 5 | 14 | 7 | 4 | 3 | 19 |
| | 10 | 33 | 26 | 13 | 5 | 37 |
| | 15 | 51 | 44 | 32 | 7 | 56 |
| 1000 | 5 | 16 | 9 | 5 | 3 | 20 |
| | 10 | 35 | 29 | 16 | 5 | 40 |
| | 15 | 55 | 48 | 36 | 11 | 60 |
| 1100 | 5 | 17 | 10 | 5 | 3 | 22 |
| | 10 | 38 | 31 | 19 | 5 | 43 |
| | 15 | 59 | 52 | 40 | 15 | 64 |
| 1200 | 5 | 18 | 11 | 5 | 3 | 23 |
| | 10 | 40 | 34 | 21 | 5 | 45 |
| | 15 | 63 | 56 | 44 | 19 | 68 |

Conditions:
1) Earth cover: 1.2 m
2) Density of soil: 16 kN/m$^3$
3) Internal friction angle of soil: 30 deg.
4) Frictional coefficient: 0.3
5) Nominal length of pipe : 4 m for DN80 to 100
5 m for DN150 to 250
6 m for DN300 to 1200

In case KUBOLOCK-T is used in other conditions than above, please contact us.

## Dimensions




KUBOLOCK-T

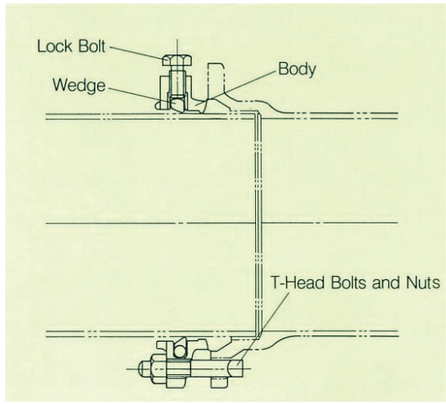
| Nominal Diamter (mm) | Dimensions (mm) | | | | Set Bolt | | Lock Bolt | | Mass (kg) |
|---|---|---|---|---|---|---|---|---|---|
| | D2 | A | B | C | Size | No. | Size | No. | |
| 80 | 98.0 | 83.0 | 47.0 | 125 | M20 | 3 | M20 | 3 | 4.26 |
| 100 | 118 | 84.0 | 48.0 | 138 | M20 | 3 | M20 | 3 | 5.29 |
| 150 | 170 | 85.0 | 49.0 | 166 | M20 | 4 | M20 | 4 | 7.40 |
| 200 | 222 | 86.5 | 50.5 | 193 | M20 | 6 | M20 | 6 | 9.94 |
| 250 | 274 | 86.5 | 51.5 | 220 | M20 | 8 | M20 | 8 | 12.5 |
| 300 | 326 | 95.5 | 54.5 | 249 | M20 | 8 | M20 | 8 | 14.2 |
| 350 | 378 | 102 | 56.0 | 282 | M20 | 10 | M20 | 10 | 20.6 |
| 400 | 429 | 109 | 63.0 | 307 | M20 | 12 | M20 | 12 | 26.0 |
| 450 | 480 | 119 | 69.0 | 342 | M24 | 12 | M20 | 12 | 28.7 |
| 500 | 532 | 122 | 73.0 | 368 | M24 | 14 | M20 | 14 | 34.6 |
| 600 | 635 | 126 | 76.0 | 420 | M24 | 14 | M20 | 14 | 42.8 |
| 700 | 738 | 163 | 123 | — | M24 | 16 | M22 | 16 | 102 |
| 800 | 842 | 164 | 124 | — | M24 | 20 | M22 | 20 | 121 |
| 900 | 945 | 189 | 136 | — | M30 | 20 | M24 | 20 | 184 |
| 1000 | 1048 | 194 | 142 | — | M30 | 20 | M24 | 20 | 207 |
| 1100 | 1152 | 196 | 145 | — | M30 | 24 | M24 | 24 | 239 |
| 1200 | 1255 | 196 | 144 | — | M30 | 28 | M24 | 28 | 271 |

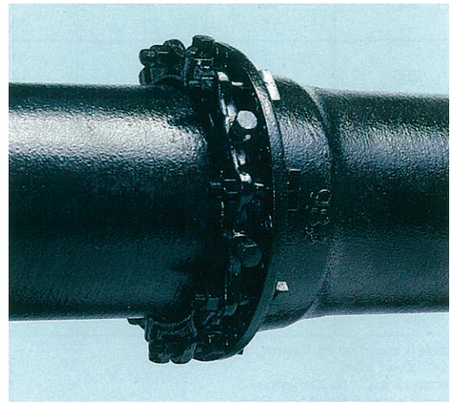
Note: KUBOLOCK-T Body, Set Bolt, Lock Bolt and Wedge are mede of ductile iron.



# KUBOLOCK-K

A retainer gland KUBOLOCK-K for mechanical joint K-type is also available.



KUBOLOCK-K

| Nominal Diamter (mm) | Dimensions (mm) | | | | Lock Bolt | | T-Head Bolt | | Mass (kg) |
|---|---|---|---|---|---|---|---|---|---|
| | D2 | A | B | B1 | Size | No. | Size | No. | |
| 80 | 98 | — | 55.0 | 48.0 | M20 | 2 | M16 | 4 | 2.81 |
| 100 | 118 | — | 55.0 | 48.0 | M20 | 2 | M20 | 4 | 3.23 |
| 150 | 170 | — | 55.0 | 49.0 | M20 | 3 | M20 | 6 | 5.14 |
| 200 | 222 | — | 56.0 | 51.0 | M20 | 6 | M20 | 6 | 7.60 |
| 250 | 274 | — | 56.0 | 51.0 | M20 | 8 | M20 | 8 | 9.51 |
| 300 | 326 | — | 57.0 | 52.0 | M20 | 8 | M20 | 8 | 11.2 |
| 350 | 378 | — | 63.5 | 53.5 | M20 | 10 | M20 | 10 | 14.6 |
| 400 | 429 | — | 70.0 | 54.0 | M20 | 12 | M20 | 12 | 17.4 |
| 450 | 480 | — | 73.0 | 55.0 | M20 | 12 | M20 | 12 | 21.2 |
| 500 | 532 | — | 78.5 | 55.5 | M20 | 14 | M20 | 14 | 24.7 |
| 600 | 635 | — | 83.0 | 58.0 | M20 | 14 | M20 | 14 | 33.4 |
| 700 | 738 | 110 | 55.0 | — | M22 | 16 | M24 | 16 | 69.4 |
| 800 | 842 | 115 | 55.0 | — | M22 | 20 | M24 | 20 | 79.5 |
| 900 | 945 | 125 | 62.0 | — | M24 | 20 | M30 | 20 | 111 |
| 1000 | 1048 | 125 | 64.0 | — | M24 | 20 | M30 | 20 | 131 |
| 1100 | 1152 | 128 | 64.0 | — | M24 | 24 | M30 | 24 | 153 |
| 1200 | 1255 | 130 | 64.0 | — | M24 | 28 | M30 | 28 | 180 |

Note: KUBOLOCK-K Body, Lock Bolt, T-Head Bolt and Wedge are mede of ductile iron.

| Nominal Diameter (mm) | Allowable Operating Pressure | |
|---|---|---|
| | (bar) | (MPa) |
| 80 to 200 | 25 | 2.5 |
| 250 to 500 | 16 | 1.6 |
| 600 to 1200 | 10 | 1.0 |