



# Heavy Duty Retainer Gland series 600

For Mechanical Joints



Heavy Duty Retainer Gland - Series 600

## INFORMATION

Heavy Duty Retainer Glands provide reliable restraint for ductile iron and steel pipe, valves and fittings. This simple design has been in service for over 30 years. Retainer glands install in minutes, in any type of soil condition and offer guaranteed restraint. Eliminating expensive time-consuming concrete thrust blocks.

## Proven Success for Over 30 Years

## FEATURES & ADVANTAGES

- Gland is made of Ductile Iron, ASTM A536 Grade 65-45-12
- Offers a full 5° deflection through 12" size, 3° on 14"-20" & 2° on 24"-36"
- Sizes 3" through 12" are Underwriters Laboratories Listed for use on Ductile Iron, Thickness Class 51 and Pressure Class 350 at 350 psi and on Steel Pipe, Schedule 40, 3" to 10" is rated at 350 psi & 12" at 250 psi.
- Safety factor is twice (2:1) the standardized pressure rating listed in **Table A**.
- Intended for use on Ductile Iron or Steel Pipe as listed in **Table A**.
- Use on Steel Pipe, sizes 3"-12" requires a transition gasket.
- Retainer Glands eliminate tie rods and thrust blocks.
- Standard gland color is Graphite Black (RAL 9011).

Table A

Nominal Size	Maximum Working Pressure Rating					
	TC Ductile Iron Pipe		PC Ductile Iron Pipe			Steel Pipe SCH40+
	50	51+	PC250	PC300	PC350	
3	N/A	350	N/A	N/A	350	350
4	N/A	350	N/A	N/A	350	350
6	350	350	N/A	N/A	350	350
8	350	350	N/A	N/A	350	350
10	350	350	N/A	N/A	350	350
12	350	350	N/A	N/A	350	250
14	250	250	250	250	250	N/A
16	250	250	250	250	250	N/A
18	150	150	150	150	150	N/A
20	150	150	150	150	150	N/A
24	150	150	150	150	150	N/A
30	N/A	100	100	100	100	N/A
36	N/A	100	100	100	100	N/A

## SAMPLE SPECIFICATIONS

Restrainer mechanism dimensions shall be in accordance with ANSI/AWWA C111/A21.11. This mechanism shall be designed to fit standard mechanical joint bells with standard T-Bolts.

The mechanical joint restrainer glands shall be manufactured of ductile iron Grade 65-45-12 Conforming to ASTM A536. Set screws are to be of high strength low alloy steel in accordance with ANSI 4140 and heat-treated to Rockwell C45-53 with cup points. Restrainer mechanism sizes 3"-12" shall be Underwriters Laboratories Listed.

Restrainer mechanism shall possess specified pressure rating and carry a minimum safety factor of 2:1. Restrainer mechanism shall be Star® Pipe Products, Series 600 or an approved equal.

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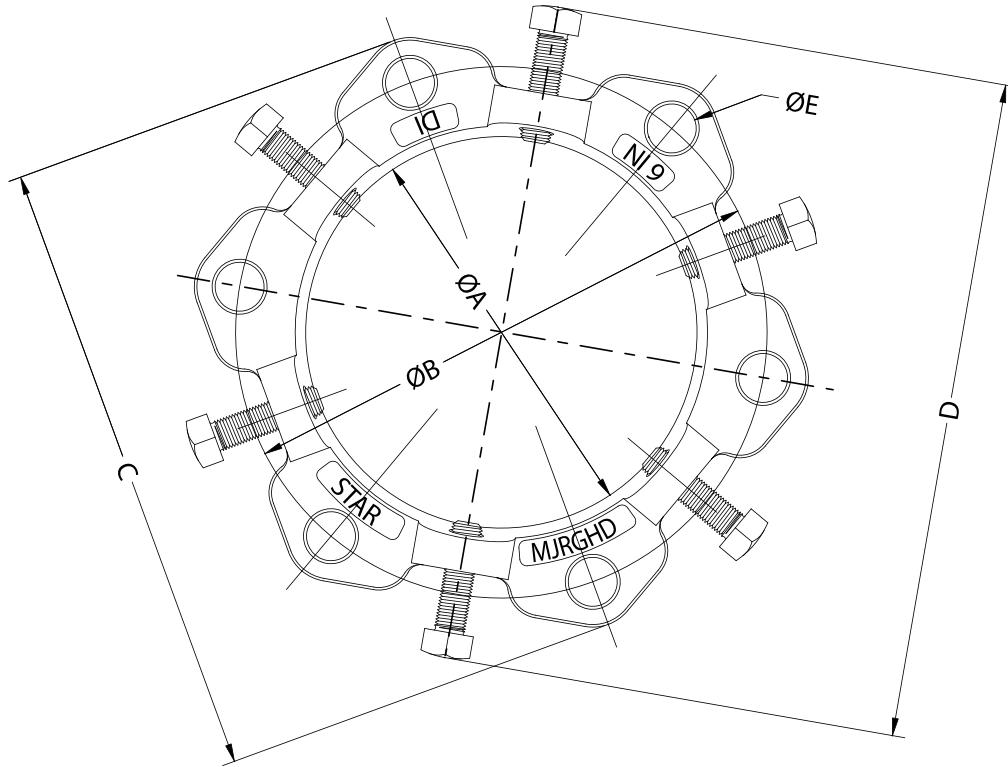
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For Ductile Iron Mechanical Joints

TECHNICAL INFORMATION



HEAVY DUTY RETAINER GLAND 600 SPECIFICATIONS\*

NOM. SIZE	DI PIPE OD	STEEL PIPE* OD	øA	øB	C	D	øE	SET SCREWS SIZE (QTY)	SET SCREW TORQUE (FT-LBS)	APPROX WT. (LBS)
3	3.96	3.50	4.06	6.19	7.69	8.87	3/4	5/8x2 (4)	85	5
4	4.80	4.50	4.90	7.50	9.12	9.72	7/8	5/8x2 (4)	85	7
6	6.90	6.63	7.00	9.50	11.12	11.82	7/8	5/8x2 (6)	85	11
8	9.05	8.63	9.15	11.75	13.37	13.95	7/8	5/8x2 (9)	85	15
10	11.10	10.75	11.20	14.00	15.62	16.00	7/8	5/8x2 (16)	85	22
12	13.20	12.75	13.30	16.25	17.88	18.12	7/8	5/8x2 (16)	85	27
14	15.30	N/A	15.44	18.75	20.25	20.20	7/8	5/8x2 (20)	90	44
16	17.40	N/A	17.54	21.00	22.50	22.30	7/8	5/8x2 (24)	90	55
18	19.50	N/A	19.64	23.25	24.75	24.40	7/8	5/8x2 (24)	90	60
20	21.60	N/A	21.74	25.50	27.00	26.50	7/8	5/8x2 (28)	90	73
24	25.80	N/A	25.94	30.00	31.50	30.70	7/8	5/8x2 (32)	90	92
30	32.00	N/A	32.17	36.88	39.12	39.13	1-1/8	3/4x3 (40)	90	169
36	38.30	N/A	38.47	43.75	46.00	45.43	1-1/8	3/4x3 (48)	90	213

\*All dimensions in inches except where indicated.

Notes:

\* Transition gasket required on steel pipe.

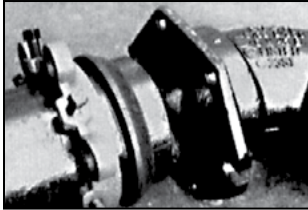
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## INSTALLATION INSTRUCTIONS - SIZES 3" - 36"



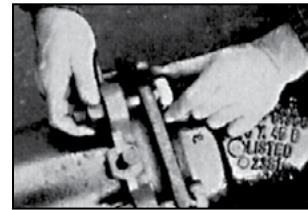
STEP 1

Wash socket and plain end pipe with soapy water. Ensure that the set screws are retracted to clear the pipe OD. Slip gland and gasket over plain end pipe with small side of gasket and lip side of gland facing socket.



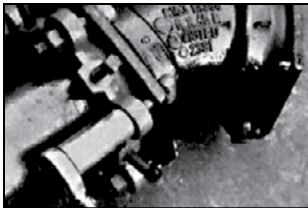
STEP 2

Slip plain end pipe into socket. Lubricate gasket with soapy water to allow it to slip easily into place. Push gasket into socket making sure it is evenly seated.



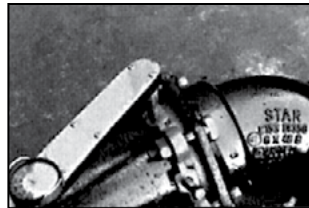
STEP 3

Slide gland into position against gasket. Align bolt holes and insert T-bolts. Tighten nuts by hand. Note: deflection of joint must be made prior to tightening of T-bolts and set screws. The max deflection is 5° for 3"-12", 3° for 14"-20" and 2° for 24"-36".



STEP 4

T-bolts should be tightened alternately on opposite sides (Star Pattern), to the torque recommended by AWWA (see table A), and hand tighten set screws until tips evenly touch pipe, assuring concentricity.



STEP 5

Then tighten set screws alternately on opposite sides to approximate 50 ft-lbs of torque. Finally, in the same sequence, tighten set screws to recommended torque DO NOT RE-TORQUE. (see table B)

**Note:** Not to be used on plain end fittings, PVC or HDPE pipe.

(TABLE A) T-HEAD BOLT & NUT DETAILS		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE <sup>1</sup> OF TORQUE (FT-LBS)
3	5/8	45-60
4-24	3/4	75-90
30-36	1	100-120

<sup>1</sup>These torque ranges are requirements of AWWA C600

(TABLE B) SET SCREW TORQUE		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE OF TORQUE (FT-LBS)
3-12	5/8 x 2	85
14-24	5/8 x 2	90
30-36	3/4 x 3	90

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