

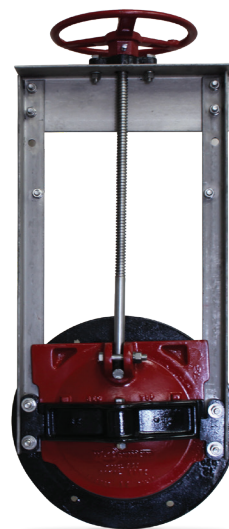
C-20 CAST IRON ROUND GATES

FOR HEADWALL, PIPE OR FLANGE MOUNTING. SUITABLE FOR BOTH SEATING AND UN-SEATING HEAD APPLICATIONS.

C-20 gates offer reliable water control on canal, drainage control and pipeline systems which operate at low and medium heads. They may be used on applications where the gate sees head pressure on both the front (seating) and back (unseating) surfaces, if sized based on the table provided. They are designed for years of reliable service, offering a typical life exceeding 40 years. These gates offer superior performance to “look alike” products and best-in-class construction available only from Waterman. Typical installations include: water delivery canals and channels, farm turnouts, control of industrial wastes, drainage and tide control.

STANDARD FEATURES

- The cover, frame ring, adjustable wedges, arch, and handwheel are made of cast iron.
- The lift nut is cast bronze and utilizes rugged acme type threads.
- A solid rim “easy-grip” cast iron handwheel is standard.
- Adjustable cast iron wedge blocks feature two machine bolts for dependable seating and water tightness
- Machine-threaded stem provides ease of operation and extended life, choice of stem thread patterns for clockwise or counter-clockwise operation.
- Precision-machined iron-to-iron seating for long life and debris tolerance.
- Painted metal rails.
- Choice of mounting options accommodate different installation requirements:
 - F = Flatback: for mounting to concrete headwall / structure with anchors
 - S = Spigot-back: for mounting to corrugated steel pipe



- FLG = Flanged: for mounting to standard ANSI pipe flanges, 25# or 125# drilling available
- C = Mounting to concrete pipe (gate will be shipped with galvanized steel tapered setting collar)
- Pipe adapters for corrugated HDPE or PVC pipe

OPTIONAL FEATURES

- Bronze seats.
- Upgrade rails to galvanized steel.
- Upgrade rails to stainless steel, plus all stainless hardware.
- Upgrade cast-iron finish to special epoxy, coal tar or total galvanized.
- Non-Rising Stem Extensions position the gate handwheel at convenient static operating elevations, eliminating hardware which might otherwise rise into traffic areas.

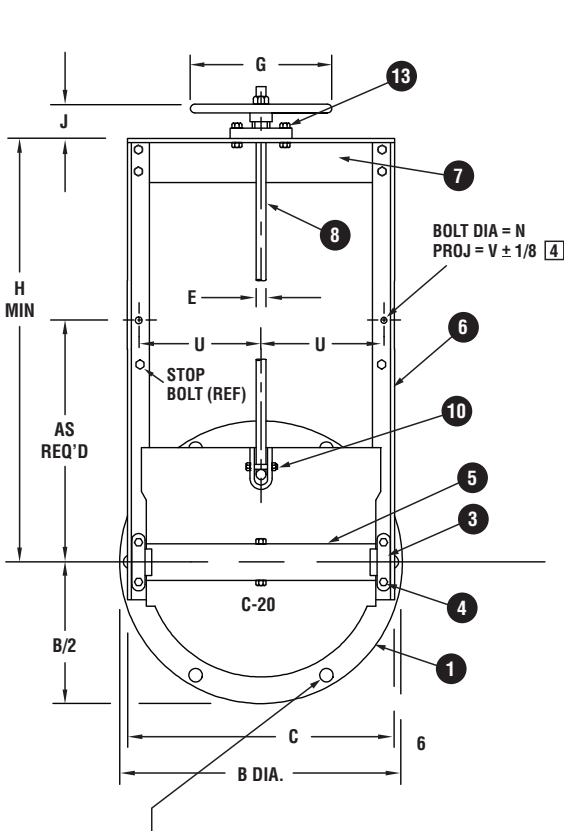
Recommended Maximum Seating & Unseating Heads

| Gate Size | Maximum Seating Head (face of gate) | Recommended Maximum Unseating Head |
|------------|--|---------------------------------------|
| 8" to 12" | 35 feet | 10 feet |
| 14" to 18" | 32 feet | 10 feet |
| 20" to 24" | 26 feet | 10 feet |
| 30" to 42" | 20 feet | 10 feet |

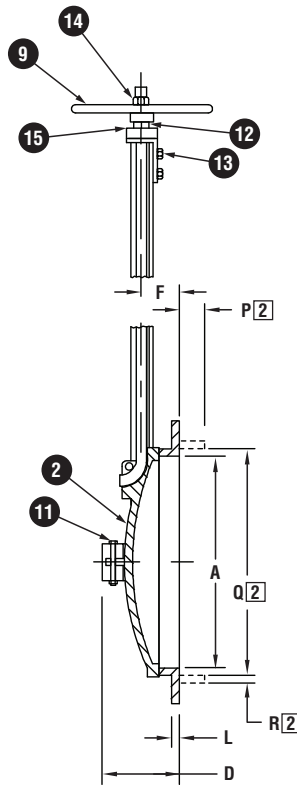


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Waterman standard drill pattern:
 Bolt Dia = N
 Proj = T + 1/8 [4]
 6 Pics Eq. Spaced on an "M" Dia bolt circle
 on the horizontal center line
 (25# or 125# patterns also available)



NOTES

- [1] TYPE 2 lubricated ball bearing lift used on 42" gate.
- [2] Applies to spigotback gate only. Optional spigot, shown in phantom.
- 3 Drilling for mounting to 25 or 125 lb. pipe flange available for all gates. Due to gate design, bolt, bolt hole location (orientation) is straddle center drilling.
- [4] Add grout pad thickness to anchor bolt projection

PARTS LIST

| No. | Name |
|-----|----------------------|
| 1 | Frame |
| 2 | Cover |
| 3 | Wedge (R&L) |
| 4 | Wedge Bolts |
| 5 | Arch |
| 6 | Guide Rail |
| 7 | Head Rail |
| 8 | Stem |
| 9 | Handwheel |
| 10 | Stem Bolt |
| 11 | Arch Bolt & Nut |
| 12 | Lift Nut |
| 13 | Atch. HDW. |
| 14 | Limit Nut (optional) |
| 15 | Lift Collar |

GATE DIMENSIONS IN INCHES

| SIZE | B | C | D | E | F | G | H | J | L | M | N | P | Q | R | T | U | V |
|------|--------|--------|--------|-------|-------|----|----|-------|-------|---------|-----|-------|----|------|-------|--------|-------|
| 8 | 13 1/2 | 13 1/4 | 5 7/8 | 7/8 | 3 1/2 | 12 | 24 | 2 7/8 | 5/8 | 11 9/16 | 1/2 | 2 1/4 | 9 | 5/16 | 1 1/2 | 5 9/16 | 3 3/4 |
| 10 | 16 | 14 1/2 | 6 | 7/8 | 3 1/2 | 12 | 24 | 2 7/8 | 5/8 | 14 | 1/2 | 2 1/4 | 11 | 3/8 | 1 1/2 | 6 5/16 | 3 3/4 |
| 12 | 19 | 17 1/2 | 6 7/16 | 7/8 | 3 1/2 | 12 | 30 | 2 7/8 | 5/8 | 16 1/4 | 1/2 | 2 1/4 | 13 | 3/8 | 1 1/2 | 7 1/2 | 3 3/4 |
| 14 | 21 | 19 1/4 | 6 3/8 | 7/8 | 3 3/4 | 12 | 32 | 2 7/8 | 5/8 | 18 7/8 | 1/2 | 2 1/4 | 15 | 3/8 | 1 1/2 | 8 1/2 | 3 1/2 |
| 15 | 22 1/2 | 20 3/4 | 6 3/4 | 7/8 | 3 3/4 | 12 | 32 | 2 7/8 | 5/8 | 20 | 1/2 | 2 1/4 | 16 | 7/16 | 1 1/2 | 9 | 3 1/2 |
| 16 | 23 1/2 | 21 1/8 | 7 1/8 | 7/8 | 3 3/4 | 12 | 32 | 2 7/8 | 5/8 | 21 | 1/2 | 2 1/4 | 17 | 3/8 | 1 1/2 | 9 5/16 | 3 3/4 |
| 18 | 25 | 24 | 8 1/8 | 1 1/8 | 4 3/8 | 15 | 36 | 4 | 7/8 | 23 | 5/8 | 2 1/4 | 19 | 3/8 | 2 | 10 7/8 | 3 3/4 |
| 20 | 27 1/2 | 26 | 8 3/4 | 1 1/8 | 4 3/8 | 15 | 42 | 4 | 7/8 | 25 1/8 | 5/8 | 2 1/4 | 21 | 3/8 | 2 | 11 3/4 | 4 1/2 |
| 21 | 28 1/4 | 26 3/4 | 9 | 1 1/8 | 4 1/2 | 15 | 42 | 4 | 7/8 | 26 3/4 | 5/8 | 2 1/4 | 22 | 3/8 | 2 | 12 1/8 | 4 3/4 |
| 24 | 32 | 30 1/4 | 9 7/8 | 1 1/8 | 4 1/4 | 15 | 48 | 4 | 7/8 | 30 | 5/8 | 2 1/4 | 25 | 3/8 | 2 | 13 7/8 | 4 1/2 |
| 30 | 39 1/4 | 36 1/2 | 10 | 1 1/2 | 5 3/8 | 18 | 60 | 4 1/2 | 1 | 37 1/2 | 3/4 | 2 1/4 | 31 | 1/2 | 1 3/4 | 17 | 4 3/4 |
| 36 | 46 | 42 1/2 | 12 | 1 1/2 | 4 1/2 | 18 | 70 | 4 1/2 | 1 | 43 1/2 | 3/4 | 2 1/4 | 37 | 1/2 | 2 | 20 | 4 1/2 |
| 42 | 53 | 49 3/4 | | 1 1/2 | 5 5/8 | 24 | 84 | 6 | 1 1/8 | 49 1/2 | | 2 1/2 | 43 | 5/8 | | 23 1/8 | |

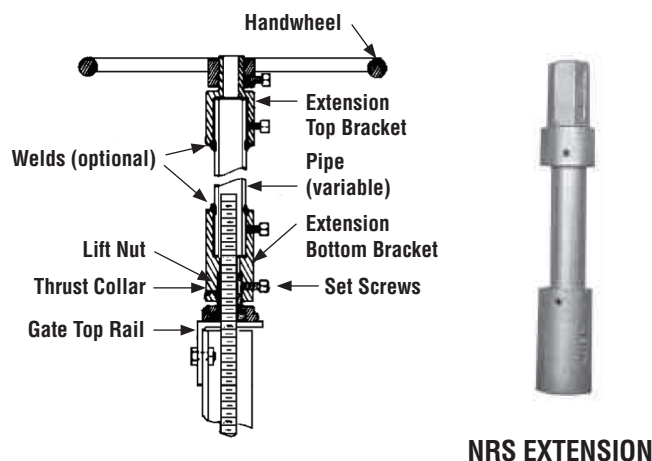
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SPECIAL OPTIONS – STEM EXTENSIONS

Waterman Rising-Stem Extensions (RSE) are factory installed to the height required, providing a rising stem and handwheel, keeping threads and lifts above the water level and allowing the amount of gate opening to be readily determined. Cast iron brackets, fastened to the top and bottom of standard galvanized steel pipe, are secured to the frame headrail and mount to the standard handwheel and stem hardware. The stem extends through the entire length of pipe. With the addition of oil seals, these rising stem extensions can be used where weather conditions require that the stem operate in oil to prevent freezing.

Non-Rising Stem Extensions position the gate handwheel at convenient static operating elevations, eliminating hardware which might otherwise rise into traffic areas. The extensions are readily installed in the field. The upper and lower brackets are joined by a section of standard galvanized steel pipe (normally customer furnished) by means of threads, set screws, pins or welds. The length of pipe inserted determines the elevation of the hand-wheel.



Normally field installed NON-RISING STEM EXTENSION Extends handwheel height without disturbing frame or stem

NRS EXTENSION



RSE EXTENSION

Complete units are available from the factory when desired.

6"-24" gates required 1 1/4" pipe

30"-36" gates require 1 1/2" pipe

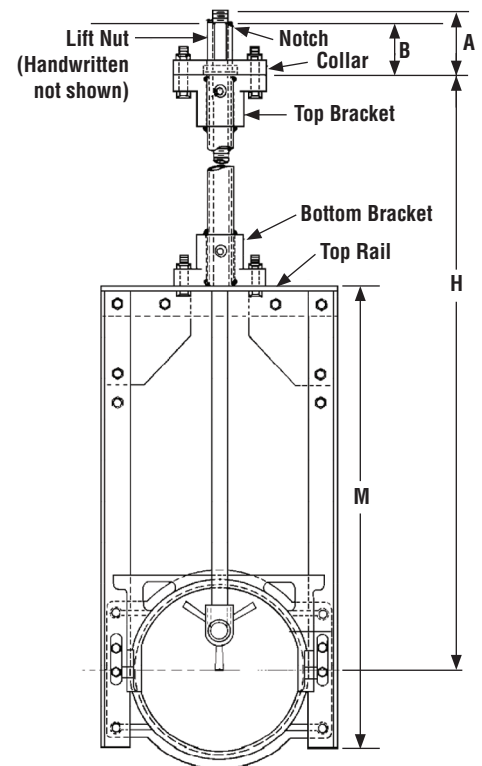
42"-48" gates require 2" pipe

These extensions may also be adapted to C-20 gates

RISING STEM EXTENSIONS DIMENSIONS

| GATE SIZE | A | B | M |
|-----------|-------|-------|--------|
| 8 | 3 7/8 | 2 7/8 | 24 |
| 10 | 3 7/8 | 2 7/8 | 24 |
| 12 | 3 7/8 | 2 7/8 | 24 |
| 14 | 3 7/8 | 2 7/8 | 24 |
| 15 | 3 7/8 | 2 7/8 | 27 1/2 |
| 16 | 3 7/8 | 2 7/8 | 30 |
| 18 | 4 1/8 | 3 1/8 | 32 |
| 20 | 4 1/8 | 3 1/8 | 34 |
| 21 | 4 1/8 | 3 1/8 | 38 |
| 24 | 4 1/8 | 3 1/8 | 40 |
| 30 | 5 | 4 | 54 |
| 36 | 5 | 4 | 62 |
| 42 | 6 | 5 | 84 |

All dimensions in inches and apply to C-10 Series gates. *Special fabricated design for geared type lift.



RISING STEM EXTENSION