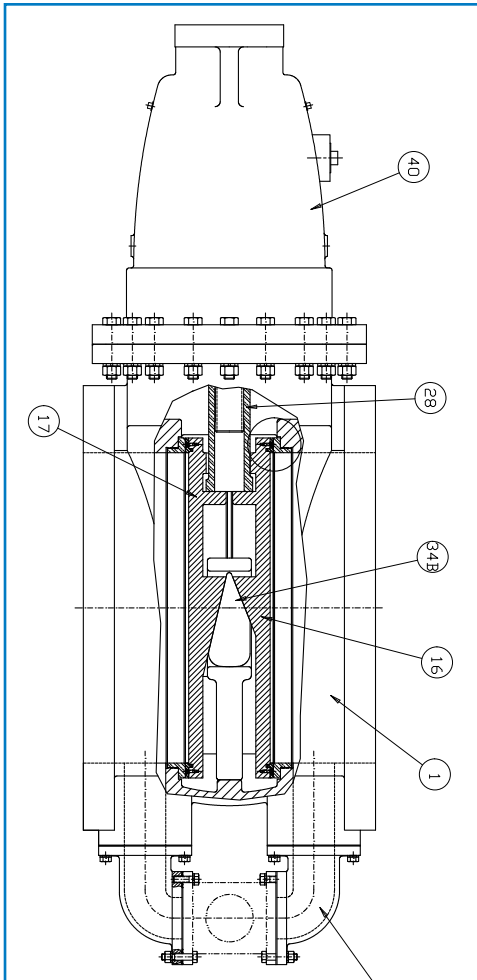


L14 SERIES Double Disc Gate Valve Sizes 14"-108"

List 14 Double Disc Gate Valves continue to be the most rugged commonly used control mechanisms for on/off service. They are used in the general waterworks service; water pollution control; the chemical process industry; iron and steel mills, particularly blast furnace pipelines; in coke oven and by-product plant pipelines.



When fully opened, double-disc gate valves offer unobstructed passage, straight-through flow that is equivalent to the inside diameter of the associated piping. The result is a lower pressure drop. Double-disc gate valves also utilize the contained pressures for tight shut-off. The internal forces of the medium work with the seating mechanisms. Double-disc gate valves manufactured by Ludlow-Rensselaer utilize a bottom wedging principle, avoiding jamming or scoring due to premature wedging in the partially open position.

Further, double-disc gate valves offer a forgiving mechanism for durable long life, and will function for decades with low maintenance. The manufacturing tolerances and simple design, along with rugged construction, allow for easy installation and external stress and corrosion, while maintaining operating effectiveness. Double-disc gate valves lend themselves to part replacement and repair without removal from the pipeline. The Ludlow-Rensselaer type can be repacked under pressure.

THE LUDLOW-RENSELAER VALVE uses a double wedging principle, so that by placing the gate which has the short or abrupt wedge on the upstream side, advantage can be taken of the pressure or power contained within the water mains to assist in unlocking the wedges, thus allowing the water pressure to become equalized at once within the valve, producing bypass effects by means of this internal mechanism within the valve itself - an advantage attained by no others.

These results are accomplished as follows: The short side of the wedge is used only in the opening operation, and is made so abrupt or blunt that the greater the pressure of the stem-nut holding the gate in position is withdrawn. Then the thick side of the stem-nut, always acting independently upon the short wedge gate, completes the releasing of the entire wedging mechanism at the first movement of opening. This is usually accomplished without the aid of the lifting motion of the stem. The stem, therefore, has only to overcome the friction of the water in the mains, and as it can never be forced out of alignment nor bound in the stem-nut, which occurs when the stem-nut is attached to the wedges, very little power is required to be applied to the handwheel or nut. For convenience in setting, the gate which has the short or abrupt wedge is always painted red, and we recommend that the valve be placed with the red gate towards the pressure.

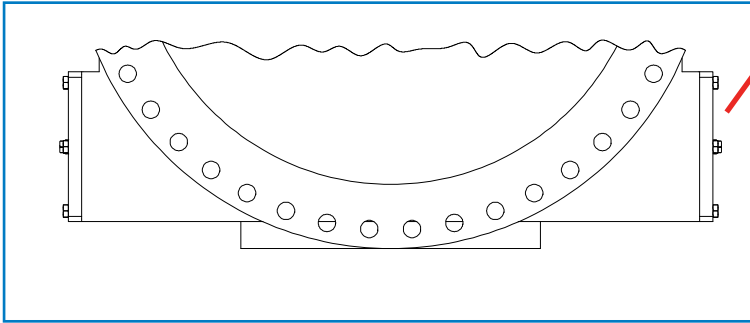
MATERIALS	SIZES	14" Thru 108" in AWWA Class 150, 250 (meets AWWA C500)	SEATS	Aluminum Bronze C954
	BODY	Ductile Iron (ASTM A536, Grade 65-45-12) Optional Cast Iron (ASTM A126, Class B)	GATES	Ductile Iron (ASTM A536, Grade 65-45-12)
	STEM	ASTM A276, Grade 304 Stainless Steel	COATING	TNEMEC N141 2-Part Epoxy In/Out
			BOLTS AND NUTS	304 Stainless Steel Standard

L14 SERIES Double Disc Gate Valve Sizes 14"-108"

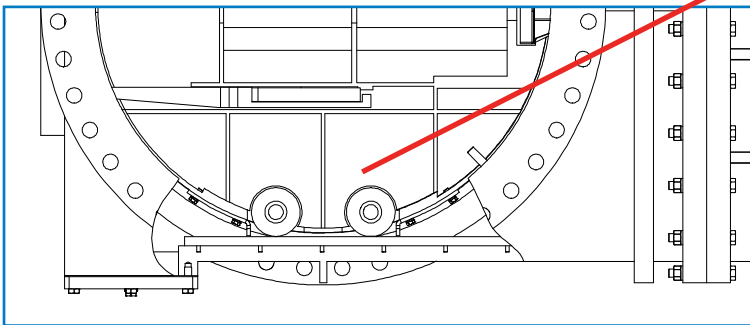
In the closing operation, the short side of the wedge quickly adjusts itself to its gate on a rocker bearing, and as the last turn of the stem acts only on the long or powerful side of the wedge, the gates are wedged powerfully with the application of very little force to the handwheel or nut.

Ludlow-Rensselaer gates may be placed in any position, and owing to the combination of the mechanical principles of the independently moving gate with the abrupt wedge, whereby the long and powerful wedge is used only for closing, and the short or abrupt wedge only for opening, we guarantee that Rensselaer valves may be operated in any position easier than valves of any other manufacturer, and if they can be placed with the short wedge gate toward the pressure, this additional advantage is gained over valves of other manufacturers, and the bother and expense of operating bypasses is avoided.

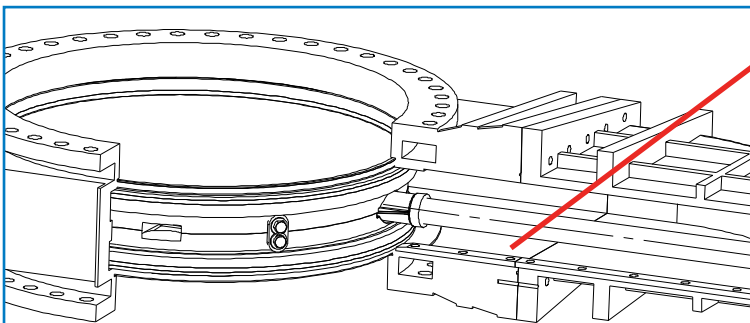
Installation Configurations



Vertical Orientation—Flushing/Clean-Out Ports cast into the Inverts on the bottom of the body when the valve is installed vertically in the pipeline allow for access to clean the lower trough while under pressure in a closed position.



Horizontal Pipelines—Rollers, tracks and scrapers are furnished on L/R valves with stems in a horizontal position, and gates are on edge (or on side), in a horizontal pipeline. The rollers and track support both gates in the entire length of travel, and the scrapers attached ahead and behind, the rollers clear the track of any obstruction or sediment. The rollers on tracks also maintain a smooth operating function, keeping the disc centered for proper seating alignment



Horizontal Flat Orientation—Face tracks are installed on L/R valves which are to operate with stems in a horizontal position, and gates are on their face in a vertical pipeline. The track supports the gate throughout the entire length of travel to prevent distortion, vibration, chatter and other movement, or ring scoring.

METHODS OF OPERATION

Manual—Where intermittent operation is required, manual operation is recommended. Easily accessible valves under normal pressures, or closely controlled throttling conditions, also call for manual operation. Bevel or Spur gearing can be supplied, as required

Hydraulic or Pneumatic Cylinder—L/R recommends the use of hydraulic or pneumatic cylinders when: 1) High cycling is expected, and threaded mechanisms would show excessive wear; 2) Fast closing is required; 3) It is economical to use other hydraulic or pneumatic energy sources.

Electric Motor Operator—L/R recommends the use of electric motor operators in order to properly control the opening and closing of the gate. The torque limit switches on the motor and the mechanical stops on the gear prevent damage to the seating areas from obstructions in the waterway, etc.

ADDITIONAL OPTIONS



Bypass Lines—L/R recommends Bypass Lines on valves 16" and larger to reduce the differential pressure on both sides of the gates for easier operation in higher pressure installations. Bypass Lines are also available on smaller valves sizes upon request.

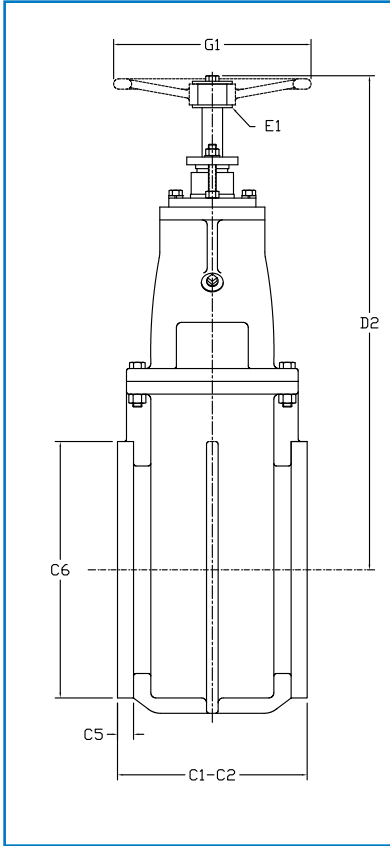
Gearing—L/R uses all Name-Brand third party gearing in full compliance with AWWA standards. Bevel and Spur Gearing is available for specific installation orientations.

Extension Stems and Bonnets—L/R can supply in-house manufactured stem extensions, bonnets, and adaptors as required regardless of installation orientations.

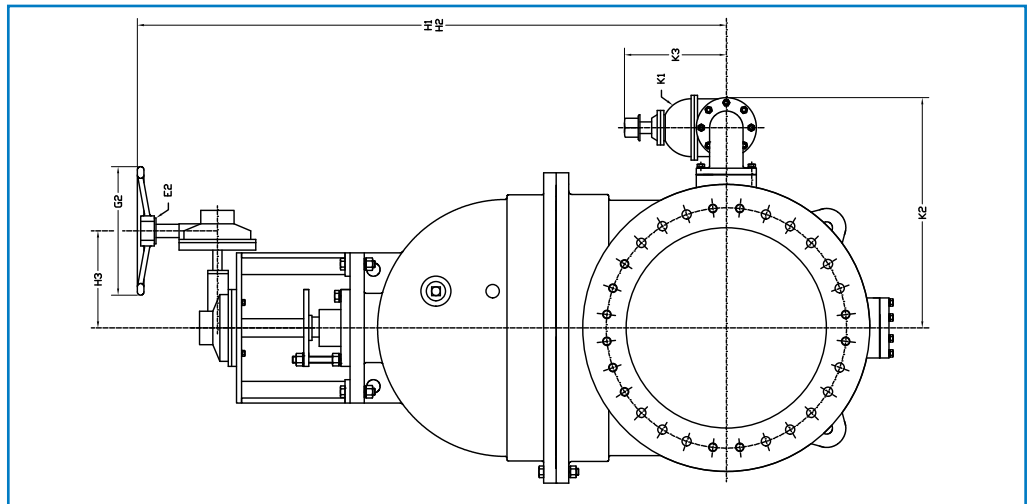
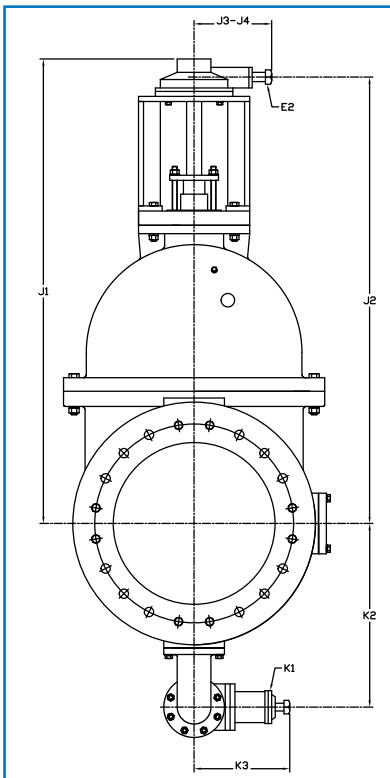
STANDARD MATERIALS OF CONSTRUCTION (REFER TO SAMPLE G/A DWG)

ITEM	DESCRIPTION	MATERIAL	ITEM	DESCRIPTION	MATERIAL
1	Body	ASTM A536 GR 65-45-12 D.I.	40	Cover (Bonnet)	ASTM A536 GR 65-45-12 D.I.
2	Body Ring	ASTM B584-954 Bronze	46	Throat Flange O-ring	Nitrile
5	O-ring – gate	Nitrile	47A	Throat Flange Bolts	ASTM J429 Gr 5 Zinc Plated
7	Gate Ring Screws	304 Stainless Steel	47B	Throat Flange Nuts	ASTM J429 Gr 5 Zinc Plated
13	Bypass Elbow	ASTM A536 GR 65-45-12 D.I.	48	Thrust Collar Bearing – upper	ASTM B505-932 Bronze
13A	Bypass Valve	ASTM A126 Class B Cast Iron	49	Thrust Collar Bearing – lower	ASTM B505-932 Bronze
16	Gate – short	ASTM A536 GR 65-45-12 D.I.	50	Test Plug	Steel
17	Gate – long	ASTM A536 GR 65-45-12 D.I.	54A	Packing Box O-ring	Nitrile
18	Gate Ring	ASTM B584-954 Bronze	55	Packing	Packer "V" rings
20	Gate Link	AISI 304 Stainless Steel	57	Follower	ASTM A36 Steel
21	Gate Link Bolt	304 Stainless Steel	58	Follower Bushing	ASTM B505-932 Bronze
28	Stem Nut	ASTM B148-955 Aluminum Bronze SAE 40	61A	Follower Stud	304 Stainless Steel
30	Gate Incline – short * 3"-12"	ASTM B584-954 Bronze	61B	Follower Nut	AISI Bronze
31	Gate Incline – long * 3"-12"	ASTM B584-954 Bronze	63	Bypass Cap	ASTM A36 Steel
33A	Hook	ASTM A536 GR 65-45-12 D.I.	64	Yoke	ASTM A36 Steel
34B	Wedge	ASTM B148-955 Aluminum Bronze SAE 40	65A	Yoke Bolts	SAE J429 Gr 2 LD/Med Carbon Steel
36	Stem	AISI 304 Stainless Steel	65B	Yoke Nuts	SAE J429 Gr 2 LD/Med Carbon Steel

Dimensional Data



LUDLOW-RENSSELAER DOUBLE DISC GATE VALVES		
	Size of Valve (inches)	Dim.
	Face to Face-No Bypass	C1
FLANGE	Face to Face-with Bypass	C2
ENDS	Diameter of Bolt Circle	C3
HD-132	Number & Size of Bolts	C4
	Thickness of End Flange	C5
	Diameter of End Flange	C6
	Length of Throat Flange	D1
WITHOUT	Center of Port to top of Stem Max N.R.S.	D2
GEARING	Center of Port to top of stem-OSY Close	D3
	Center of Port to Top of Stem-OSY-Open	D4
TURNS TO	Valves without Gears	E1
OPEN	NRS Valves with Spur or Bevel Gears	E2
WHEEL	Valves without Gears	G1
DIA WITH	Valves with Spur or Bevel Gears	G2
SPUR	Center of Port to Top of Spur Pinion Shaft w/o Indicator	H1
GEARS	Center of Port to Top of Spur Pinion Shaft w/Indicator	H2
	Center of Stem to Center of Spur Pinion Shaft	H3
WITH	Center of Port to Top of Bevel Gear Case	J1
BEVEL	Center of Port to Center of Bevel Pinion Shaft	J2
GEARS	Center of Stem to End of Bevel Pinion w/o Indicator	J3
	Center of Stem to End of Bevel Pinion Shaft w/Indicator	J4
WITH	Size of Bypass	K1
BYPASS	Center of Main Valve to Outside of Bypass Valve	K2
	Center of Bypass Valve to Top of Bypass stem	K3



Dimensional Data

Working Pressure 250 psi					Test Pressure 500 psi					
List 14 (Ductile Iron)										
14	16	18	20	24	30	36	42	48	54	60
18 1/2	21 1/2	22	22	26 1/2	28 1/4	30	35 3/4	42 1/2	52	53
18 1/2	21 1/2	22	22	26 1/2	28 1/4	30	35 3/4	42 1/2	52	53
18 3/4	21 1/4	22 3/4	25	29 1/2	36	42 3/4	49 1/2	56	62 3/4	69 1/4
12 1	16-1	16-1 1/8	20-1 1/8	20 1 1/4	28-1-1/4	32-1 1/2	36-1 1/2	44-1 1/2	44-1 3/4	52-1 3/4
1 3/8	1 7/16	1 8/16	1 11/16	1 7/8	2 1/8	2 3/8	2 5/8	2 3/4	3	3 1/8
21	23 1/2	25	27 1/2	32	38 3/4	46	53	59 1/2	66 1/4	73
23 3/4	25	28 1/2	32 1/4	38 3/4	46 1/2	55	59 1/2	71	79	86
35	37	43	48	54	58					
50 3/4	56 1/2	63 3/4	71	81						
66	73 3/4	83 1/4	92 1/2	107						
46	52	59	65	77						
92	104	118	130	232	385	455	353	408	448	500
20	20	20	24	24						
18	18	20	24	24	30	36	40	40	40	40
46 1/2	49	52	57	65	88 1/2	99 1/2	116 1/2	128 1/2	134	144
51 1/2	54	57	62	70	93 1/2	104 1/2	121 1/2	133 1/2	139	149
4 7/8	4 7/8	4 7/8	4 7/8	6 1/2	8 3/4	8 3/4	12 1/2	12 1/2	12 1/2	12 1/2
43 1/2	46	49	54	61	82	93 1/2	110 1/2	122	128 5/8	138 1/4
39 1/2	42	45	50	57	77	88 1/2	103 1/2	115	121 3/4	131 3/8
10 1/2	10 1/2	10 1/2	10 1/2	13	17	17	21 1/2	21 1/2	21 1/2	21 1/2
13	13	13	13	15 1/2	19 1/2	19 1/2	24	24	24	24
2	3	3	3	4	4	6	6	8	12	12
19	22 1/2	23 1/2	25 1/4	29 1/2	31 1/2	37 1/2	41	49 3/8	63 1/4	66 1/2
8 1/2	12 3/4	12 3/4	12 3/4	14 5/8	14 5/8	17 1/8	17 1/8	21 5/8	29 1/2	29 1/2

FOR SIZES ABOVE 60", PLEASE CONSULT FACTORY

**THE ABOVE DIMENSIONS ARE FOR PRELIMINARY REFERENCE ONLY.
FOR ACTUAL DIMENSIONAL LAYOUT,
PLEASE CONSULT FACTORY.**

LUDLOW-RENSSELAER

DOUBLE DISC GATE VALVE SPECIFICATIONS

STANDARD SPECIFICATION FOR AWWA C500 DOUBLE DISC GATE VALVES

Products 2.1 Double Disc Gate Valves 14" and larger per AWWA C-500

Manufacturer: Ludlow-Rensselaer

- A. The valves shall have a Ductile Iron Body, Double-Disc sealing, with non-revolving parallel seats, internal wedging and bypass. The valves shall be equipped with a positive operating internal device which will press the disc seats firmly against the body seats when the valve is closed, and shall release the load before the disc starts to move when the valve is being opened. Valves shall have 3/4" NPT pipe plugs in each side of the bonnet. Valves shall be ANSI/NSF61 approved.
- B. Valves shall be of the non-rising stem or rising type as required by the valve schedule.
- C. Valves mounted horizontally in a horizontal line shall be equipped with rollers, tracks and scrappers.
- D. Valves mounted horizontally in a vertical line shall be equipped with disc face tracks.
- E. Valves mounted vertically in a horizontal line shall be equipped with flushing/clean out ports integrally cast into the inverts on the body.
- F. Valve construction shall meet or exceed the latest AWWA C500 standards. The valves shall be constructed with ASTM B584-954 bronze body and disc seat rings.
 - 1. Disc seat rings shall be provided with "O" ring seals between the wedge and disc ring.
 - 2. The gates shall be cast from ASTM A536 grade B ductile iron.
 - 3. The valve stem shall be ASTM A479 type 304 stainless steel.
 - 4. The body and bonnet shall be constructed with ASTM A536 Grade B ductile iron and sealed by and "O" rings.
 - 5. The valves shall be equipped with a packing box design for "V" ring type packing and sized to allow replacement of the packing without removal of the operator.
 - 6. Valves shall have ANSI B16.1 class 125 or 250 flat faced flanges as specified in the valve schedule.
 - 7. All valves shall be tested per the requirements of AWWA C500 test procedures.
 - 8. The valve shall be painted interior and exterior with Tnemec N141 two-part epoxy, in accordance with AWWA C550. The paint shall be certified in accordance ANSI/NSF61.
 - 9. Valve operator shall have either spur gear or bevel gear with 2" op nut or handwheel.

All Ludlow-Rensselaer Double-Disc Gate Valves (List 14A, 14"-108") meet or exceed A.W.W.A. C-500-80 Specifications.