

RAPHAEL

Product brochure

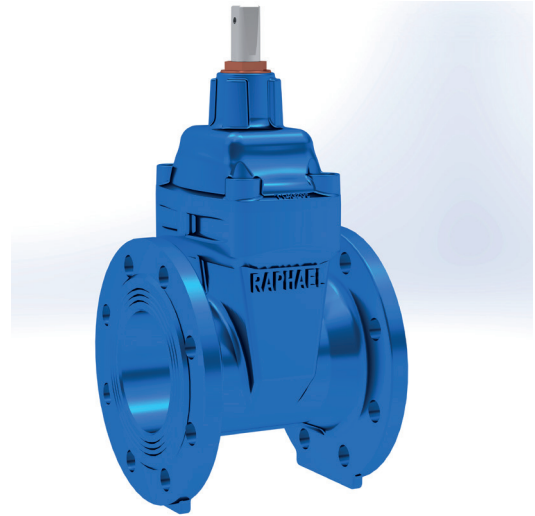
## **TRS/TRL - G2**

Resilient Seated Gate Valve



# RESILIENT SEATED GATE VALVES

The latest RAPHAEL's proven range of valves, the TRS/TRL-T represents a new generation of resilient seated gate valves [DN40-1200]. As well as boasting of the latest technological advances and unique technical features, TRS/TRL manufactured using high quality materials and the latest manufacturing technologies, to guarantee, to our valuable customers, an extraordinary lifetime, outstanding operability and unique safety features.



## ADVANTAGES

**Low torque:** TRS G2 and its new wedge and stem technology ensures smooth functionality with outstanding low torque values.

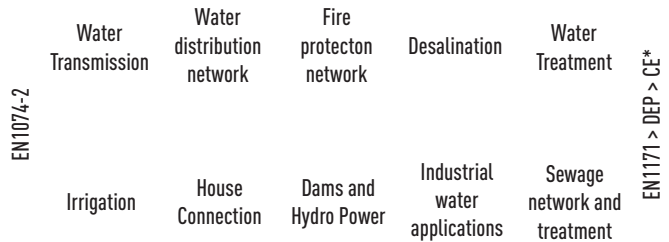
**Longer service life:** Perfect guiding system for the wedge.

**Corrosion resistance:** high quality materials. Wide range of coatings available. Threadless bonnet up to DN300 that allows continuous coating.

**Low head loss:** clear way and straight bore design from DN40 up to DN600 in order to allow a free path without restriction of the fluid.

**Bubble tight shut off:** new wedge design with increased thickness of the elastomer at the sealing areas to improve tightness.

## APPLICATIONS



### On networks, gate valves can be:

- Used both as part of new works and renovations.
- Installed outside, buried in the ground, in room, or in buildings.

### The use of gate valves allows user:

- To balance the distribution of water at all points in the mesh network (in open or closed position).
- To isolate control valves, fire hydrants, air valves, pumps, etc. for their maintenance.
- To perform maintenance on the network (isolation of part of the network).
- To stop the flow in the case of failure or pipe incident.
- To drain water tanks or sections of the water network.

## CHARACTERISTICS

Made of **high quality materials** according to the relevant standards.

**Clear way and straight bore**, so the flow is optimum with minimum head losses.

**Replaceable packing**

- Wedge fully encapsulated in EPDM for a better resistance to corrosion.
  - Integral sliding followers as guiding system for easy operation under maximum differential pressure.
  - Body bonnet bolts are protected with hot melt glue.
  - **Rounded surfaces** of the body ensure a uniform coating and protection of the highest quality.
- Excellent corrosion resistance thanks to the fully coated bonnet (not threads) and the epoxy powder coating. Stem in stainless steel. Shell designed to withstand 64 bar (VdS type). Maintenance free. Prepared for actuator version available. Approved standard EN 1074-2 and EN 1171. 100% tested acc. to EN 12166-1 standard.

(\* ) List of countries on request.

## OPTIONS/VARIANTS

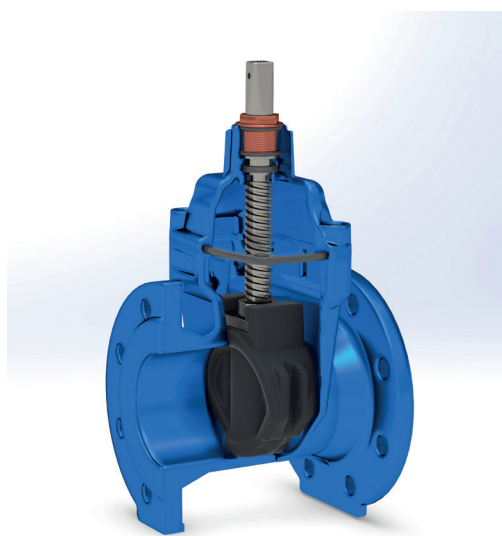
FBE 250 microns mini, others Enamel or Rilsan coating. Electric actuator, Pneumatic/ Hydraulic cylinder, others.

Visual mechanical position indicator with optional electrical limit switch.

Configuration for sea water, sewage water and hot water. Valve complying to BS5163 type A or B.

Wedge fully encapsulated in NBR or hot EPDM (up to 70°C). Bolts in stainless steel A2 or A4. Accessories (handwheel, cactop, stem extension, others).

Excellent corrosion resistance thanks to the fully coated bonnet (not threads) and the epoxy powder coating RILSAN POLYESTER and ENAMEL.



## TECHNICAL DATA

**Nominal Diameter (DN):** DN40 to DN1200

**Body length to EN558:** Series 14: short body (F4). Series 15: long body (F5).

**Closing direction:** Clockwise closing (CC). Anticlockwise closing (ACC).

**Nominal Pressure (PN):** PN16

**Flange Drilling:** PN10 or PN16 according to EN 1092-2.

**Medium Temperature (EN1074-2):**

**Epoxy coating:** -10 to 50°C Enamel coating: -10 to 50°C (up to 70°C under request, in the case of EN1171).

**Water tightness:** Rate A according to EN 12266-1.

**Maximum Velocity:**

	PFA/PS	EN1074-2	EN1171
10 bar		3 m/s	5 m/s
16 bar		4 m/s	5 m/s

## APPROVALS

In conformity with European standard EN 1074-2 and EN 1171

Israeli standard IS61, IS5452  
DVGW, KIWA, WRAS, IS61,  
DM197, ACS, NF,OVGW,SVGW,  
PZH, Hygienic Russia

# RESILIENT SEATED GATE VALVES

## TRS (F4) / TRL (F5) - DN40/300 - PN10/16

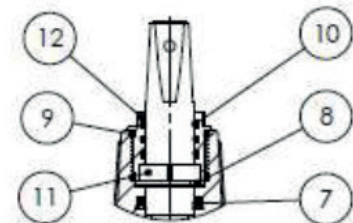
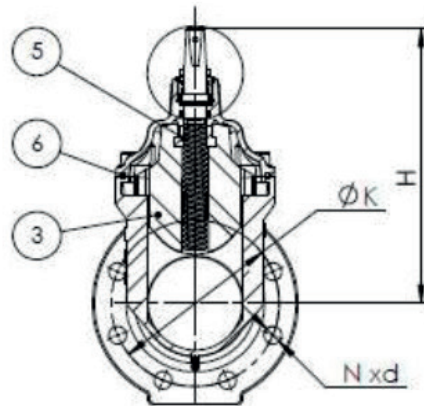
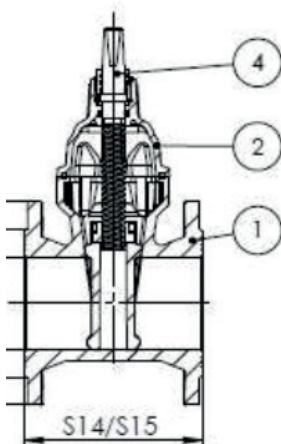
(according to EN1074-2 (annex A) and EN1171 (category 3))

Item	Description	No.	Material	Standard
1	Body	1	EN-GJS-500-7 2)	EN 1563
2	Bonnet	1	EN-GJS-500-7 2)	EN 1563
3	Wedge	1	EN-GJS-500-7/EPDM	EN 1563
4	Stem	1	SS420/SS316	
5	Wedge lock nut	1	Copper alloy CW617N	EN 12165
6	Bonnet Gasket	1	EPDM	
7	Stem Seal	1	EPDM 1)	EN 681-1
8	Gland	1	POM	-
9	O-Ring	1	NBR	EN 681-1
10	O-Ring	1	NBR	EN 681-1
11	Half Ring	1	Copper alloy CW617N	EN 12165
12	Stuffing Nut	1	Copper alloy CW617N	EN 12165



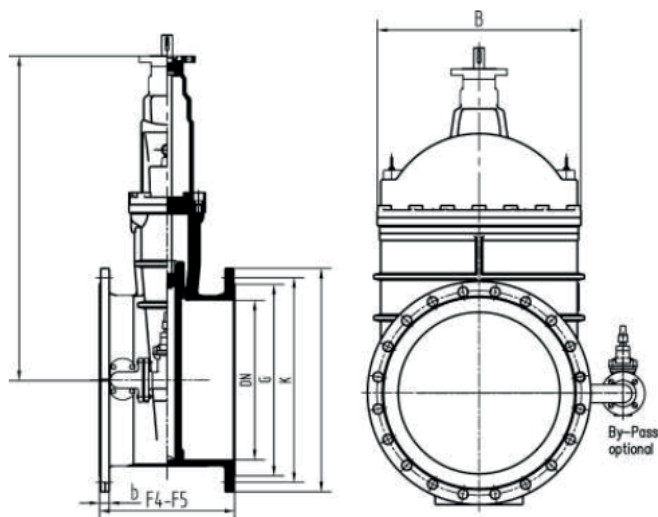
TRS (F4) / TRL (F5) - DN40/300 - PN10/16

DN	ØD (mm)	EN 1092-2 PN10			EN 1092-2 PN16			AS 2129 Table D (ASTD)		EN 558 (DIN 3202)		H (mm)	L (mm)	ØD1 (mm)	No. of turns for closing	Weight (kg)	
		ØK (mm)	ØG (mm)	n°xd	ØK (mm)	ØG (mm)	n°xd	ØK (mm)	n°xd	S14 (TRS) (mm)	S15 (TRS) (mm)					S14 (TRS) (mm)	S15 (TRS) (mm)
40	150	110	84	4x19	110	84	4x19	98	4x15	140	240	174	75	150	11,5	6,7	7,3
50	165	125	99	4x19	125	99	4x19	114	4x19	150	250	197	83	150	14	8,3	8,8
65	185	145	118	4x19	145	118	4x19	127	4x19	170	270	237	93	150	15	12,3	13
80	200	160	132	8x19	160	132	8x19	146	4x19	180	280	260	100	200	18	13,7	14,9
100	220	180	156	8x19	180	156	8x19	178	4x19	190	300	285	110	200	21,5	16,4	17,9
125	250	210	184	8x19	210	184	8x19	210	8x19	200	325	340	125	300	27	22,5	25,2
150	285	240	211	8x23	240	211	8x23	235	8x19	210	350	373	143	300	32	27,2	30,6
200	340	295	266	8x23	295	266	12x23	292	8x19	230	400	460	170	400	41,5	46,9	54,2
250	400	350	319	12x23	355	319	12x88	356	8x23	250	450	549	200	400	43	69,5	78,8
300	455	400	370	12x23	410	370	12x28	406	12x23	270	500	630	228	500	51	96,5	114,5



# RESILIENT SEATED GATE VALVES

## F4/F5 - DN350/1200 - PN10/16



DN	EN 1092-2 PN10				EN 1092-2				DIN 3202		A	B	ØD1 (mm)	No. of turns for closing	Weight (kg)	
	K	G	b	nxd	D	K	G	nxd	F4 -TRS	F5-TRS					TRS	TRL
350	460	429	24.5	16x23	520	470	429	16x28	290		750	520	500	50	190	
350	460	429	24.5	16x23	520	470	429	16x28	290	550	693.5	520	500	55	136	150
400	515	482	24.5	16x28	580	525	480	16x31	310	600	970	660	630	57	275	325
450	565	532	24.5	20x28	640	585	550	20x31	330	650	970	660	630	57	360	425
500	620	585	26.5	20x28	715	650	609	20x34	350	700	1103	828	800	63	456	530

DN	EN 1092-2 PN16					DIN 3202			A	B	D1	No. of turns for closing	Weight (kg)	
	D	K	G	b	nxd	TRS	TRL	TRS					TRL	
600	840	725	682	36	20x31	390	800	1280	854	800	60	950	1100	
700	910	840	94	39.5	24x31	430	900	1280	854	800	60	1100	1300	
800	1025	950	901	43	24x34	470		1600	1120	800	133	1800		
900	1125	1050	1001	46.5	28x34	510	1100	1600	1120	800	133	1950	2300	
1000	1255	1060	112	50	28x37	550		2100	1338	900	166	2800		
1200	1485	1380	1328	57	32x40	630	1400	2100	1338	900	166		3300	

## **i** GOOD TO KNOW BEFORE INSTALLATION

### Storage

- Leave the rubber wedge slightly open: if it is closed completely, the rubber suffers unnecessary compression. Remove the flange cover just before the installation.
- The gate valves should preferably be stored under cover. A long storage under extreme weather conditions can cause alterations of the coating and seals.

### Assembly in pipe

- The assembly of the valve in the pipe is independent of the flow direction.
- When connecting the valve to the pipe, avoid the transmission of stress from the pipe to the valve body. For that, any pipe or pipe sections or valve not yet finally clamped in place must be provisionally supported to prevent abnormal stress on one or both sides of the valve.
- Tighten screws gradually in a star-shaped pattern, respecting the tightening torques.
- Once the valve is assembled, the threads of the bolts/rods should be greased with a graphite based waterproof grease (MOLYCOTE or similar) to prevent corrosion and facilitate subsequent dismantling operations.

### Operation

- Each valve must be operated in respect of the operating torque by means of a handwheel or a square cap top, in the latter case a purpose-designed operating key must be used. Do not use the valves for regulating mode.
- Do not use the valves with EPDM rubber with gaseous fluids such as propane, butane, natural gas and also with hydrocarbons fluids like petrol, diesel.

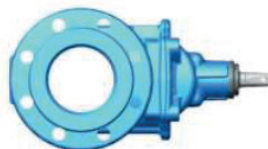
## RECOMMENDED POSITIONS

### From DN40 up to DN300

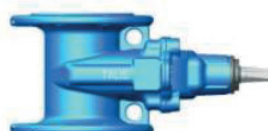
- 1) Ideal position:  
vertical stem,  
horizontal flow



- 2) horizontal stem,  
horizontal flow



- 3) horizontal stem,  
vertical flow



### From DN350 up to DN700

- 1) Ideal position:  
vertical stem,  
horizontal flow



- 2) Oblique stem,  
horizontal flow



30° min



**RAPHAEL VALVES INDUSTRIES (1975) LTD**, founded in 1949, is the first Israeli manufacturer of water control valves. RAPHAEL's research department constantly strives to introduce new and innovative products and solutions for water control systems including water works, fire-protection and irrigation systems and other fields.

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