

TURNFLO



Butterfly Valves

T5 (Wafer) and

T6 (Lugged) Series



- 50-600mm size range
- Cartridge type replaceable seat
- Full Vacuum to 16 bar pressure range (up to 300mm sizes)
- Universal flanging compatibility on wafer style to 300mm

T5 & T6 SERIES FEATURES AND BENEFITS



AGA
Approved

When fitted with Buna Seats
Fig. No. T5CA43 (Wafer)
Fig. No. T6CA43 (Lugged)
Max. WP 16 bar
Max. Temp. 60°C

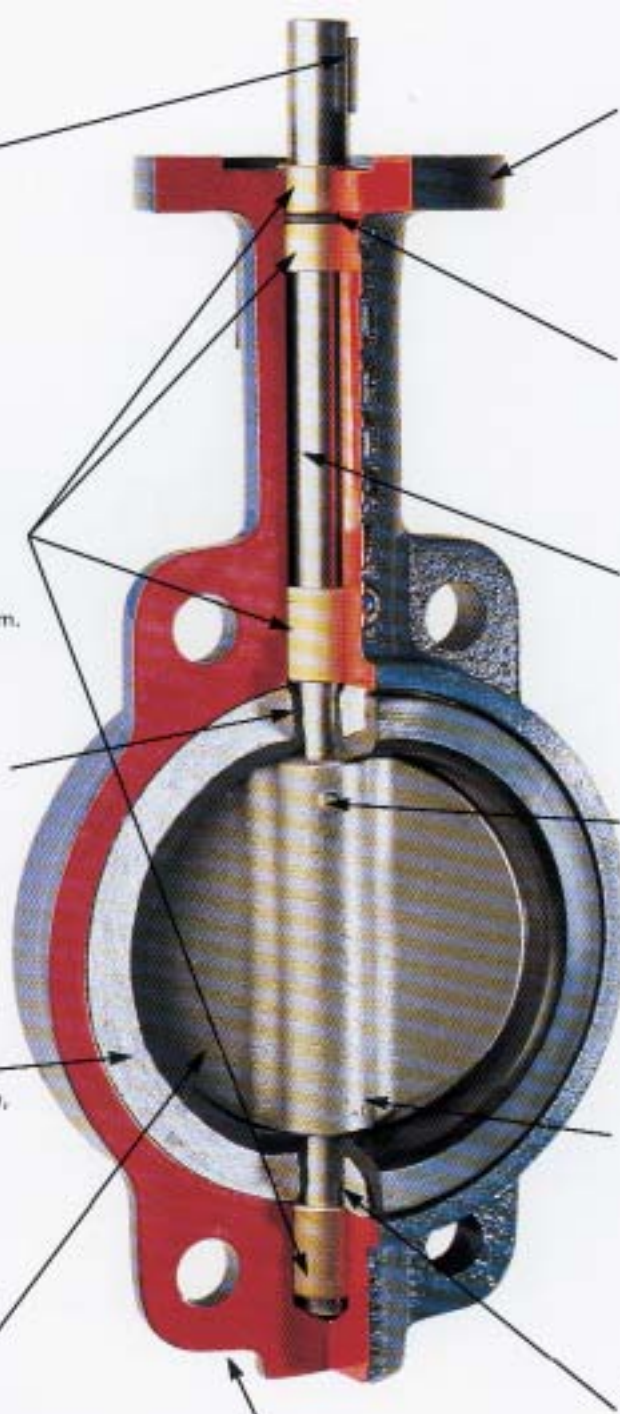
Popular Double "D"
drive for sizes 50 - 200mm
and positive keyed drive for
sizes 250mm and above.

Self lubricating bushes provide
maximum stem support with
minimum friction. Eliminates
potential stem seizure.
Fibreglass & PTFE - up to 300mm.
Bronze - 350mm and above.

Pressure surge seals (O'rings)
are moulded inside the seat
stem hole area to provide
failsafe sealing around stem,
eliminating possible leakage.

Phenolic resin backed seat
(50 - 350mm) is non-collapsible,
stretch resistant and blowout
proof. Easily field replaceable.
It allows full valve rating with
downstream flange removed
on lugged body style.

Precision profile disc provides
bubble-tight shutoff with
minimal disc/seat interference,
assuring minimum torque and
longer seat life.



Large actuator mounting
flange, drilling conforms to
ISO 5211 and accommodates
all types of operators, lever,
gear, electric, hydraulic and
pneumatic.

O'ring weather seal prevents
ingress of moisture and external
material into the stem area.

One piece thru-stem design
ensures dependability and
positive disc control.

Precision taper pins ensure
positive, vibration proof,
stem to disc connection.
One pin \leq 125mm size
Two pins \geq 150mm size

Polished disc flats "mate" with
seat flats to give a highly
efficient seal; prevents leakage
into the stem area.

Supported stem seal protects
against distortion, a common
cause of stem leakage.

Universal flange adaptability
for wafer style (T5) in size range
50 - 300mm. Suits ANSI 125,
DN 16, AS 2129 Table "E".

TECHNICAL SPECIFICATIONS – T5 AND T6 SERIES

- Size range** – 50-600mm
- Body style** – wafer or lugged
– Face to Face – BS 5155 (up to 300mm)
- Flanging** **Wafer** – 50-300mm – universal
Suit ANSI 125/150, Din 16, AS 2129 “E”
350+mm - AS 2129 Table “E” or
ANSI 125/150
Lugged – AS 2129 “E” (Tapped metric)
ANSI 125/150 (Tapped UNC)
- Pressure Ratings**
- Pressure Tests – in accordance with BS 5155 (1.1 x MWP)
- Max CWP – 50-300mm - 1.6 MPa
– 350+mm - 1.0 MPa
– Vacuum Service to -1 Bar

MATERIAL SPECIFICATIONS

Body Material

- size – 50-300mm
Cast Iron to ASTM A-126 Gr B
- size – 350-600mm
Ductile Iron to ASTM A536 GR 65-45-12
- Disc** Stainless Steel to ASTM A351 Gr CF8 (304) standard
CF8M (316) or Alum. Bronze optional.
Aluminium Bronze to ASTM B-148

Stem

- size – 50-300mm
Stainless Steel to ASTM A276 Gr 431
- size – 350-600mm
Stainless Steel to ASTM A582 Gr 416
- Pins** Stainless Steel to ASTM A276 Gr 316

Seat Options

- EPDM** (Ethylene propylene diene monomer)
Temp. range - 40 to 110 degrees C.
Suitable for most general applications including hot water,
animal oils, some acids, salts and oxidising chemicals.
Not suitable for Hydrocarbons.

FKM (Viton)

- Temp. range - 30 to 180 degrees C.
Suitable for most processing applications, aromatic hydrocarbons
(oils and petrol), gases and most acids. Excellent for higher temp.
applications (not steam).

BUNA-N (Nitrile butadiene rubber)

- Temp. range - 18 to 90 degrees C.
Suitable for general applications where temperature is not
a problem. Can be used on some Hydrocarbons (**NOT PETROL**).

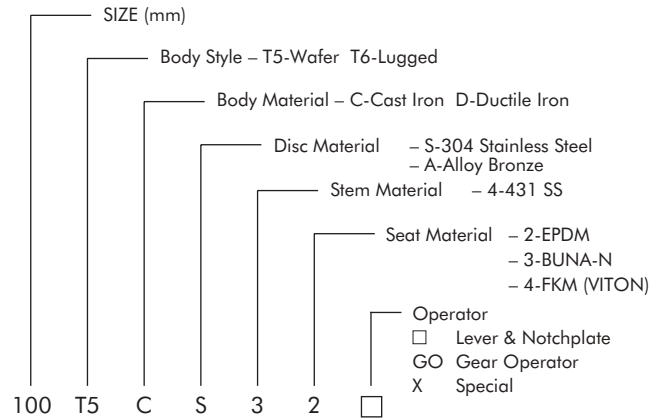
**Note - The information above is intended as a guideline only.
Always refer if unsure of the compatibility of components with
the medium or when the intended application approaches the
maximum pressures and temperatures listed above.**

DIMENSIONS T5 and T6 Series

Size (mm)	D1	WAFER		LUGGED**		D4	D4K	D5	D5K	D6	D7	D8	A	B	C	E	F	L	H	KEY	WEIGHTS (KG)			
		D2	N-D3	D2	N-TH																VALVE - BARE SHAFT		OPERATORS	
																					T5 WAFER	T6 LUGGED	LEVER	GEAR
50	53	UNIVERSAL SUITS ANSI 150, DIN 10/16, AS 2129 D/E. REFER TO FLANGE TABLE STANDARDS FOR DRILLING AND PCD'S.	114	4-M16	70	83	10	11	102	100	12.7	280	161	42	32	13	45	19.5	-	3	4	0.5	5	
65	65		127	4-M16	70	83	10	11	102	120	12.7	303	175	45	32	13	48	19.5	-	3	4	0.5	5	
80	79		146	4-M16	70	83	10	11	102	127	12.7	315	181	45	32	13	49	19.5	-	4	5	0.5	5	
100	104		178	8-M16	70	83	10	11	102	156	15.9	353	200	52	32	13	55	11.1	-	5	9	0.5	6	
125	123		210	8-M16	70	83	10	11	102	190	19.0	379	213	54	32	13	58	12.7	-	7	11	0.8	6	
150	156		235	8-M20	70	83	10	11	102	212	19.0	404	226	56	32	13	59	12.7	-	8	14	0.8	6	
200	203		292	8-M20	102	127	12	14	152	268	22.1	487	260	61	45	13	63	15.9	-	13	18	1.3	13	
250	251		356	12-M20	102	127	12	14	152	325	28.5	547	292	66	37	13	70	-	6.35x25.4	19	27	-	13	
300	302		406	12-M24	102	127	12	14	152	403	28.5	631	337	77	45	20	80	-	6.35x25.4	33	40	-	15	
350	334		470	26	470	12-M24	102	-	12	-	140	436	31.6	680	368	77	45	20	80	-	6.35x25.4	41	56	-
400	390	521	26	521	12-M24	159	-	18	-	197	488	33.15	760	400	86	51	20	90	-	10x50	61	96	-	32
450	441	584	26	584	16-M24	159	-	18	-	197	539	37.95	801	422	105	51	20	109	-	10x50	79	122	-	50
500	492	641	26	641	16-M24	159	-	18	-	197	593	41.12	898	480	131	57	20	135	-	10x50	128	202	-	50
600	593	756	33	756	16-M30	216	-	23	-	276	816	50.62	1091	562	152	70	20	156	-	16x63	188	270	-	50

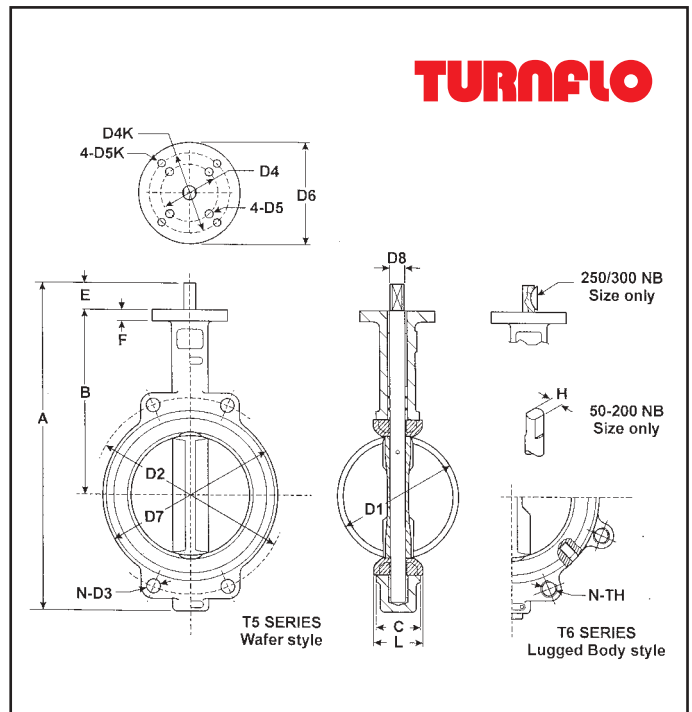
**LUGGED — AS 2129 Table “E”, as standard.

FIGURE NUMBERING SYSTEM



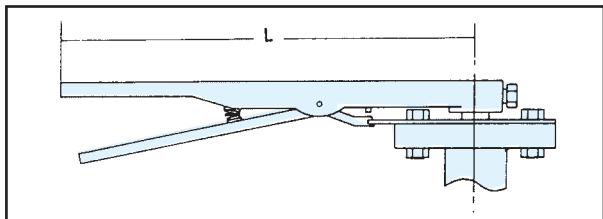
- 100mm Wafer Style, C.I. Body, 304 disc, 431 stem, Buna seat, lever operated.

Other Body and Trim options available on special request.



TURNFLO

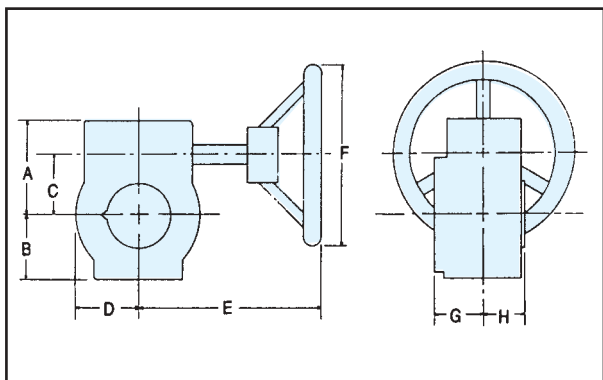
LEVER OPERATOR



THROTTLE/LOCK HANDLE

Infinite position with memory stop and locking device.

GEAR OPERATOR



ACTUATOR OPTIONS:

- Lever Operator** – 10 position lever and notchplate
– standard on sizes up to 200mm
- Gear Operator** – standard on sizes 250mm & above
- Pneumatic** – air operated (double acting & spring return), c/w solenoid valves, limit switches, position indicators, modulating controls
- Electric** – open/close, modulating control

Note - Cv is the unit of measure normally used to define the flow capacity of a valve and is defined as -

The volume of water, in U.S. g.p.m., that will flow through the valve, at ambient temperature, with the disc in the degree open position indicated adjacent, giving a pressure drop across the valve of 1 p.s.i.

Kv is the metric version for flow rates, in cubic metres per hour, with a pressure drop of 1 Bar.

The conversion from Cv to Kv is $C_v \times 0.856$.

MANUAL OPERATOR DIMENSIONS

Size		Gear Operator						Lever		
mm	Model	A	B	C	D	E	F	G	H	L
50	GO1	74	52	45	52	153	150	39	36	267
65	GO1	74	52	45	52	153	150	39	36	267
80	GO1	74	52	45	52	153	150	39	36	267
100	GO2	74	52	45	52	153	150	39	36	267
125	GO3	74	52	45	52	153	150	39	36	267
150	GO3	74	52	45	52	153	150	39	36	267
200	GO4	101	75	63	75	250	300	43	43	353
250	GO5	101	75	63	75	250	300	43	43	353
300	GO6	118	81	80	81	250	300	38	45	353
350	GO6	118	81	80	81	250	300	38	45	-
400+						Refer				

SEATING TORQUES - for actuator sizing - (Nm)

Max.Wp (Bar)	PN5		PN10		PN16	
	WET	DRY	WET	DRY	WET	DRY
Service						
Size mm						
50	15	21	18	25	20	26
65	22	30	29	41	32	45
80	31	43	37	52	41	58
100	41	57	60	84	66	93
125	58	81	92	129	101	142
150	81	113	135	189	148	207
200	139	194	220	308	242	339
250	154	215	350	490	386	540
300	245	343	539	754	551	771
350	397	555	595	883	706	987
400	617	864	925	1296	1090	1526
450	925	1296	1388	1942	1640	2296
500	1131	1583	1697	2375	1964	2749
600	2056	2673	3085	4319	3558	4980

The above torques are based on the maximum pressure differentials listed for the services as noted, using standard discs, at ambient temperatures. Torque figures have reasonable safety factors for normal service, but for severe or special applications consult OneSteel.

VALVE SIZING CO-EFFICIENTS (Cv VALUES)

DISC OPENING	Degrees									
	Size mm	10	20	30	40	50	60	70	80	90
50	2	8	17	28	46	72	125	179	200	
65	3.1	10	22	47	72	120	185	270	300	
80	3.9	17	36	65	100	158	274	410	500	
100	7	30	61	108	178	265	410	712	800	
125	11	46	99	181	282	445	710	1097	1250	
150	19	64	140	252	396	620	1090	1590	1800	
200	28	118	260	460	710	1140	1780	2750	3100	
250	43	190	420	715	1130	1820	2900	4200	5000	
300	59	280	600	1100	1780	2800	4100	6000	7100	
350	73	338	715	1549	2761	4568	7230	10844	11917	
400	95	464	983	2130	3797	6282	9942	14913	16388	
450	123	615	1302	2822	5028	8320	13168	19752	21705	
500	145	791	1674	3628	6465	10698	16931	25396	27908	
600	218	1222	2587	5605	9989	16528	26157	39236	43116	

TURNFLO Butterfly Valves T5 and T6 Series

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- Pneumatic** – air operated (double acting & spring return), c/w solenoid valves, limit switches, position indicators, modulating controls
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TURNFLO 'TF' Series Pneumatic Actuators A perfect match for T5/T6 series butterfly valves

Valve/Actuator Selection Chart

(Based on valve max. cwp = 16 bar, actuator air pressure = 550 kPa)

To find suggested valve/actuator matchup – use appropriate chart below (double acting or spring return), locate valve size in left hand column and read across until you find a shaded box in that row, look to the top of that column to find the correct actuator. Depending on the valve/actuator combination, you may need a drive adaptor kit, which consists of a special drive adaptor and the necessary bolts to attach the actuator to the valve top flange – The required adaptor can be found next to the valve size, in the same chart. ('D' denotes double 'D' type)

DOUBLE ACTING		TF40D	TF65D	TF100D	TF200D	TF350D	TF600D		
	DRIVE ADAPTOR								
	D/BLE 'D'								
VALVE									
50	BFDA1D	-							
65	BFDA1D	-							
80	BFDA1D	-							
100	BFDA3D		-						
125	BFDA5D			-					
150	BFDA6D				-				
200	BFDA7D					-			
250	BFDA8D						-		
300	BFDA8D						-		

SPRING RETURN		TF40S	TF65S	TF100S	TF200S	TF350S	TF600S	TF950S	TF1600S
	DRIVE ADAPTOR								
	D/BLE 'D'								
VALVE									
50	BFDA1D	-							
65	BFDA1D		-						
80	BFDA2D			-					
100	BFDA4D			-					
125	BFDA6D				-				
150	BFDA6D					-			
200	BFDA7D						-		
250	BFDA9K							-	
300	BFDA10K								-

For actuation selection for valves above 300nb, please refer to OneSteel.

DRIVE ADAPTOR LEGEND

BFDA 'X' D – Butterfly Drive Adaptor, (x = size), 'D' = double 'D' stem drive



TURNFLO Butterfly Valves T5 and T6 Series

TURNFLO 'TF' SERIES PNEUMATIC ACTUATORS

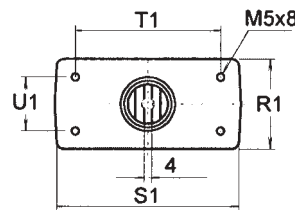
A perfect match for T5/T6 series butterfly valves

FEATURES

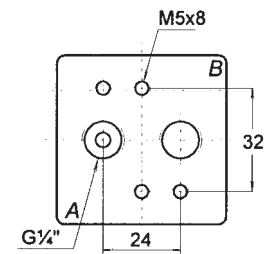
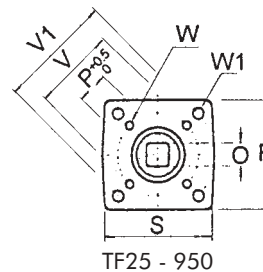
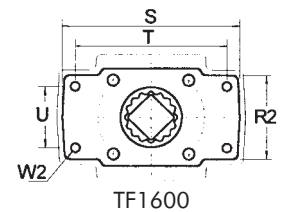
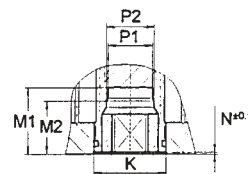
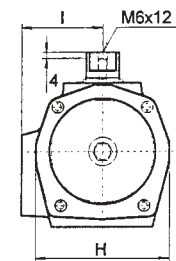
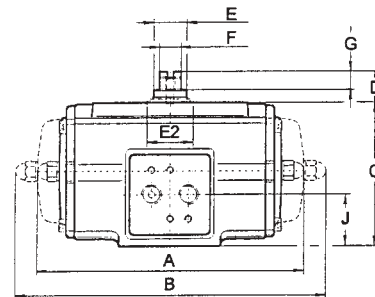
- Compact rack & pinion design
- Available in double acting and spring return
- Manufactured from high grade aluminium alloy, polyurethane coated, for maximum corrosion resistance
- Drive and base mount in accordance with ISO 5211
- Patented 3-point piston support system ensures high cycle life
- Air connections and accessory mounts to NAMUR std.
- Wide choice of 'bolt on' accessories such as solenoid valves, speed controls, limit switches, positioners, etc.
- Drive inserts allow easy adaptation without the need for brackets



Dim. in mm	TF25	TF40	TF65	TF100	TF200	TF350	TF600	TF950	TF1600
A ED	159	180	199	221	283	305	387	424	516
B ES	172	204	249	267	360	387	477	517	637
C	80	93	105	118	143	181	220	259	297
D	20	20	20	20	20	20	30	30	30
E	16	22	22	22	36	36	55	55	64
E2	23	30	30	30	45	45	65	65	75
F	10	14	14	14	19	19	36	36	36
G	12	12	12	12	12	12	10	10	10
H	74	86	98	108	128	173	207	231	265
I	46	53	57.5	63	73	94.3	113	126	142
J	32	33.5	39.1	40.5	50.5	72.4	84.5	105.5	120.5
K	24	33	33	38	55	55	68	75	95
M1	34.5	34.5	34.5	34.5	50	50	52	64	82
M2	-	-	-	27	37	37	-	-	-
N	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5
O max.	11.11	14.11	14.11	19.13	22.13	27.13	27.13	36.16	46.16
O min.	11.00	14.00	14.00	19.00	22.00	27.00	27.00	36.00	46.00
P	14.1	18.1	18.1	25.2	28.2	36.2	36.2	48.2	60.2
P1	14.1	18.1	21.1	23.1	32.1	32.1	36.5	48.5	60.5
P2	-	-	-	25.2	36.2	36.2	-	-	-
R	52	65	70	70	90	114	124	130	154
R1	50	50	50	60	60	60	90	90	125
R2	-	-	-	-	-	-	-	-	132
S	52	65	70	70	90	114	124	142	280
S1	100	100	100	100	100	100	170	170	210
T	-	-	-	-	-	-	-	-	234.6
T1	80	80	80	80	80	80	130	130	130
U	-	-	-	-	-	-	-	-	97.2
U1	30	30	30	30	30	30	30	30	30
V	36	50	50	50	70	70	102	102	165
V1	50	70	70	70	102	102	125	140	-
W	M5 x 8	M6 x 10	M6 x 10	M6 x 10	M8 x 13	M8 x 13	M10 x 16	M10 x 16	M20 x 30
W1	M6 x 10	M8 x 13	M8 x 13	M8 x 13	M10 x 16	M10 x 16	M12 x 20	M16 x 25	-
W2	-	-	-	-	-	-	-	-	M16 x 25



Refer to OneSteel for additional technical information on valves, actuators, solenoid valves, limit switches and other accessories.



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www.OneSteel.com



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Perth	1 Howson Way, Spearwood WA	08 9494 0989
Sydney	49 Elizabeth Street, Wetherill Park NSW	02 8788 5810

www.OneSteelBuildingServices.com

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