

CAST STEEL GATE & GLOBE STEM CHARACTERISTICS

Stem Data Terms

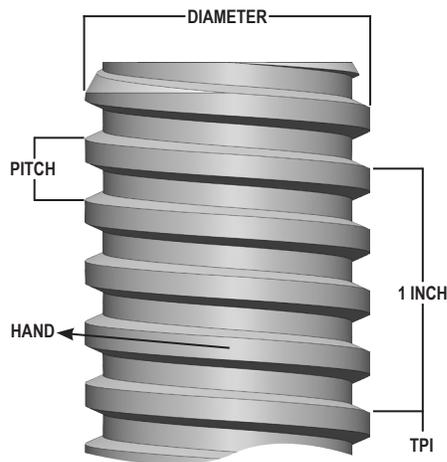
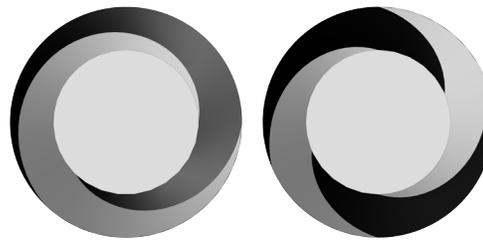


DIAGRAM A

DIAMETER: Cross section width of the stem from the outer edges of the thread

PITCH: The distance from a point on the stem thread to the corresponding point of the next thread

TPI: The number of threads crossed per inch of stem



Single Lead

Double Lead

DIAGRAM B

LEAD: Lead can be expressed in two ways:

1. The number of starts as seen from the top of the stem (indicated in black in DIAGRAM B). It is the number of independent interwoven threads running down the stem.
2. Also expressed in inches, lead is the distance the stem travel linearly with one complete turn of the stem nut (i.e. - a single lead is the same as the pitch, a 2 lead stem is twice the pitch, etc.).

HAND: Determines whether the threads are machined clockwise or counterclockwise. Left and right hand threads are determined looking at the stem profile. If the threads slant upward to the left (like DIAGRAM A), they are left hand threads. If they slant upward to the right, they are right hand threads.

THRUST: The amount of linear force needed to move the stem up or down assuming the valve stem nut is removed

TORQUE: The amount of rotary force needed at the stem to open and close the valve (rotary force is converted to linear force by the mechanics of the stem and stem nut)

LIFT: The overall travel of the stem between the valve's open and close position

TURNS: The overall number of turns needed at the hand wheel to fully open or close the valve (our values are rounded to the nearest whole number)

Note on actuation: When sizing actuators for valves, always include an engineering safety factor that is appropriate to the application. The values provided here are from factory testing in ideal situations. Contact FNW if you require assistance. **All FNW cast steel gate and globe stems are left hand threads.**

Gate Valve - 150# - Figure 451 & 551

Valve Size (inch)	Stem Diameter (inch)	Threads Per Inch (TPI)	Pitch (inch)	Lead (Starts)	Stem Thrust (lbs)	Stem Torque (lbs-ft)	Lift (inch)	Number of Turns
2	3/4	6ACME	0.167	1	877	10	2.22	13
2-1/2	3/4	6ACME	0.167	1	922	10	2.74	16
3	7/8	6ACME	0.167	1	1,102	12	3.23	19
4	1	5ACME	0.200	1	1,664	20	4.25	22
5	1-1/8	5ACME	0.200	1	2,743	24	5.31	27
6	1-1/8	5ACME	0.200	1	3,642	27	6.22	32
8	1-1/4	5ACME	0.200	1	6,587	47	8.31	42
10	1-3/8	4ACME	0.250	1	8,161	62	10.33	42
12	1-1/2	4ACME	0.250	1	12,320	97	12.36	50
14	1-5/8	4ACME	0.250	2	19,199	149	10.47	58
16	1-3/4	4ACME	0.250	2	24,842	252	16.46	33
18	1 7/8	4ACME	0.250	2	31,384	374	18.62	38
20	2	4ACME	0.250	2	39,679	414	20.39	41
24	2-1/4	3ACME	0.335	2	56,832	717	32.60	38
30	2-1/2	3ACME	0.335	2	88,440	1,256	30.75	47
36	3	3ACME	0.500	2	121,982	2,158	36.10	37

CAST STEEL GATE & GLOBE STEM CHARACTERISTICS

Gate Valve - 300# - Figure 452 & 552

Valve Size (inch)	Stem Diameter (inch)	Threads Per Inch (TPI)	Pitch (inch)	Lead (Starts)	Stem Thrust (lbs)	Stem Torque (lbs-ft)	Lift (inch)	Number of Turns
2	3/4	6ACME	0.167	1	1,012	12	2.22	13
2-1/2	3/4	6ACME	0.167	1	1,259	14	2.74	16
3	7/8	6ACME	0.167	1	1,754	16	3.23	19
4	1	5ACME	0.200	1	3,642	31	4.25	22
6	1-1/4	5ACME	0.200	1	8,903	64	6.26	32
8	1-3/8	4ACME	0.250	1	11,488	95	8.31	34
10	1-1/2	4ACME	0.250	1	18,750	159	10.31	42
12	1-5/8	4ACME	0.250	2	24,392	214	12.32	50
14	1-3/4	4ACME	0.250	2	45,727	373	14.25	29
16	1-7/8	4ACME	0.250	2	59,822	486	16.61	34
18	2	4ACME	0.250	2	75,109	653	18.39	37
20	2-1/8	3ACME	0.335	2	93,274	944	20.39	31
24	2-1/2	3ACME	0.335	2	135,268	1,475	24.33	37
30	2-7/8	3ACME	0.335	2	213,974	2,548	30.59	46

Globe Valve - 150# - Figure 461 & 561

Valve Size (inch)	Stem Diameter (inch)	Threads Per Inch (TPI)	Pitch (inch)	Lead (Starts)	Stem Thrust (lbs)	Stem Torque (lbs-ft)	Lift (inch)	Number of Turns
2	3/4	6ACME	0.167	1	3,035	15	1.02	6
2-1/2	7/8	6ACME	0.167	1	4,317	22	1.65	10
3	1	5ACME	0.200	1	6,587	34	1.30	7
4	1-1/8	5ACME	0.200	1	9,712	50	1.46	8
6	1-1/4	5ACME	0.200	1	17,108	96	2.36	12
8	1-3/8	4ACME	0.250	1	24,033	181	1.93	8
10	1-5/8	4ACME	0.250	1	27,180	347	3.39	11
12	2	4ACME	0.250	1	39,454	635	3.43	10
14	2-3/8	3ACME	0.335	1	47,638	856	3.15	9
16	2-1/2	3ACME	0.335	1	62,048	1,243	3.82	12

Globe Valve - 300# - Figure 462 & 562

Valve Size (inch)	Stem Diameter (inch)	Threads Per Inch (TPI)	Pitch (inch)	Lead (Starts)	Stem Thrust (lbs)	Stem Torque (lbs-ft)	Lift (inch)	Number of Turns
2	3/4	6ACME	0.167	1	4,339	23	0.98	6
2-1/2	7/8	6ACME	0.167	1	6,587	38	1.77	11
3	1	5ACME	0.200	1	10,589	62	1.10	6
4	1-1/8	5ACME	0.200	1	17,221	107	1.38	7
6	1-1/2	4ACME	0.250	1	38,308	236	2.60	10
8	1-7/8	4ACME	0.250	1	55,461	456	1.85	8
10	2	4ACME	0.250	1	66,634	1,070	3.39	11
12	2-3/8	3ACME	0.335	1	95,027	1,708	3.43	10