



AWWA C 504 BUTTERFLY VALVES

PRODUCT FEATURES:

NSF Certified Fusion Bonded Epoxy Coating and EPDM rubber are used for valves to be used for in direct contact with potable (drinking) water, while all other components in contact with water being of Stainless Steel.

Vahn-tech manufactures butterfly valves fully compliant to AWWA C504 standards. We produce this valves with following end connections to suit varying customer needs.

Wafer Type

Sizes: NPS3~NPS20 (DN80~DN500) Pressure Rating: 150 psi / 250 psi

Flanged Ends Type

Size: NPS3~NPS72 (DN80~DN1800) Pressure Rating: 150 psi / 250 psi

We also manufacture valves larger than NPS72 on special requests.

Mechanical Joint End Type

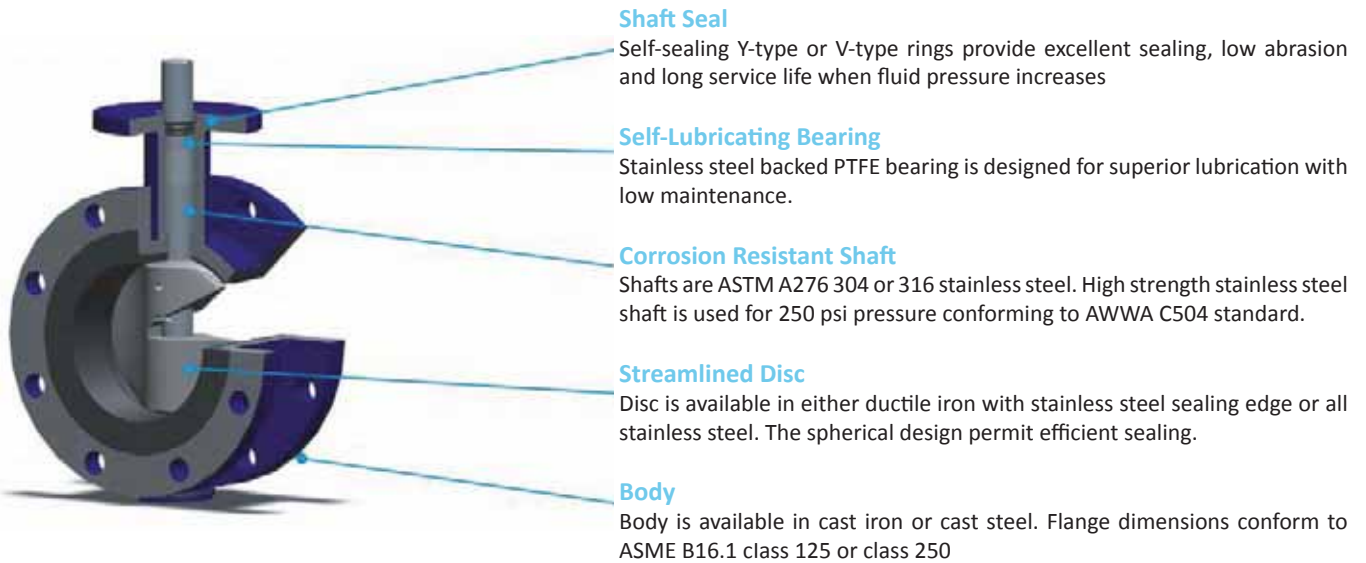
Size: NPS3~NPS48 (DN80~DN1200) Pressure Rating: 150 psi / 250 psi

- * Our products are tested for Life Cycle tests as set down in AWWA C 504 standards. During these tests bi-directional sealing is tested under different pressure conditions.
- * Our products are designed and tested to provide reliable performance during their entire service life.
For Sizes DN 750 and above - The product design allows on-site maintenance and seat replacements option.
- * NSF Certified Fusion Bonded Epoxy Coating and EPDM rubber are used for areas of valves coming in direct contact with potable (drinking) water , all other components being Stainless Steel
- * The entire manufacturing process strictly complies with AWWA C 504 standards requirements.
- * Our products provide high performance, reliable service and long service life.

Specifications and Standards:

1. Connection Flanges: ASME B16.10 Class 125 / AWWA C 111 / A21.11
2. Top Flange: MSS-SP-101/ISO 5211
3. Face to face: AWWA C504
4. Test standard: AWWA C504

3" ~ 24" AWWA Butterfly Valve Design Specifications



Corrosion Resistant Shaft

Shaft is made of ASTM A 276 304 or High strength stainless steel. Upper and Lower pieces of shafts fully comply with the design requirements of AWWA C504 Class 150B.

Shaft Sealing

Self-Sealing Y-type or V-type rings can provide excellent sealing, low abrasion, long service life when fluid pressure increases.

Shaft Connection

Disc-shaft connection is achieved by use of stainless steel pins and self-locking nuts or pin free design, that transmits the required torque and insures strong connection between disc and shaft performing in all conditions without loosening the disc-shaft connection.

Disc

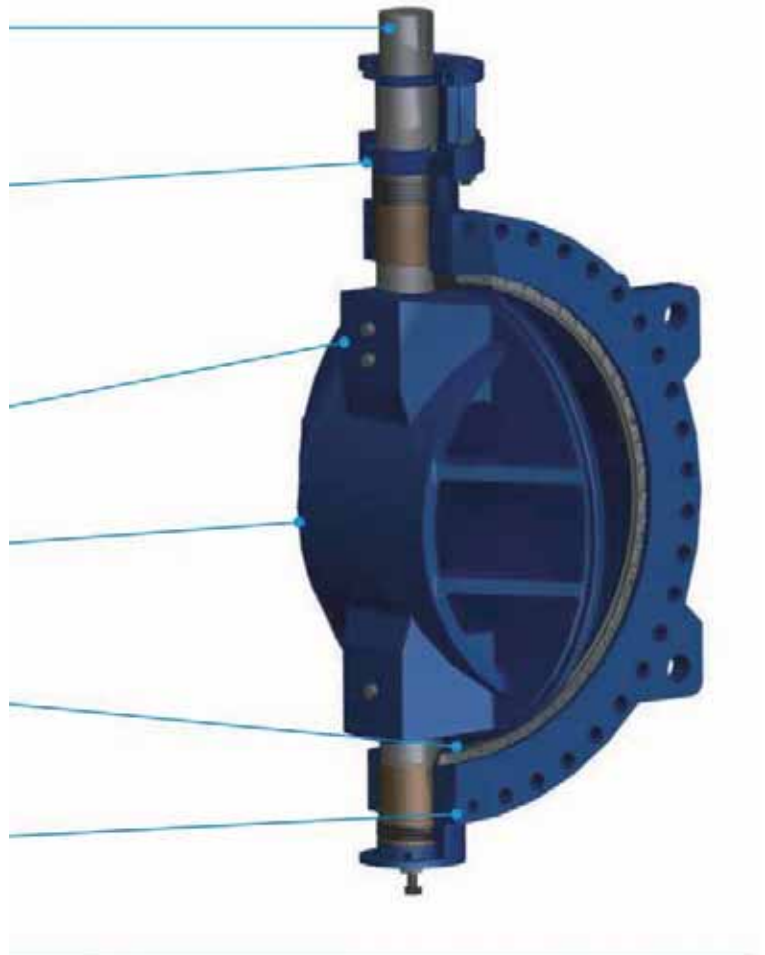
The dome-shaped disc reduces the resistance to the fluid and enhances its strength to be more reliable in service.

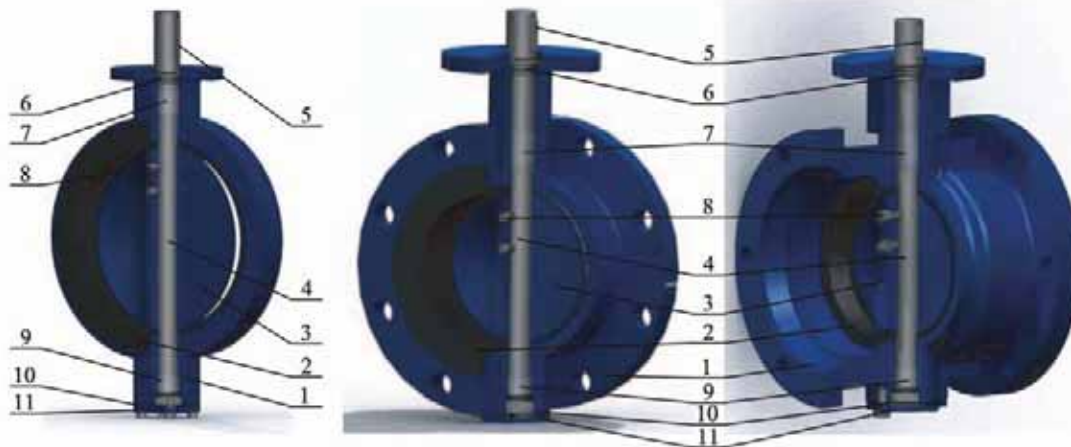
Seat

NSF approved EPDM Rubber is used for seat material for applications requiring contact with Potable (drinking) water. The seat is designed to allow field removal/replacement.

Body

Body is made of ASTM A536 cast iron or cast steel flange dimensions conform to ASME B16.1 Class I25 or Class 250.

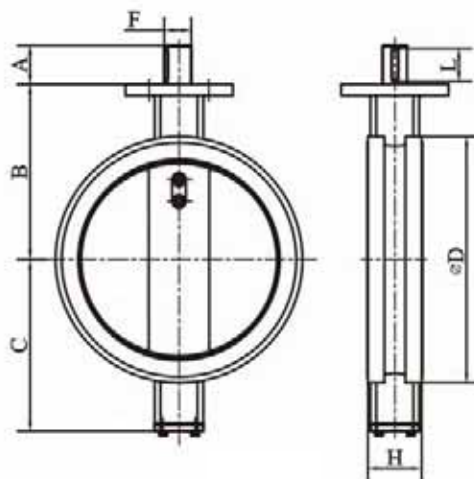




Material List(NPS3~NPS24)

NO.	Name	Material	Optional Material
1	Body	ASTM A536 65-45-12	ASTM A126B, Cast Steel
2	Seat	EPDM	Buna
3	Disc	ASTM A536 65-45-12+SS316	Cast Steel/Alloy Steel+SS316, Stainless Steel
4	Shaft	Stainless Steel	---
5	Key	Carbon Steel	---
6	Combined Ring	Rubber	---
7	Upper Bushing	Stainless Steel+Teflon	---
8	Thread Taper Pin	Stainless Steel	---
9	Lower Bushing	Stainless Steel+Teflon	---
10	Bottom Cover Gasket	Rubber	---
11	Bottom Cover	ASTM A536 65-45-12	ASTM A126B, Cast Steel

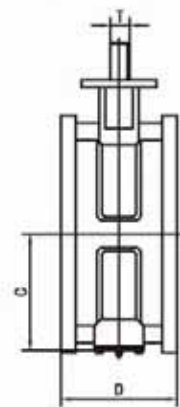
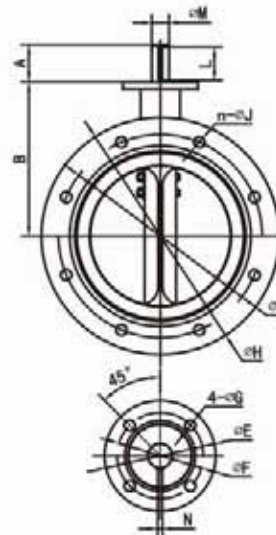
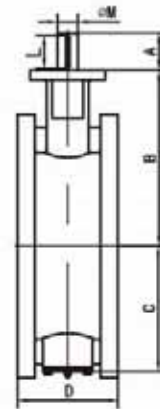
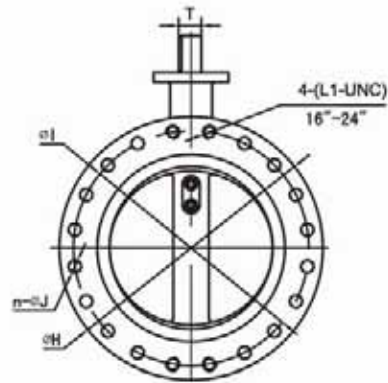
Dimensions(mm)



DN	NPS	A	B	C	H	ΦD	E	F	L	ΦN	ΦK	4-ΦM
80	3	39	120	91	50.8	132	3.18	15.69	32	90	69.9	8.8
100	4	39	140	111	57.2	167	4.78	17.91	32	90	69.9	8.8
150	6	52	165	141	71.4	213	6.35	31.39	40	150.1	125.7	14.3
200	8	52	200	171	74.6	270	6.35	31.39	40	150.1	125.7	14.3
250	10	76	228	233	79.4	326	7.94	38.44	66	150.1	125.7	14.3
300	12	76	268	253	85.7	400	7.94	38.44	66	150.1	125.7	14.3
350	14	76	300	287	96.3	440	9.53	45.5	66	150.1	125.7	14.3
400	16	76	342	335	105	480	12.7	53.11	66	209.6	165.1	20.6
450	18	89	365	350	117	535	12.7	61.19	80	209.6	165.1	20.6
500	20	89	406	385	130	590	12.7	61.19	80	209.6	165.1	20.6

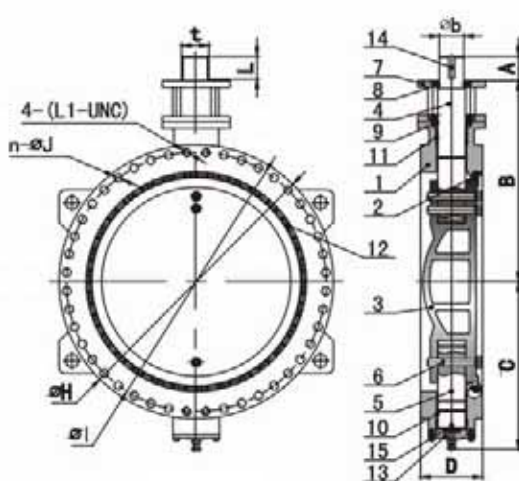


AWWA C 504 Type - Butterfly Valves

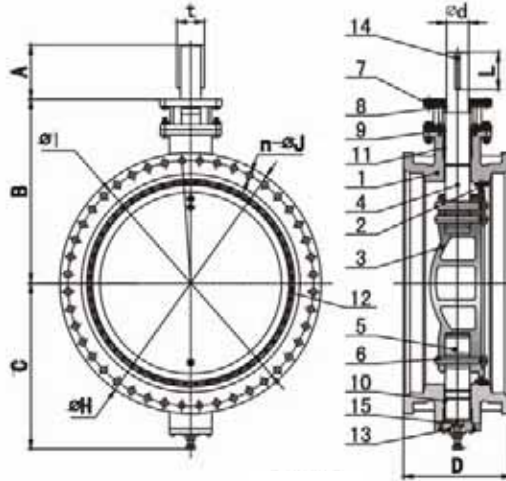


NPS3-NPS24 Dimensions(mm)

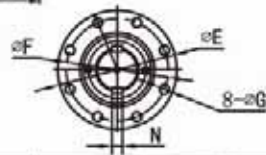
DN	NPS	A	B	C	D		øE	øF	øG	BV5F			BV5MJ			T	L	4-(L1-UNC)	N	M
					BV5F	BV5MJ				øH	n-øJ	øI	øH	n-øJ	øI					
80	3	39	159	90	127	216	90	69.9	8.8	190	4-ø19.05	152	195.3	4-ø19.05	157.2	15.7	32	---	3.18	14.3
100	4	39	178	101	127	216	90	69.9	8.8	230	8-ø19.05	191	231.6	4-ø22.23	190.5	17.89	32	---	4.76	15.9
150	6	52	203	149	127	216	150.1	125.7	14.3	260	8-ø22.23	241	282.4	6-ø22.23	241.3	31.39	40	---	6.35	28.6
200	8	52	242	159	152	219	150.1	125.7	14.3	345	8-ø22.23	299	339.6	6-ø22.23	298.5	31.39	40	---	6.35	28.6
250	10	76	274	195	203	235	150.1	125.7	14.3	405	12-ø25.4	362	398.5	8-ø22.23	355.6	38.44	66	---	7.94	34.9
300	12	76	313	231	203	235	150.1	125.7	14.3	485	12-ø25.4	432	455.7	8-ø22.23	412.8	38.44	66	---	7.94	34.9
350	14	76	356	261	203	292	150.1	125.7	14.3	535	12-ø28.58	476	515.9	10-ø22.23	476.3	45.47	66	---	9.53	41.3
400	16	76	382	288	203	305	209.6	165.1	20.6	595	12-ø28.58	540	573	12-ø22.23	533.4	53.11	66	4-(1-8UNC)	12.7	47.6
450	18	89	420	330	203	311	209.6	165.1	20.6	635	12-ø31.75	578	630.7	12-ø22.23	590.6	61.19	80	4-(1/2-7UNC)	12.7	57.2
500	20	89	459	382	203	318	209.6	165.1	20.6	700	16-ø31.75	635	687.8	14-ø22.23	647.7	61.19	80	4-(1/2-7UNC)	12.7	57.2
600	24	89	572	421.4	203	337	209.6	165.1	20.6	815	16-ø34.93	749	802.1	16-ø22.23	782	61.19	80	4-(1/2-7UNC)	12.7	57.2



Model VT-BV5F (Flanged Ends Type)



Model VT-BV5MJ (Mechanical Joint Type)



Material List

NO.	Name	Material	Optional Material
1	Body	ASTM A536 65-45-12	ASTM A126B, Cast Steel
2	Seat	EPDM	Buna
3	Disc	ASTM A536 65-45-12+SS316	Cast Steel/Alloy Steel+SS316, Stainless Steel
4	Upper Shaft	Stainless Steel	
5	Lower Shaft	Stainless Steel	
6	Taper Pin	Stainless Steel	
7	Yoke	ASTM A536 65-45-12	ASTM A126B, Cast Steel
8	Cover	ASTM A536 65-45-12	ASTM A126B, Cast Steel
9	Gland Cover	ASTM A536 65-45-12	ASTM A126B, Cast Steel
10	Bushing	Lubricated Copper	
11	Combined Ring	Rubber	
12	Retained Plate	Stainless Steel	
13	Bottom Cover	ASTM A536 65-45-12	ASTM A126B, Cast Steel
14	Key	Carbon Steel	
15	Antifriction Ring	ASTM A536 65-45-12	ASTM A126B



Dimension(mm)

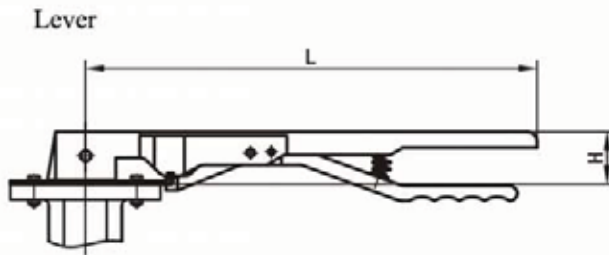
DN	NPS	A	B	C	D		eE	eF	eG	ed	BV5F			BV5MJ			L	t	N	4-(L1-UNC)
					eH	n-eJ					oI	eH	n-eJ	oI						
750	30	110	781	622	305	457.2	300	254	18	70	985	24-ø35	914	994	20-ø28.6	936.8	95	79	20	4-(1½-7UNC)
900	36	150	850	727.5	305	558.8	350	298	23	95	1170	28-ø41	1086	1168	24-ø28.6	1111.3	140	107	28	4-(1½-6UNC)
1050	42	170	980	860	305	558.8	350	298	23	92	1345	32-ø41	1257	1349	28-ø35	1285.7	160	112	25	4-(1½-6UNC)
1200	48	170	1101	960	381	609.6	350	298	23	110	1510	40-ø41	1422	1524	32-ø35	1480.5	160	124	32	4-(1½-6UNC)
1350	54	150	1235	1040	381	—	415	356	33	150	1685	40-ø51	1594	—	—	—	140	166	36	4-(1½-5UNC)
1500	60	315	1095	1215	381	—	475	406	39	140	1855	48-ø51	1759	—	—	—	280	156	36	4-(1½-5UNC)
1650	66	320	1136	1320	457	—	475	406	39	170	2032	48-ø51	1930	—	—	—	300	206.5	44.5	4-(1½-5UNC)
1800	72	340	1230	1490	457	—	475	406	39	188	2195	56-ø51	2096	—	—	—	320	208	45	4-(1½-5UNC)

CV Value

DN	80	100	150	200	250	300	350	400	450	500	600
NPS	3	4	6	8	10	12	14	16	18	20	24
Cv	291	379	1072	2362	4367	6699	9574	13356	16898	21421	27889

Torque Value

DN	80	100	150	200	250	300	350	400	450	500	600
NPS	3	4	6	8	10	12	14	16	18	20	24
150B (N.m)	20	35	75	150	220	550	670	820	1375	1890	2850
250B (N.m)	53	65	150	275	502	913	1070	1473	1916	2591	3852



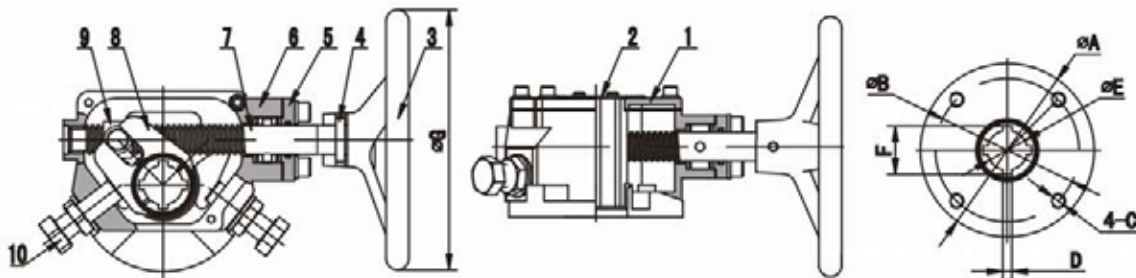
Lever Dimensions(mm)

Valve Size		H	L
DN	NPS		
80~100	3~4	40	260
150~200	6~8	52	450

The Hand Lever is designed to be lightweight, compact and easy to operate to provide a long term reliable performance. Hand Lever is made of Epoxy Coated Ductile Iron. The angle plate is made up of Chromium Plates Steel with 10 position notches.

AWWA C 504 design based travelling nut gear operator can be mounted on all valves sizes both for above and underground service. For Gear Box to be used above ground, a hand wheel and visual position indicator can be provided. Chainwheel with 2" Square Nut is also available as an option. Standard gear box for underground use is filled with 90% grease in the housing chamber & is also equipped with 2" Square Nut.

Traveling Nut Operator



Material List

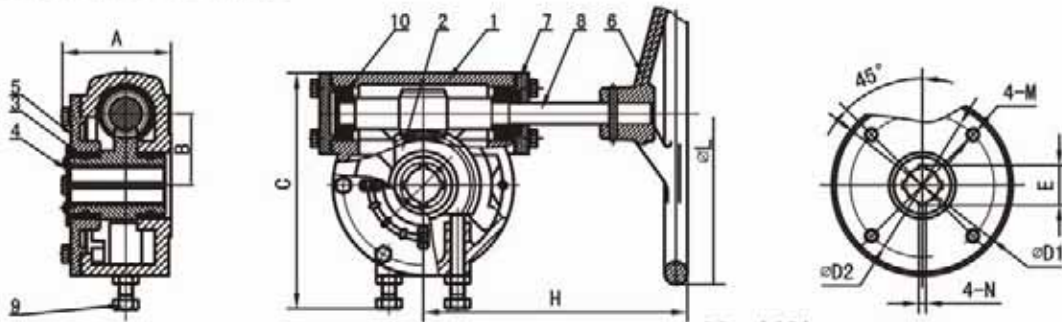
NO.	Name	Material
1	Cover	ASTM A536 65-45-12
2	Indicator	ASTM A283
3	Handwheel	ASTM A536 65-45-12
4	Pin	Carbon Steel
5	End Cover	ASTM A536 65-45-12
6	Housing	ASTM A536 65-45-12
7	Stem	Carbon Steel
8	Lever	ASTM A536 65-45-12
9	Nut	Copper Alloy
10	Bolt	Carbon Steel

Dimensions (mm)

Size		Model	A	B	C	D	E	F	ØG
DN	NPS								
150	6	60:1	152	125.7	½-13UNC	6.35	28.6	34.44	308
200	8	60:1	152	125.7	½-13UNC	6.35	28.6	34.44	308
250	10	60:1	152	125.7	½-13UNC	7.94	34.93	42.18	308
300	12	80:1	152	125.7	½-13UNC	7.94	34.93	42.18	308
350	14	80:1	152	125.7	½-13UNC	9.54	41.28	50	308
400	16	140:1	205	165	¾-10UNC	12.7	47.63	58.85	700
450	18	140:1	205	165	¾-10UNC	12.7	57.15	65.48	700
500	20	140:1	205	165	¾-10UNC	12.7	57.15	65.48	700
600	24	140:1	205	165	¾-10UNC	12.7	57.15	65.48	700



NPS3-NPS14 Worm Gear Operator



Material List

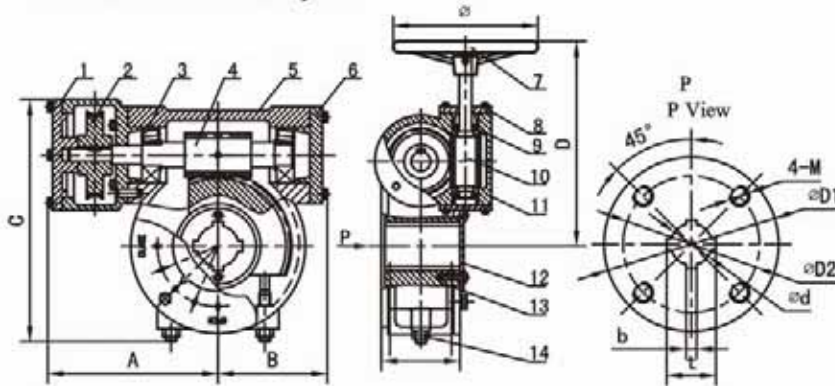
Dimensions(mm)

Size		A	B	C	∅D1	∅D2	H	∅L	E	4-N	4-M	Ratio	MAX Output Torque (N.m)
DN	NPS												
80	3	95	63	206	90	69.9	231	300	17.37	4-3.18	4- (3/8-18UNC)	30:1	500
100	4	95	63	206	90	69.9	231	300	20.12	4-4.76	4- (3/8-18UNC)	30:1	500
150	6	95	63	206	152	125.7	231	300	34.44	4-6.35	4- (1/2-13UNC)	30:1	500
200	8	95	63	206	152	125.7	231	300	34.44	4-6.35	4- (1/2-13UNC)	30:1	500
250	10	93.5	80	230.5	152	125.7	234	300	42.18	4-7.94	4- (1/2-13UNC)	50:1	800
300	12	93.5	80	230.5	152	125.7	234	300	42.18	4-7.94	4- (1/2-13UNC)	50:1	800
350	14	93.5	80	230.5	152	125.7	234	300	49.96	4-9.53	4- (1/2-13UNC)	50:1	800

NO.	Name	Material
1	Housing	Ductile Iron
2	Worm Gear	Ductile Iron/Bronze
3	Bushing	Bronze
4	Indicator	Carbon Steel
5	Cover	Ductile Iron
6	Handwheel	Ductile Iron
7	End Cover	Ductile Iron
8	Worm Gear Shaft	Carbon Steel
9	Bolt	Carbon Steel
10	Combined Bushing	

Material List

NPS16-NPS24 NPS16-NPS24 Worm Gear Operator



Dimensions(mm)

Size		Model	A	B	C	D	H	∅	∅d	b	t	∅D2	∅D1	4-M	Ratio	MAX Out Put Torque(N.m)
DN	NPS															
400	16	3D-30/250	235	121	295	260	125	300	47.63	9.53	52.13	165	203	4- (3/4-10UNC)	192:1	2500
450	18	3D-30/250	235	121	295	260	125	300	57.15	12.7	61.6	165	203	4- (3/4-10UNC)	192:1	2500
500	20	3D-30/400	235	121	295	280	125	300	57.15	12.7	61.6	165	203	4- (3/4-10UNC)	192:1	4000
600	24	3D-30/400	235	121	295	280	125	300	57.15	19	63.3	165	203	4- (3/4-10UNC)	192:1	4000

NO.	Name	Material
1	Small Cover	Ductile Iron
2	Small Worm Gear	Ductile Iron
3	Bearing	
4	Big Worm Gear Shaft	Carbon Steel
5	Big Housing	Ductile Iron
6	Big End Cover	Ductile Iron
7	Handwheel	Ductile Iron
8	Small End Cover	Ductile Iron
9	Bearing	
10	Small Worm Gear Shaft	Carbon Steel
11	Small Cover	Ductile Iron
12	Indicator	Carbon Steel
13	Big Worm Gear	Copper Alloy Ductile Iron
14	Bolt	Carbon Steel