

### Manual Quarter Turn Worm Gear Operators

The 311 range has been designed keeping in mind the needs of durability and performance. To ensure stringent quality standards and testing norms.

#### Application

The 311 series quarter turn worm gearboxes are used to operate Ball valve, Butterfly valve, Plug valve and Dampers.

### Features & Benefits

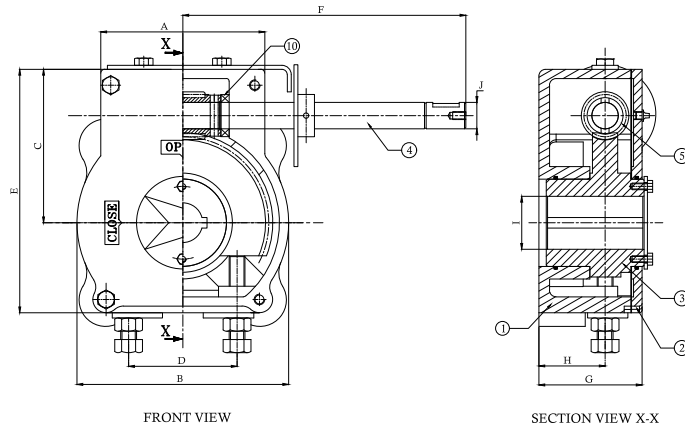
- Cast Iron Housing & Cover
- Comprehensive gear ratios with spur input reduction section
- High performance axial bearing
- Powder coated hand wheel for easy and smooth operation
- Temperature range -30°C to 120°C
- Light weight with rugged design
- Maintenance Free
- Environmental friendly high performance grease

### Optional

- Chain wheel operation
- Vertical operation with bevel gear attachment
- Housing materials - Carbon steel, Stainless steel, Ductile Iron
- Submersibility to IP67
- Worm wheel - Al bronze
- Stainless steel - Input shaft, wheel & enclosed screws
- Namur mounting
- Pad lockable flange

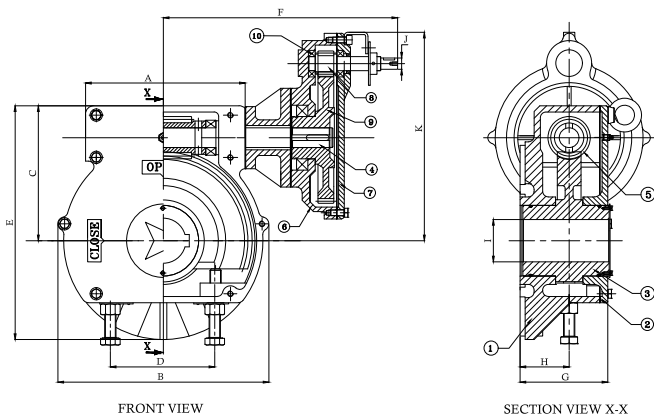
## Dimensional Specifications

**FIG (1)**



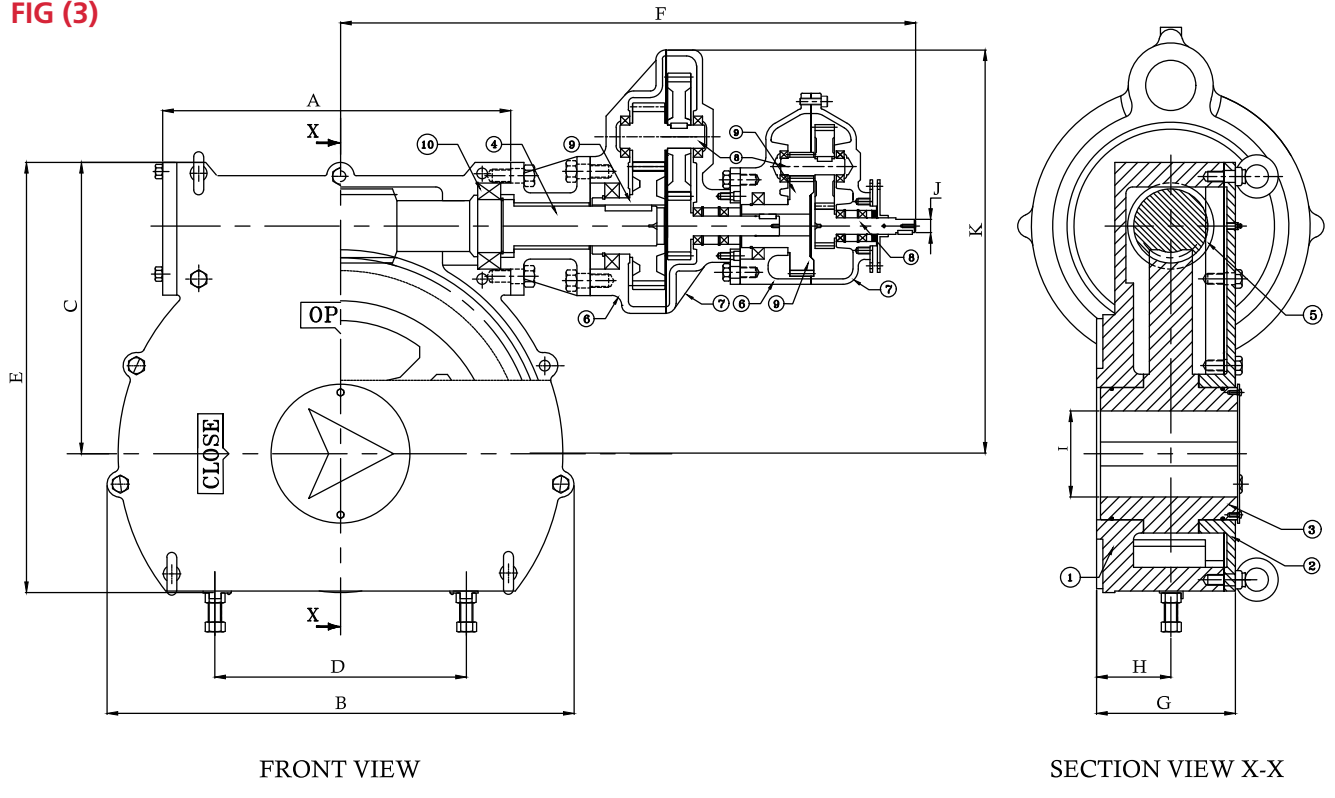
Sr. No.	Model	A	B	C	D	E	F	G	H	I	J
1	QTA-150	72	72	54	42	81	111	55	34.25	20	12
2	QTA-250	90	90	66	48	111	161.5	51	31.5	22	12
3	QTA-500	110	110	81	64	121	153	59	33.3	35	15
4	QTA-750	116	116	91	68	135	161.5	63.5	36	35	20
5	QTA-1000	116	160	106	84	166	218.5	80	48	45	20
6	QTA-1250	124	160	116	82	200	214	78	50	45	20
7	QTA-1500	139	191	130	91	203	214	87.5	55	50	20
8	QTA-2000	171	197	135	108	212	251	90.5	54	70	20
9	QTA-3000	164	218	151.5	110	231.5	255	89.5	54.5	70	20
10	QTA-3750	185	300	171	150	261	255.5	107.5	60	70	20
11	QTA-4000	213	300	195	150	337	250	118.5	70.5	85	20
12	QTA-4500	213	300	195	150	337	250	118.5	70.5	85	20

**FIG (2)**



Sr. No.	Model	A	B	C	D	E	F	G	H	I	J	K
13	QTA-5500 / SR1	213	300	195	150	337	300	118.5	70.5	85	20	247
14	QTA-6000 / SR1	213	300	195	150	337	300	118.5	70.5	85	20	247
15	QTA-7000 / SR2	253.5	350	202	146	377	304	146.5	91.5	95	20	261
16	QTA-8500 / SR2	257	304	219	170	368	285.5	146.5	89.5	95	20	269
17	QTA-10000 / SR2	267	334	237	170	346	307	153	96.5	95	20	284
18	QTA-13000 / SR3	283	374	239	185	414	415	155.5	87	95	20	365
19	QTA-16000 / SR3	305	410	267.5	234	442.5	428	158.5	96	110	20	387
20	QTA-18500 / SR3	305	410	267.5	234	442.5	429	162	95	110	20	396
21	QTA-20000 / SR3	347	462	294	230	469	443.5	171	99	110	20	416
22	QTA-22000 / SR3	347	462	294	230	469	443.5	171	99	145	20	416
23	QTA-25000 / SR3	371	526	329.5	280	504	458	187	112.5	130	20	447
24	QTA-31000 / SR3	373	526	329.5	280	504.5	458	187	112.5	130	20	458
25	QTA-35000 / SR5	424	604	399	360	606	616	207	112.5	150	30	582
26	QTA-42000 / SR5	420	604	399	360	606	616	207	112.5	150	30	582
27	QTA-50000 / SR5	504	672	450	380	690	690	210	112.5	150	30	610

**FIG (3)**



Sr. No.	Model	A	B	C	D	E	F	G	H	I	J	K
28	QTA-65000 / SR4 / SR5	522	706	455	380	663	828.5	225	126.5	200	30	614
29	QTA-85000 / SR7 / SR8	643	726	503	370	728	966	297	160	200	40	840
30	QTA-0.1M / SR7 / SR8	643	726	503	370	728	966	297	160	200	40	840
31	QTA-0.15M / SR9 / SR10	750	960	614	540	890	864	310	150	250	40	835

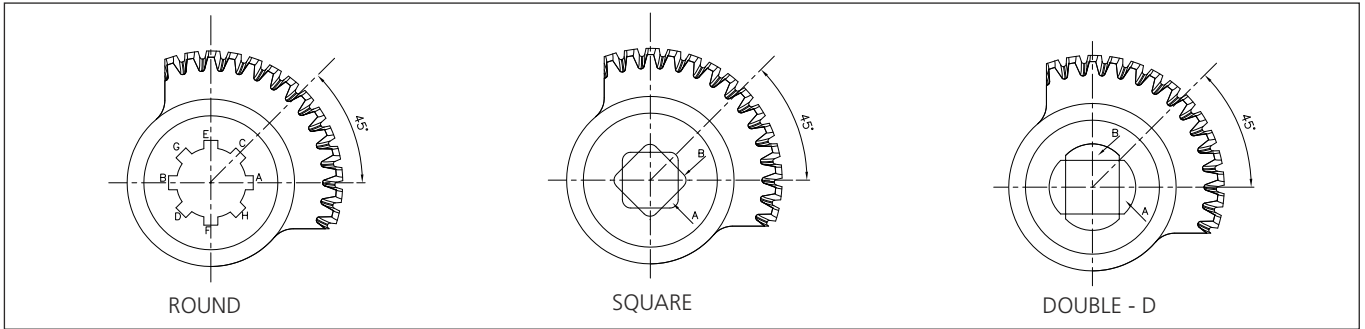
### Material Specifications

Sr. No	Job Description	Material Description	Standards
1	Housing	Cast Iron-FG 220	IS 210 / ASTM A48 35B / 40B / GG-20
2	Cover	Cast Iron-FG 220	IS 210 / ASTM A48 35B / 40B / GG-20
3	Worm Wheel	SG Iron-500/7	IS 1865 / ASTM A536 80-55-06 / GGG-50
4	Input Shaft	En8 / En19	45C8 / SAE 1040 / CK45 / C55 / SAE-4140 / 42CrMo4 / ASTM A-29 / A-29M
5	Worm	En8 / 20MnCr5	45C8 / SAE 1040 / CK45 / 20MnCr1
6	Spur Housing	Cast Iron-FG 220	IS 210 / ASTM A48 35B / 40B / GG-20
7	Spur Cover	Cast Iron-FG 220	IS 210 / ASTM A48 35B / 40B / GG-20
8	Spur Pinion	En19	C55 / SAE 4140 / 42CrMo4 / ASTM A-29 / A-29M
9	Spur Gear	En19	C55 / SAE 4140 / 42CrMo4 / ASTM A-29 / A-29M
		SG Iron-500/7	IS 1865 / ASTM A536 80-55-06 / GGG-50
10	Bearing	Standard	----

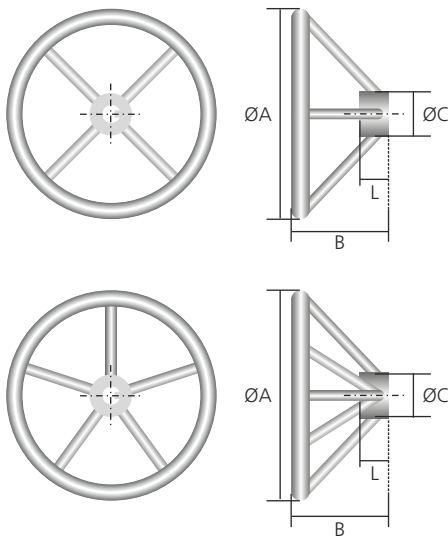
## Manual Gear Box Selection Data

Sr. No.	Model	Output Torque Nm / Ft-lbs	Mechanical Advantage ±10%	Gear Ratio	Turns to Close	Valve Mounting Flange ISO-5211	Max Stem Acceptance Dia (mm)	Approx. unit weight (Kgs)	Recommended Hand Wheel Dia (mm)
1	QTA-150	150 / 110.6	8	36:1	9	F-04, F-05, F-07	20	2.2	110
2	QTA-250	250 / 184.39	9.79	42:1	10.5	F-05, F-07	22	2.75	200
3	QTA-500	500 / 368.78	9.78	40:1	10	F-07, F-10	35	4.5	300
4	QTA-750	750 / 553.17	11.5	46:1	11.5	F-07, F-10, F-12	35	5.6	400
5	QTA-1000	1000 / 737.56	12	44:1	11	F10, F-12, F-14	45	10	450
6	QTA-1250	1250 / 922	14	65:1	16.25	F-10, F-12, F-14, F-16	45	12	500
7	QTA-1500	1500 / 1106	16	62:1	15.5	F-10, F-12, F-14, F-16	50	16	500
8	QTA-2000	2000 / 1475	18	67:1	16.75	F-10, F-12, F-14 F-16, PCD-203, F-25	70	17	600
9	QTA-3000	3000 / 2212.7	18	62:1	15.5	F-10, F-12, F-14, F-16.	70	18	700
10	QTA-3750	3750 / 2765.8	22	80:1	20	F-14, F-16, F-25	70	31.5	700
11	QTA-4000	4000 / 2950.3	22	87:1	21.75	F16, F-25	85	40	700
12	QTA-4500	4500 / 3318.7	24	87:1	21.75	F16, F-25	85	42	750
13	QTA-5500 / SR1	5500 / 4056.5	50	220.5:1	55	F-16, F-25	85	53	550
14	QTA-6000 / SR1	6000 / 4425	60	195.3:1	49	F-16, F-25	85	55	550
15	QTA-7000 / SR2	7000 / 5163	60	281.6:1	70.4	F-16, F-25, F-30	95	70	600
16	QTA-8500 / SR2	8500 / 6269.3	73	286:1	71.5	F-16, F-25, F-30	95	74	600
17	QTA-10000 / SR2	10000 / 7375.6	76	308:1	77	F-25, F-30	95	79	600
18	QTA-13000 / SR3	13000 / 9588.3	82	360:1	90	F-25, F-30	95	110	700
19	QTA-16000 / SR3	16000 / 11800	105	360:1	90	F-25, F-30	110	127	700
20	QTA-18500 / SR3	18500 / 13644	110	378:1	94.5	F-25, F-30	110	129	700
21	QTA-20000 / SR3	20000 / 14751	115	360:1	90	F-25, F-30	110	146	750
22	QTA-22000 / SR3	22000 / 16226	115	360:1	90	F-25, F-30	145	149	750
23	QTA-25000 / SR3	25000 / 18439	125	408:1	102	F-25, F-30	130	175	800
24	QTA-31000 / SR3	31000 / 22864	129	372:1	93	F-25, F-30	130	179	850
25	QTA-35000 / SR5	35000 / 25814	190	608:1	152	F-25, F-30, F-35	150	290	850
26	QTA-42000 / SR5	42000 / 30975	266	1216:1	304	F-25, F-30, F-35	150	292	850
27	QTA-50000 / SR5	50000 / 36875	289	1184:1	296	F-30, F-35, F40	150	386	850
28	QTA-65000 / SR4 / SR5	65000 / 47937.5	355	1456:1	364	F-35, F-40, F-48	200	490	900
29	QTA-85000 / SR7 / SR8	85000 / 62687.5	450	1736:1	434	F-40, F-48	200	940	900
30	QTA-0.1M / SR7 / SR8	100000 / 73750	550	1911:1	478	F-40, F-48	200	950	900
31	QTA-0.15M / SR9 / SR10	150000 / 110625	810	3210:1	802.5	F-40, F-48	250	1050	1000

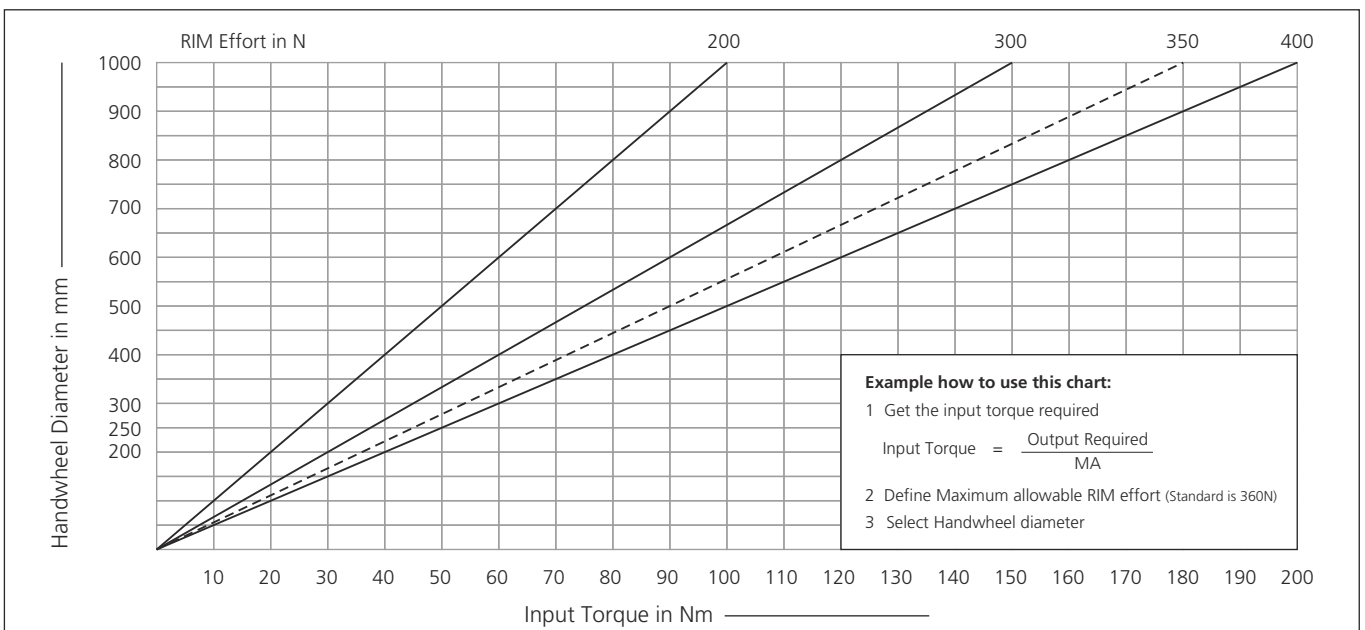
## Standard Stem Shape and Orientation as seen from top view worm wheel at close position



## Handwheel Specification: with Keyway / with Hole (Pin)



Sr. No	Handwheel Dia-A	Height B	Bush OD Dia-C	Bush Length-L	No. of Spokes
1	110	52.5	25	20	3
2	200	80	25	25	4
3	250	80	30	25	4
4	300	75	40	30	4
5	350	100	30	25	4
6	400	130	50	30	4
7	450	145	50	30	4
8	500	110	65	30	4
9	550	120	65	30	4
10	600	130	65	30	5
11	650	140	65	30	5
12	700	150	65	30	5
13	750	160	65	30	5
14	800	160	65	30	5
15	850	160	65	30	5
16	900	160	65	30	5
17	1000	165	65	50	5





**Note # All gearboxes are supplied with installation, maintenance, handling and storage manual. Doc Ref # PUB-BU/QTa-1/101 EN**

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**Works :** Gat No # 1083/1B, Markal, Tal. - Khed, Pune - 412 105. Maharashtra, INDIA.  
• cellular # +91 99 22 009715 • email # [marketing@qtork.com](mailto:marketing@qtork.com) • [www.qtork.com](http://www.qtork.com)

