BRM SERIES
WORM GEARBOX

Pursuit of Ultra Precision and Mechatromation Seibu

BRM Series

WORM GEARBOX

Introduction

For a half century, we have continued to provide the valve actuators that pla y an important role in guiding the water, electricity, gas, oil, and other energy sources that are essential in our lives, and we have largest market share in J apan. In recent years, we have taken up challenges in new fields by proposin g system solutions that meet customer needs in response to demand for ne w installations and updates.

BRM Series are available to all kinds of industrial valve – butterfly, ball and plug etc. and dampers which turn 90 degree basically and are designed and manufactured with
experience of years.

Contents

1.Features

1. Small & Lightweight Design

-30% or more of size and -20% or more of weight (compared with our conventional products)

2. Excellent Environmental Resistance

・The gear case is made of corrosion-resistant ductile (FCD450-10) casting.

・It is sealed by O-rings or oil seals to provide dustproof and waterproof structure (standard: IP67, option: IP68).

Allowable ambient temperature: -25° C to +80° C

3. Abundant Lineups

Since the number of series is increased as compared with the conventional models, an optimum model can be selected.

4. Compliant with International Flange Standards

The interface with a valve is based on the international standard ISO 5211.

5. Long-Life Design

It has excellent strength and durability, because the gear case is tough and ductile, the worm is made of heat-treated carbon steel for machine structural use, and the worm wheel is made of aluminum brass with high wear resistance. Moreover, maintenance is not required for a long time, because long-life multi-purpose lithium-soap-based grease is filled up enough.

2. Index

BRM - 10 F

Input type	F	Motor operated
	H	Manual operated

Series no. (range of maximum output torque)	0	~ 500 Nm
	1	~ 1,000 Nm
	2	~ 2,000 Nm
	3	~ 3,000 Nm
	4	~ 4,000 Nm
	5	~ 5,000 Nm
	10	~ 10,000 Nm
	18	~ 18,000 Nm
	40	~ 40,000 Nm
	80	~ 80,000 Nm
	150	~ 150,000 Nm

>> With intermediate gearbox

BRM - 10 - 1S F

Input type	F	Motor operated
	H	Manual operated

Gear type of intermediate gearbox	1S	Spur gear
	1B	Bevel gear
	2S	Double spur
	2B	Spur + bevel gear
	3B	Double spur + bevel gear

Series no.	1/2/3/4/5/10/18/40/80/150 ※All-round gear type: insert "M" after Series no..

3. Design features

Mechanical stopper

- Sufficient strength for stability
- Convenient setting work
- Standard : IP-67
- Option : IP-68 (applied sealing device)

Main body

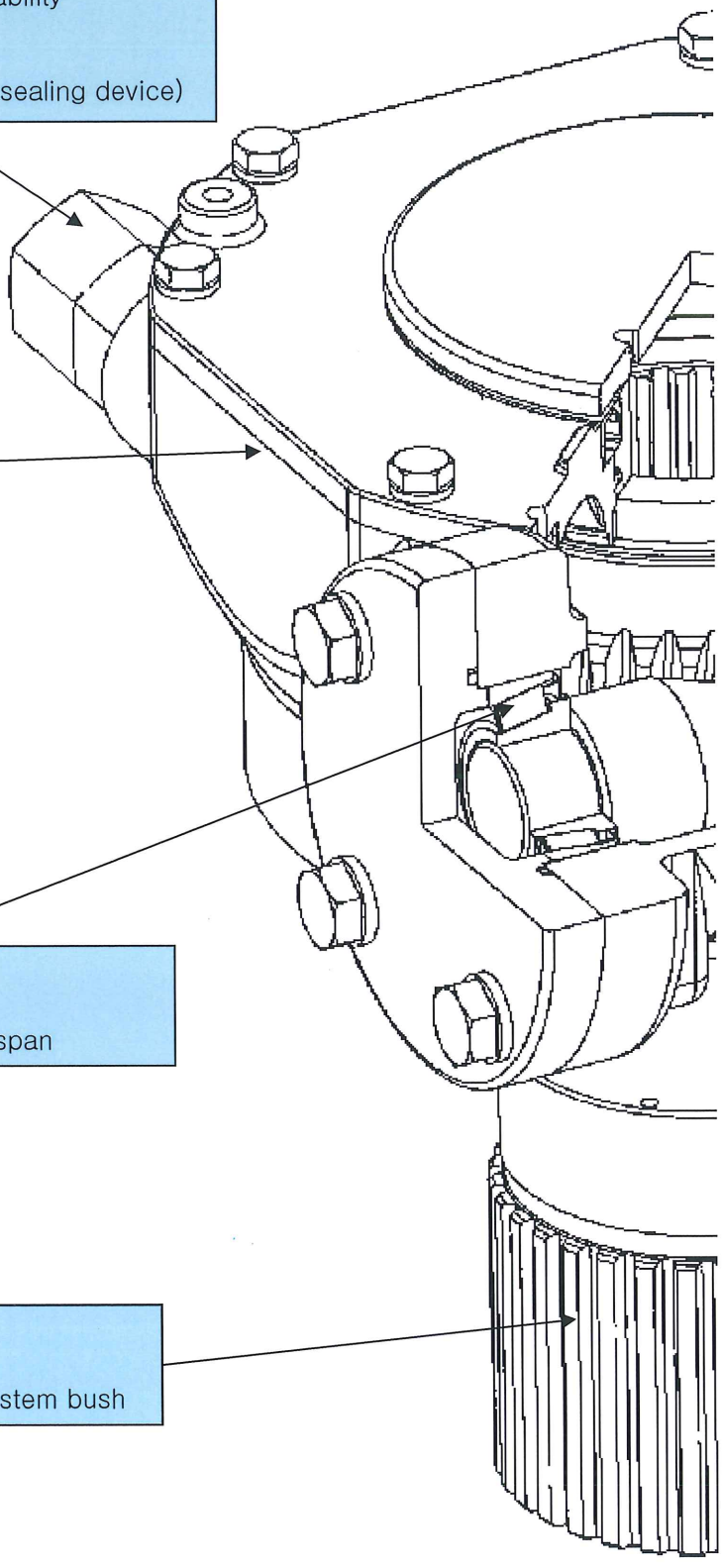
- Design considering good appearance
- Wall-thickness and strength by optimized design (Material : ductile cast iron)

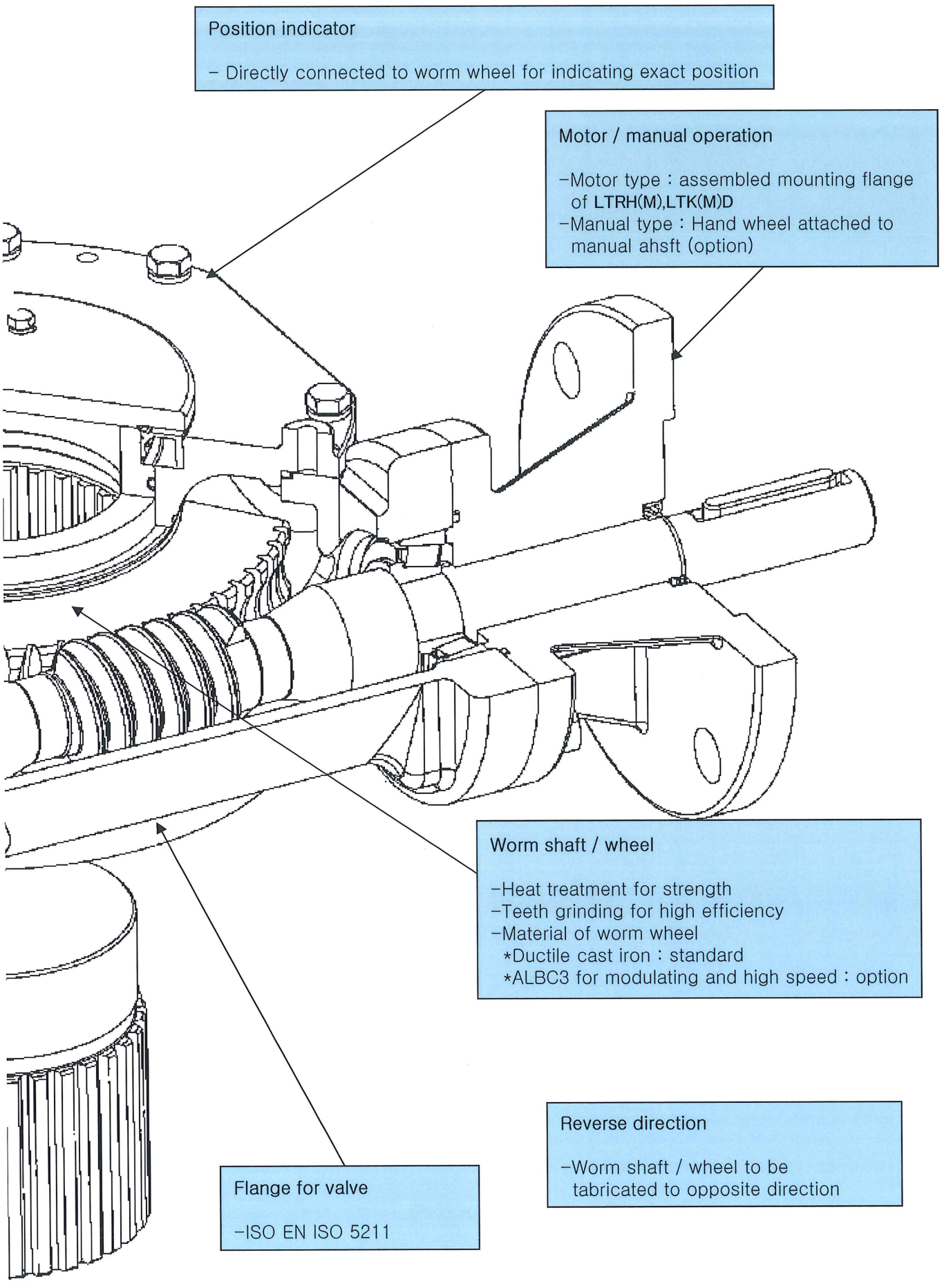
Taper roller bearing

- Sufficient strength and life-span

Stem bush

-Easily adjustable and removable splined stem bush




Position indicator
- Directly connected to worm wheel for indicating exact position
Motor / manual operation
-Motor type : assembled mounting flange of LTRH(M),LTK(M)D
-Manual type : Hand wheel attached to manual ahsft (option)
Worm shaft / wheel
-Heat treatment for strength
-Teeth grinding for high efficiency
-Material of worm wheel
*Ductile cast iron : standard
*ALBC3 for modulating and high speed : option
Reverse direction
-Worm shaft / wheel to be tabricated to opposite direction
Flange for valve
-ISO EN ISO 5211

BRM Series

WORM GEARBOX

4. Specification

Model	Type of input		Output specification				*Mechanical advantage	Input specification		Weight (kg)
	Worm for motor :F	Worm for manual :H	Allowable torque (Nm)	Reduction ratio	Output flange Bolts size Bolts torque	Allowable valve stem diameter (mm)		Torque (Nm)	No.of turns for 90° operation	
BRM-0	×	○	500	1/40	F10 M10 16Nm	28	12	41.7	10	7.5
BRM-1	○	○	1,000	1/40	F12 M12 32Nm	38	12	83.3	10	13
BRM-1-1S	×	○		1/80			23.3	42.9	20	17.5
BRM-1-1B	○	○		1/80			23.3	42.9	20	17.5
BRM-2	○	○	2,000	1/60	F14 M16 76Nm	50	18	111.1	15	19.5
BRM-2-1S	×	○		1/150			43.7	45.8	37.5	25
BRM-2-1B	○	○		1/150			43.7	45.8	37.5	24
BRM-3	○	○	3,000	1/60	F16 M20 121Nm	60	18	166.7	15	22
BRM-3-1S	×	○		1/150			43.7	68.7	37.5	27.5
BRM-3-1B	○	○		1/150			43.7	68.7	37.5	26.5
BRM-4	○	○	4,000	1/60	F16 M20 162Nm	75	18	222.2	15	34.5
BRM-4-1S	×	○		1/150			43.7	91.6	37.5	42.5
BRM-4-1B	○	○		1/150			43.7	91.6	37.5	45.5
BRM-5	○	×	5,000	1/60	F20 M16 65Nm	75	18	277.8	15	37.5
BRM-5-1S	○	○		1/150			43.7	114.5	37.5	45.5
BRM-5-1B	○	○		1/150			43.7	114.5	37.5	48.5
BRM-10	○	×	10,000	1/60	F25 M16 105Nm	100 (95)	18	555.6	15	66.5
BRM-10-1S	○	○		1/180			52.4	190.9	45	85
BRM-10-1B	○	○		1/180			52.4	190.9	45	95.5
BRM-10-2S	×	○		1/540			152.4	65.6	135	98
BRM-10-2B	×	○		1/450			127	78.7	112.5	96

※1 The value drive torque should be set within the allowable BRM torque.
※2 Use 1 or 2 keys to connect to the valve stem as appropriate. Values in parentheses are for old-style JIS key.
※3 Input types marked "X" are also available. Inquire for details.
※4 Mechanical advantage is the ratio between input-shaft torque and output-shaft torque (for efficiency, worm gear: 0.3, spur/bevel gear: 0.97).
※5 Input-shaft torque shown for an output torque within the allowable torque.
※6 Before attaching the BRM to a valve, please ensure that the strength class of the bolts is at least 10.9, and the length of engagement sufficient. Torque value shown in the minimum.

Note) The above values are subject to change without notice.

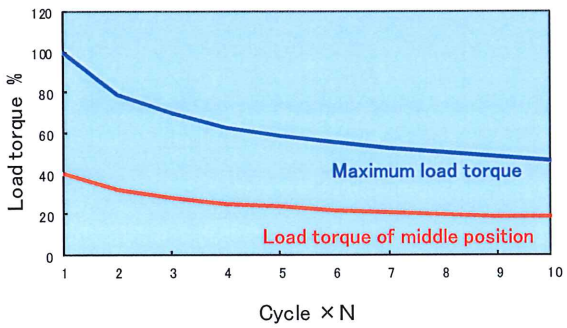
Model	Type of input		Output specification				*Mechanical advantage	入力軸		Weight (kg)
	Worm for motor :F	Worm for manual :H	Allowable torque (Nm)	Reduction ratio	Output flange Bolts size Bolts torque	Allowable valve stem diameter (mm)		Torque (Nm)	No.of turns for 90° operation	
BRM-18	○	×	18,000	1/60	F30 M20 201Nm	115 (110)	18	1,000	15	116
BRM-18-1S	○	○		1/180			52.4	343.6	45	137
BRM-18-1B	○	○		1/180			52.4	343.6	45	145
BRM-18-2S	×	○		1/540			152.4	118.1	135	153
BRM-18-2B	×	○		1/450			127	141.7	112.5	148
BRM-40	○	×	40,000	1/60	F35 M30 562Nm	150 (145)	18	2,222	15	202
BRM-40-1S	○	×		1/240			69.8	572.7	60	232
BRM-40-1B	○	×		1/240			69.8	572.7	60	247
BRM-40-2S	×	○		1/960			271	147.6	240	255
BRM-40-2B	×	○		1/720			203.2	196.8	180	261
BRM-40-3B	×	○		1/2,400			657.1	60.9	600	266
BRM-80	○	×	80,000	1/65	F40 M36 1,182Nm	180	19.5	4,103	16.3	397
BRM-80-1S	○	×		1/260			75.7	1,057	65	443
BRM-80-1B	○	×		1/260			75.7	1,057	65	489
BRM-80-2S	×	○		1/1,040			293.6	272.5	260	480
BRM-80-2B	×	○		1/780			220.2	363.4	195	472
BRM-80-3B	×	○		1/3,120			854.3	93.6	780	510
BRM-150	○	×	150,000	1/65	F48 M36 1,242Nm	220	19.5	7,692	16.3	867
BRM-150-1S	○	×		1/325			94.6	1,586	81.3	989
BRM-150-1B	○	×		1/325			94.6	1,586	81.3	1,060
BRM-150-2S	×	○		1/1,625			458.7	327	406.3	1090
BRM-150-2B	×	○		1/1,300			367	408.8	325	1034
BRM-150-3B	×	○		1/4,875			1,335	112.4	1,218.8	1120

※7 No maintenance work is necessary for the cycle shown belo w (open/close/open) in 40% load condition of allowable torque at intermediate position and allowable torque at stroke end.

Model	Cycle N	Grease exchange period
BRM-0,1,2,3,4,5	10,000	5 year
BRM-10,18,40,80,150	1,000	

For rough idea of life time, output shaft backlash (rotation angle) should be 1 degree with no load.
Note) The factory default setting is within 0.3 degree.

※8 When operating with the cycle over the value shown in ※7, operate within the load condition as below.
Keep in mind load torque100%=allowable torque



5. Comparison of standard and option

No.	Description		Only worm gearbox	With Intermediate gearbox	Remark
1	Motor operation	1) ON – OFF specifications	○	○	Worm wheel : CAC703
		2) Regulating valve specifications	○	○	Worm wheel : CAC703
2	Manual operation	1) Handle wheel	△	△	Worm wheel : CAC703 Handle : FC200
		2) Cap	△	△	Worm wheel : CAC703 Cap : FCD450-10
		3) Special operation handle wheel	△	△	Worm wheel : CAC703
3	Self locking		○	○	
4	Rotating direction	1) Input shaft position(right, left)	○	○	
		2) The combination of input and output shaft C.W. of input(open, close) C.W. of output(open, close)	○	○	
5	Position indicating scale	1) Only 90 degree carved	○	○	
6	Traveling angle	1) 90°	○	○	
		1) 180°, 270°, 360° ,etc.	△	△	Without stopper bolt by rotation angle
7	Standard material	1) Gear case	Ductile cast iron/FCD450-10		
		2) Worm shaft	Chromium molybdenum steel/SCM415H		
		3) Worm wheel	CAC703(ALBC3)		
		4) Gear for intermediate gearbox , spur and bevel	Carbon steel/S45C, chromium molybdenum steel/SCM415H		
		5) Grease	EP0		
8	Stopper bolt	1) For IP67	○	○	
		2) For IP68	△	△	
9	Ambient temperature	1) -25 ℃ ~ +80 ℃	○	○	
		2) -40 ℃ ~ +60 ℃	△	△	Low temp. Detail specifications available on request.
		3) 0 ℃ ~ +120 ℃	△	△	High temp. Detail specifications available on request
10	Coating	1) Primer	○	○	Rust prevention coating (COSMO REX#300)
			△	△	Others (Rust prevention coating)
		2) Under and middle coating	△	△	
		3) Top coating	△	△	

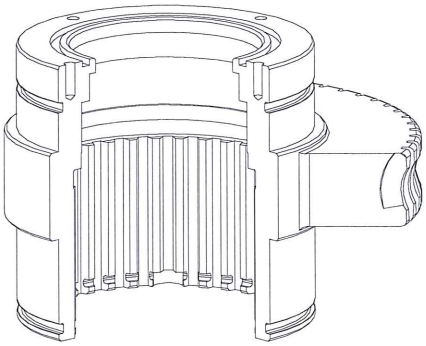
※ Legend ○ : Standard △ : Option

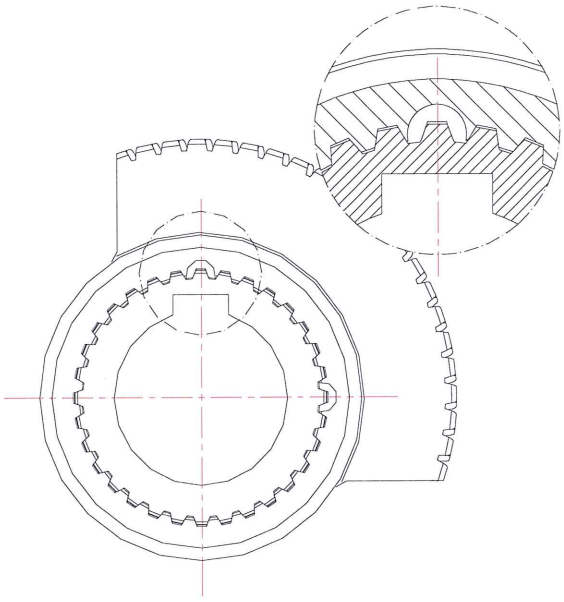
Note) For BRM-0 only, the material of worm wheel is FCD-450-10-10.

Note) If there is a risk of salt damage, a rust-proofing measure can be taken at your request.

6. Setting of Stem bush

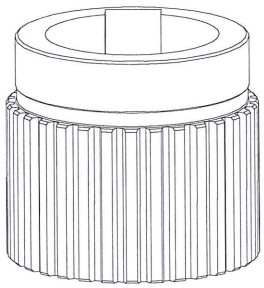
Worm wheel

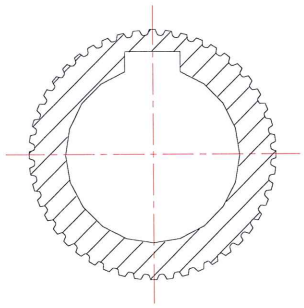




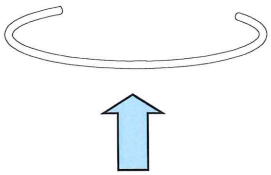
View "A"

Stem bush





End ring

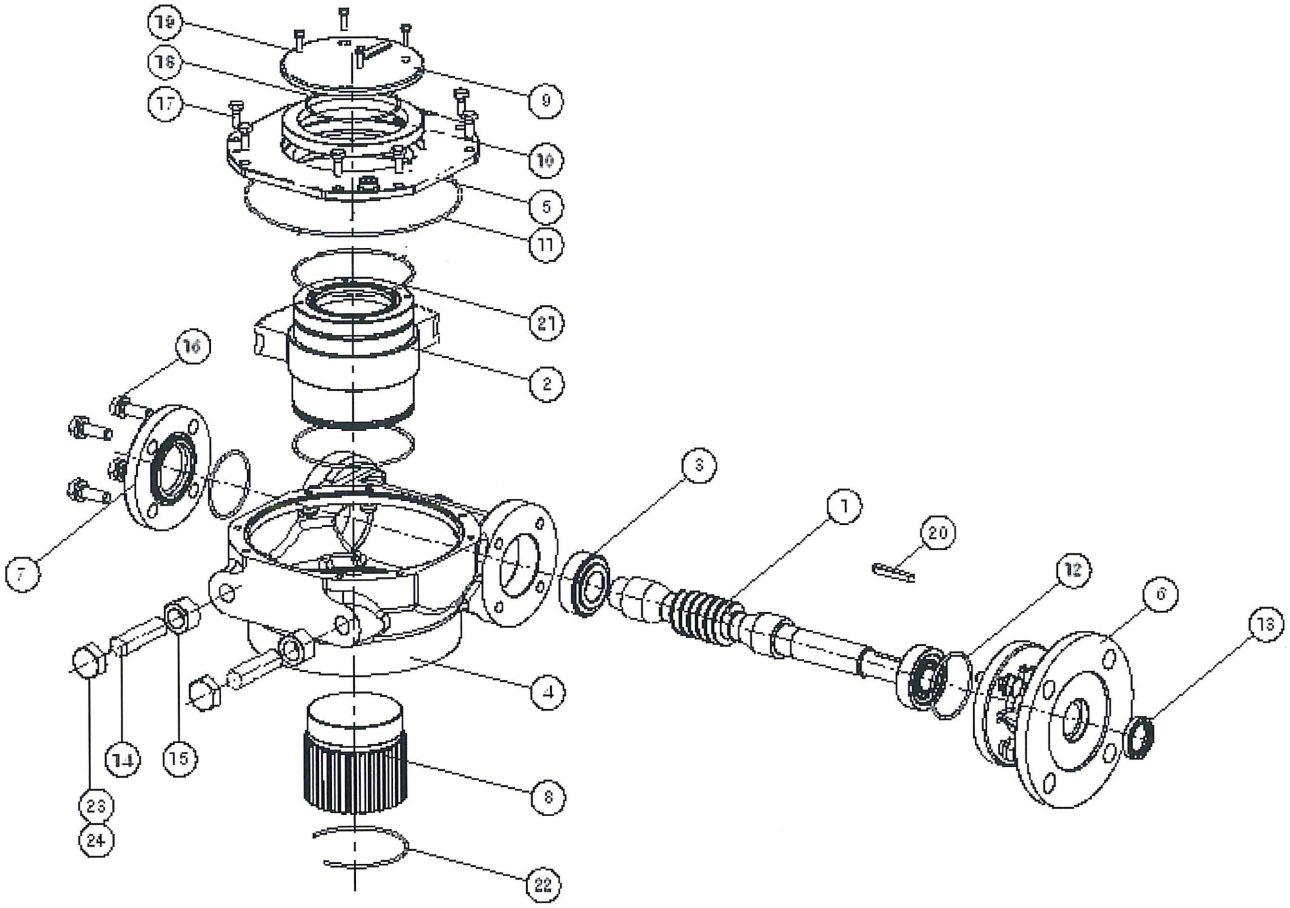


View "A"

1. It is possible to change the position of key .
2. There are semicircle grooves at the Worm wheel' s end as showing of the above figure–View A. These positions of groove are both ends of the turning angle 90 degrees. Make the standard at the position of the Stem bush insertion.
3. Set the end ring at the end after inserting the Stem Bush.
4. It is possible to detach the end ring easily that to insert minus driver etc. in the end of the Worm wheel.

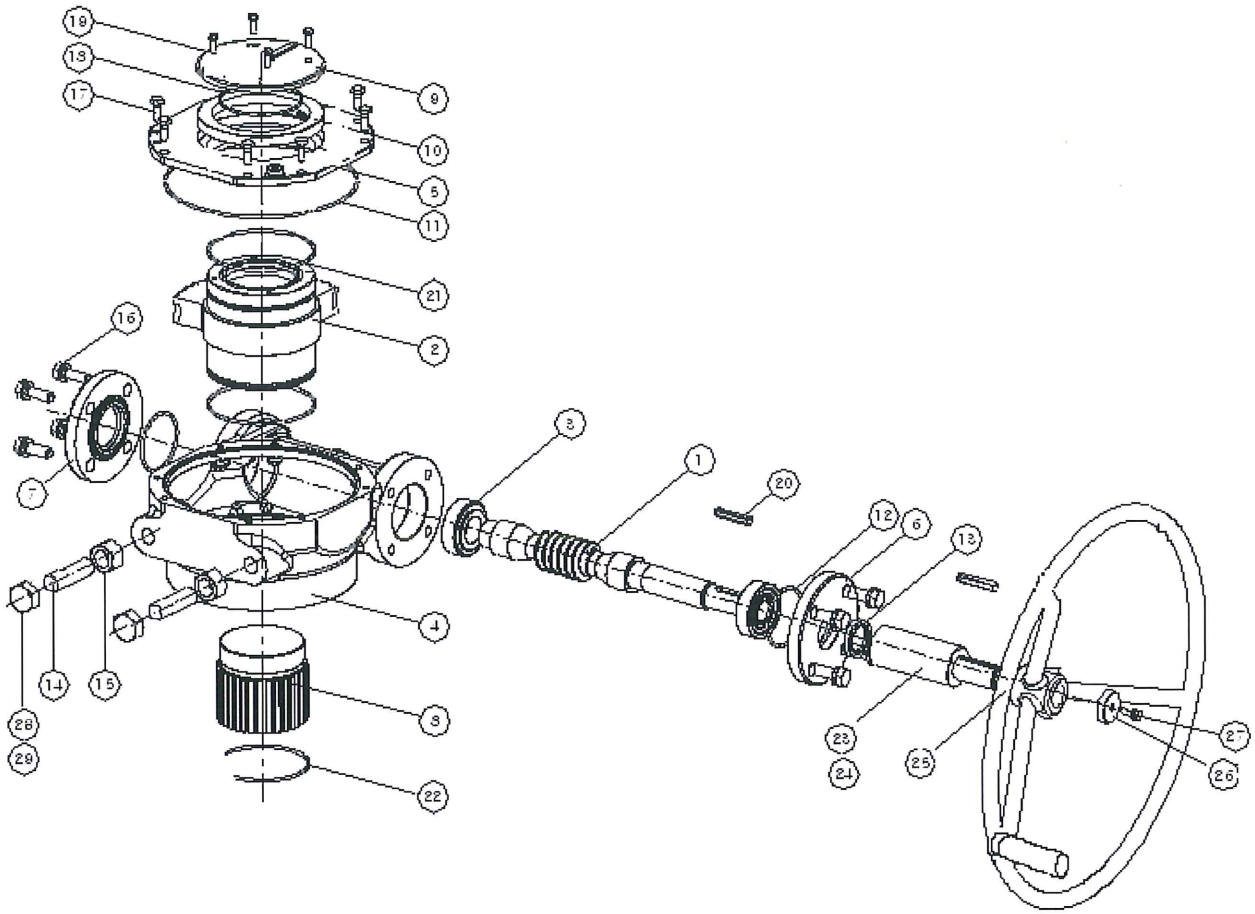
※For details, please refer to the Operation Manual.

7. Configuration >> for motor



Part list & material							
No	Part name	Q'ty	Material	No	Part name	Q'ty	Material
1	Worm shaft	1	SCM440	14	Stopper bolt	2	
2	Worm wheel	1	CAC703	15	Hex. Nut	2	
3	Taper roller bearing	2		16	Hex. bolt s/w	8	
4	Gear case	1	FCD450-10	17	Hex. bolt s/w	8	
5	Gear cover	1	FCD450-10	18	O-ring	1	NBR
6	Mount flange	1	FCD450-10	19	Hex. bolt f/w	2	
7	Cover -B	1	FCD450-10	20	Flat key	1	S45C
8	Stem bush	1	S45C	21	O-ring	2	NBR
9	Stem cover	1	FC200	22	End ring	1	SWPB
10	Oil seal	1	NBR	23	Box nut	2	
11	O-ring	1	NBR	24	O-ring	4	NBR
12	O-ring	2	NBR				
13	Oil seal	1	NBR				

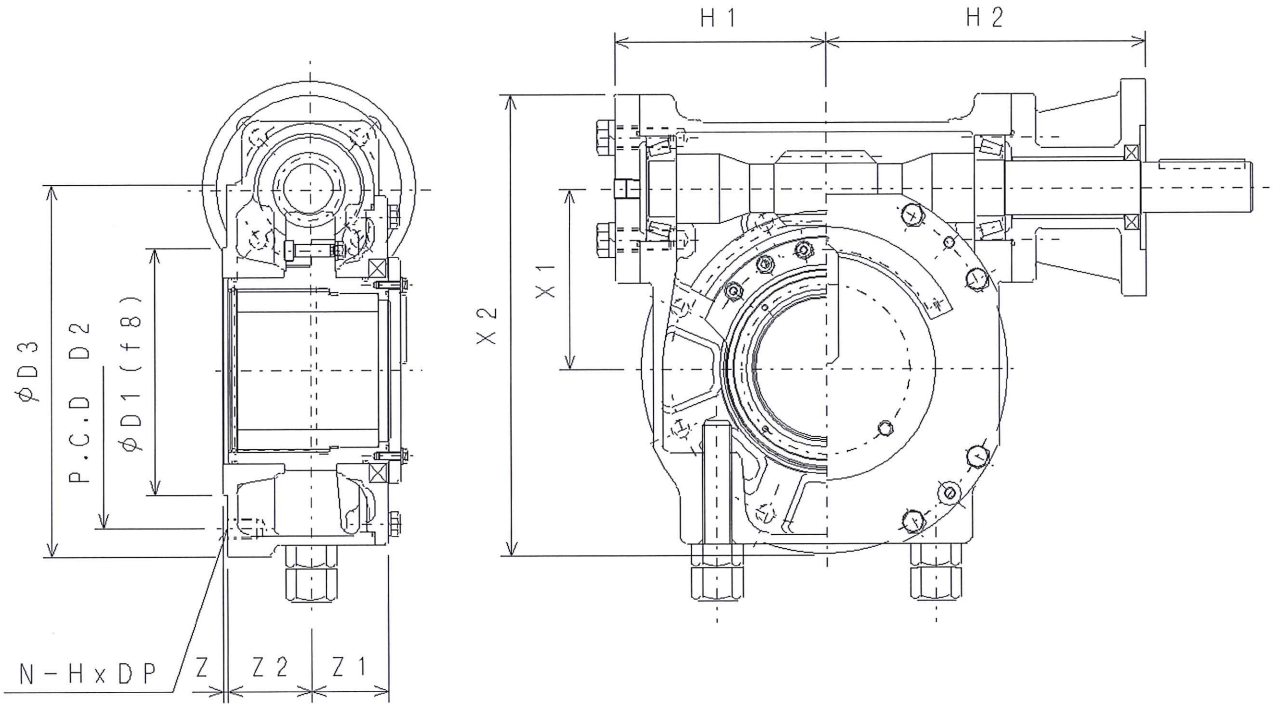
>> for manual

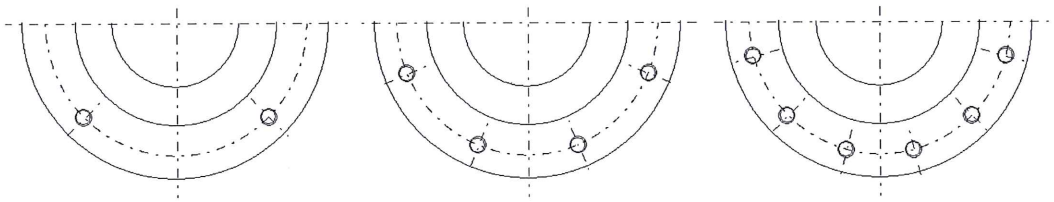


Part list & material							
No	Part name	Q'ty	Material	No	Part name	Q'ty	Material
1	Worm shaft	1	SCM440	16	Hex. bolt, s/w	8	
2	Worm wheel	1	CAC703	17	Hex. bolt, s/w	8	
3	Taper roller bearing	2		18	O-ring	1	NBR
4	Gear case	1	FCD450-10	19	Hex. bolt, f/w	2	
5	Gear cover	1	FCD450-10	20	Flat key	2	S45C
6	Cover -A	1	FCD450-10	21	O-ring	2	NBR
7	Cover -B	1	FCD450-10	22	End ring	1	SWPB
8	Stem bush	1	S45C	23	Handle shaft	1	S45C
9	Stem cover	1	FC200	24	Set screw	2	
10	Oil seal	1	NBR	25	Hand wheel	1	S45C
11	O-ring	1	NBR	26	Washer	1	S45C
12	O-ring	2	NBR	27	Hex. bolt, s/w	1	
13	Oil seal	1	NBR	28	Box nut	2	
14	Stopper bolt	2		29	O-ring	4	NBR
15	Hex. nut	2		30			

8. Dimension >> Worm for motor (Standard)

■ Section view





Output flange type "A" **Output flange type"B"** **Output flange type"C"**

■ Dimension

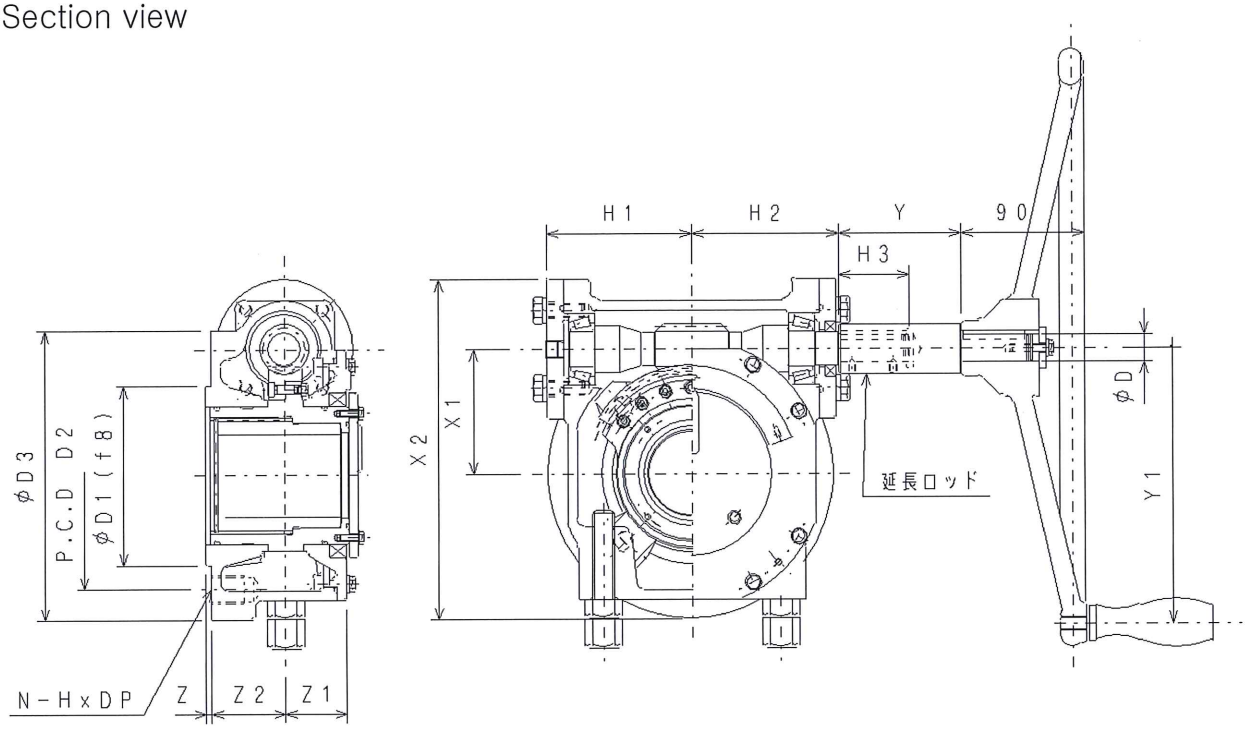
Unit: mm

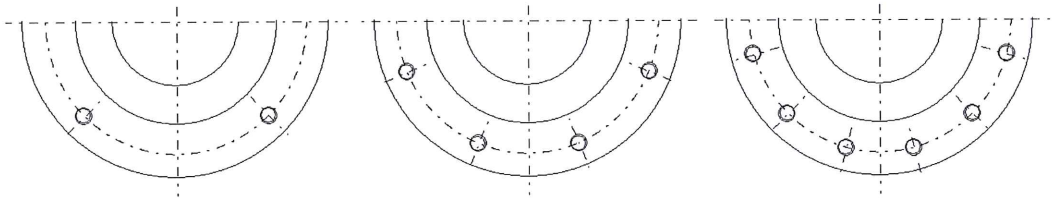
Model \ Dim	Base part							External part						Input shaft part
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	X1	X2	H1	H2	Actuator
BRM – 1F	A	F12	85	125	4 x M12 x 18	150	2	44.8	47.5	75	196	87	134	LTRH(M)-01,LTK(M)D-01
BRM – 2F		F14	100	140	4 x M16 x 24	175	3	45	54.5	91	233	106	170	LTRH(M)-01,LTK(M)D-01
BRM – 3F		F16	130	165	4 x M20 x 30	210	4	45	54.5	91	247	106	170	LTRH(M)-01,LTK(M)D-01,02
BRM – 4F		F16	130	165	4 x M20 x 30	210	4	52	65	116.5	293.3	132.3	202.3	LTK(M)D-01,02
BRM – 5F	B	F20	160	205	8 x M16 x 24	251	4	52	65	116.5	303.8	132.3	202.3	LTK(M)D-01,02,05
BRM – 10F		F25	200	254	8 x M16 x 24	300	4	62.5	68	146	372	171.5	261.5	LTK(M)D-02,05,1
BRM – 18F		F30	230	298	8 x M20 x 30	350	4	73	84	181	447.5	205.5	300.5	LTK(M)D-05,1
BRM – 40F		F35	260	356	8 x M30 x 45	415	4	95	108	233	565	250	370	LTK(M)D-1,3
BRM – 80F		F40	300	406	8 x M36 x 50	475	7	130	120	305	730	335	455	LTK(M)D-3
BRM – 150F	C	F48	370	483	12 x M36 x 70	560	7	170	164	380	900	420	570	LTK(M)D-5,10B

Note) F : Motor operating type

>> Worm for manual (Standard)

■ Section view





Output flange type“A” Output flange type“B” Output flange type“C”

■ Dimension

Unit : mm

Dim / Model	Base part							External part							Input shaft part			
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	X1	X2	H1	H2	H3	ΦD	Key	Y	Y1
BRM – 0H	A	F10	70	102	4 x M10 x 15	125	2	39	38	63	166	72.5	78	36.5	15	5 x 5 x 30	–	R200
BRM – 1H		F12	85	125	4 x M12 x 18	150	2	44.8	47.5	75	196	87	90	41.5	20	6 x 6 x 35	–	R200
BRM – 2H		F14	100	140	4 x M16 x 24	175	3	45	54.5	91	233	106	108	52	20	6 x 6 x 45	90	R300
BRM – 3H		F16	130	165	4 x M20 x 30	210	4	45	54.5	91	247	106	108	52	20	6 x 6 x 45	90	R300
BRM – 4H		F16	130	165	4 x M20 x 30	210	4	52	65	116.5	293.3	132.3	135.3	53	25	8 x 7 x 45	100	R300

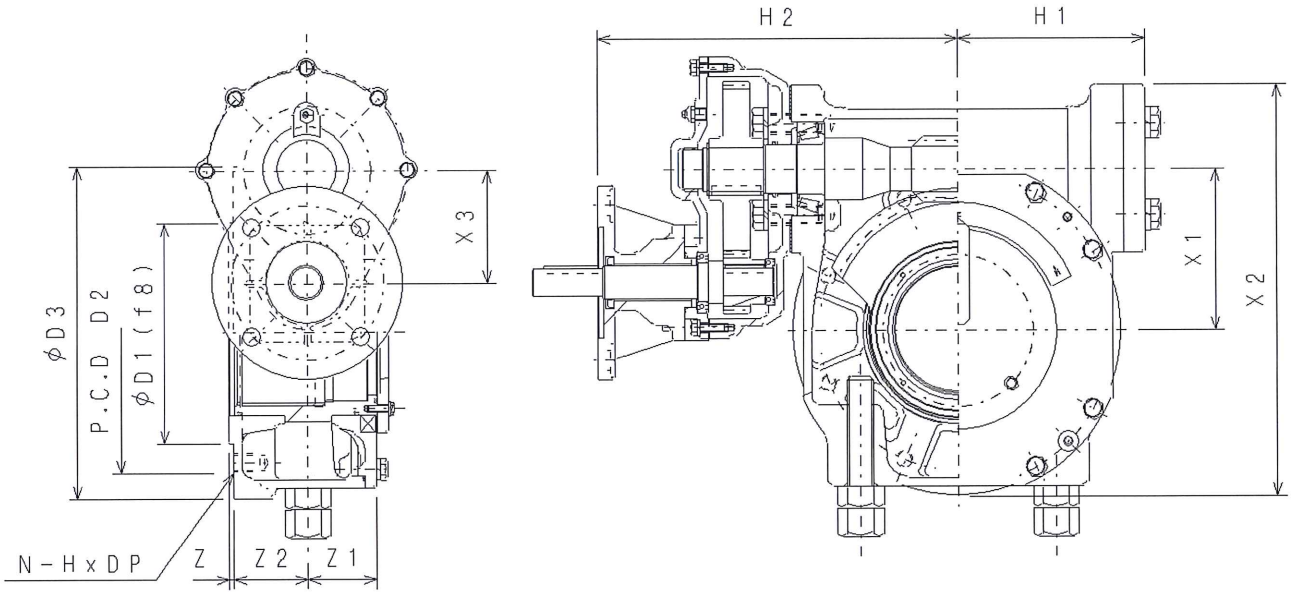
Note) H : Manual operating type , Y : Adapter (option)

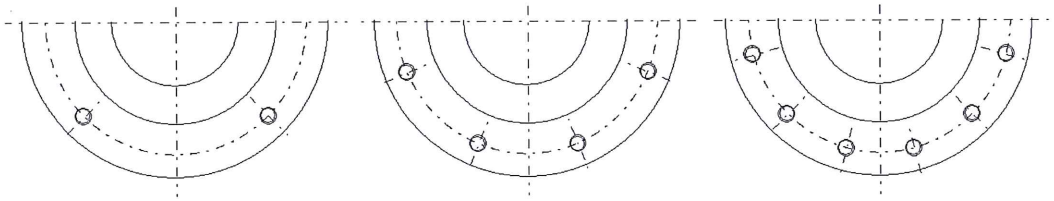
BRM Series

WORM GEARBOX

>> Worm for motor (Spur gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

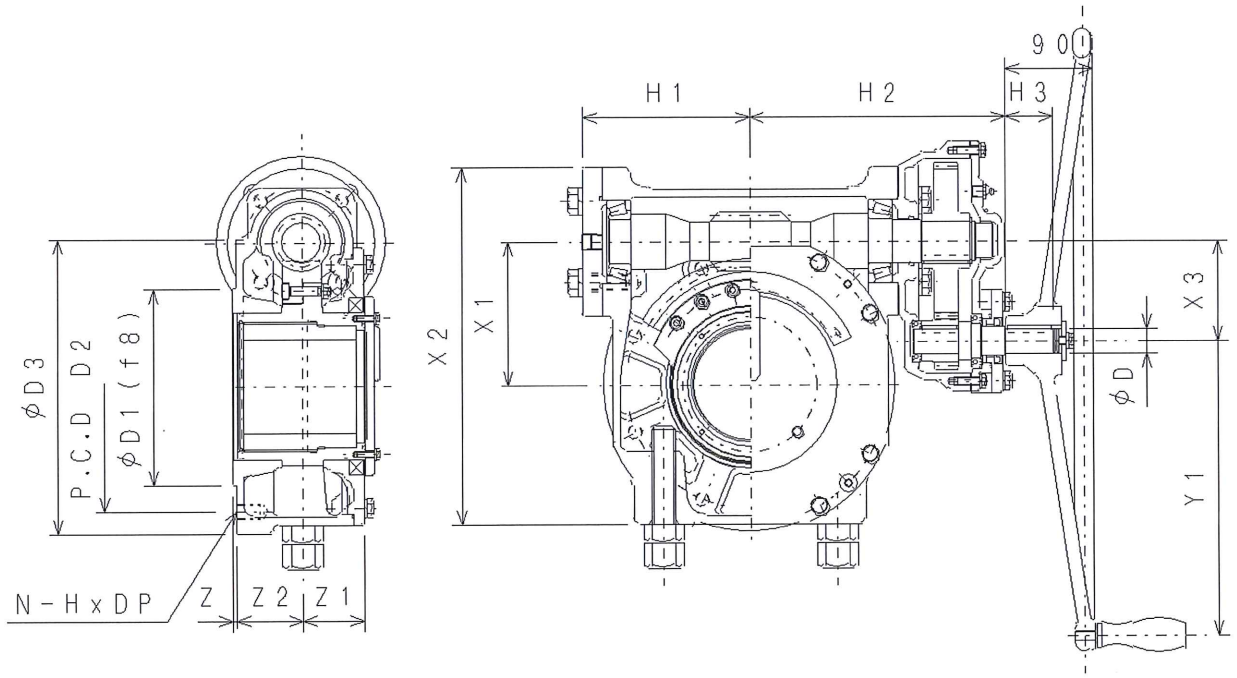
Unit : mm

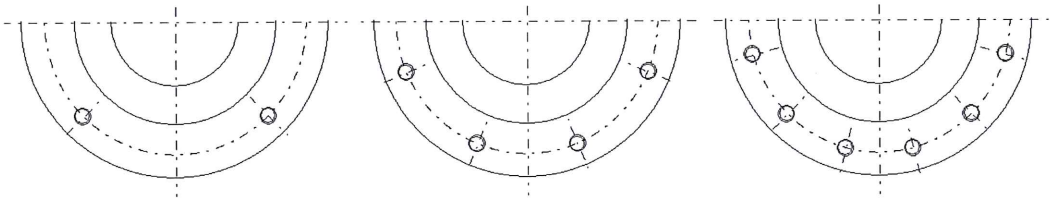
Model \ Dim	Base part							External part							Input shaft part
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	X1	X2	X3	H1	H2	Actuator
BRM - 5 - 1SF	B	F20	160	205	8 x M16 x 24	251	4	52	65	116.5	303.8	70	132.3	275.3	LTK(M)D-01
BRM - 10 - 1SF		F25	200	254	8 x M16 x 24	300	4	62.5	68	146	372	102	171.5	328.5	LTK(M)D-01
BRM - 18 - 1SF		F30	230	298	8 x M20 x 30	350	4	73	84	181	447.5	114	205.5	364.5	LTK(M)D-02
BRM - 40 - 1SF		F35	260	356	8 x M30 x 45	415	4	95	108	233	565	160	250	419	LTK(M)D-05
BRM - 80 - 1SF		F40	300	406	8 x M36 x 50	475	7	130	120	305	730	180	335	540	LTK(M)D-05,1
BRM - 150 - 1SF	C	F48	370	483	12 x M36 x 70	560	7	170	164	380	900	216	420	660.5	LTK(M)D-1,3,5

Note) F : Motor operating type, 1S : Spur gear box

>> Worm for manual (Spur gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

Unit: mm

Model \ Dim	Base part							External part								Input shaft part		
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	X1	X2	X3	H1	H2	H3	ΦD	Key	Y1
BRM – 1 – 1SH	A	F12	85	125	4 x M12 x 18	150	2	44.8	47.5	75	196	40.5	87	160.5	32	15	5 x 5 x 25	R200
BRM – 2 – 1SH		F14	100	140	4 x M16 x 24	175	3	45	54.5	91	233	56	106	193	36	15	5 x 5 x 30	R200
BRM – 3 – 1SH		F16	130	165	4 x M20 x 30	210	4	45	54.5	91	247	56	106	193	36	15	5 x 5 x 30	R200
BRM – 4 – 1SH		F16	130	165	4 x M20 x 30	210	4	52	65	116.5	293.3	70	132.3	218.3	41	20	6 x 6 x 35	R300
BRM – 5 – 1SH	B	F20	160	205	8 x M16 x 24	251	4	52	65	116.5	303.8	70	132.3	218.3	41	20	6 x 6 x 35	R300
BRM – 10 – 1SH		F25	200	254	8 x M16 x 24	300	4	62.5	68	146	372	102	171.5	262.5	54	25	8 x 7 x 45	R300
BRM – 18 – 1SH		F30	230	298	8 x M20 x 30	350	4	73	84	181	447.5	114	205.5	297.5	54	25	8 x 7 x 45	R350

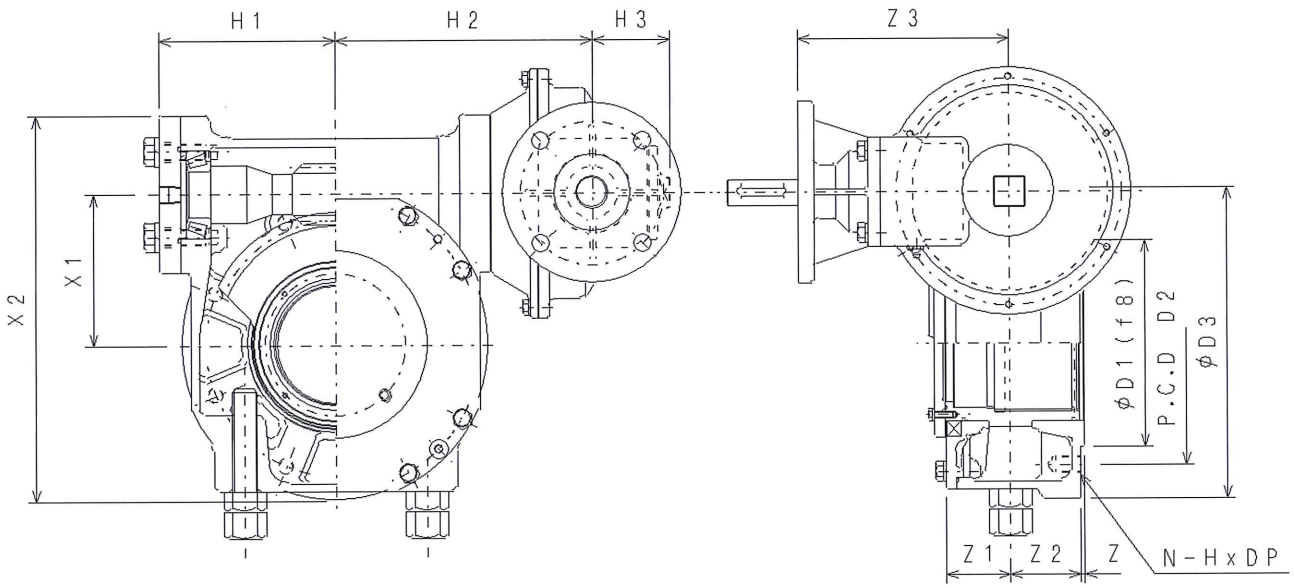
Note) H : Manual operating type , 1S : Spur gear box

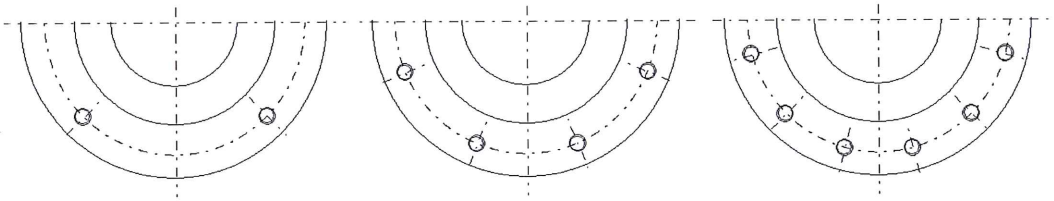
BRM Series

WORM GEARBOX

>> Worm for motor (Bevel gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

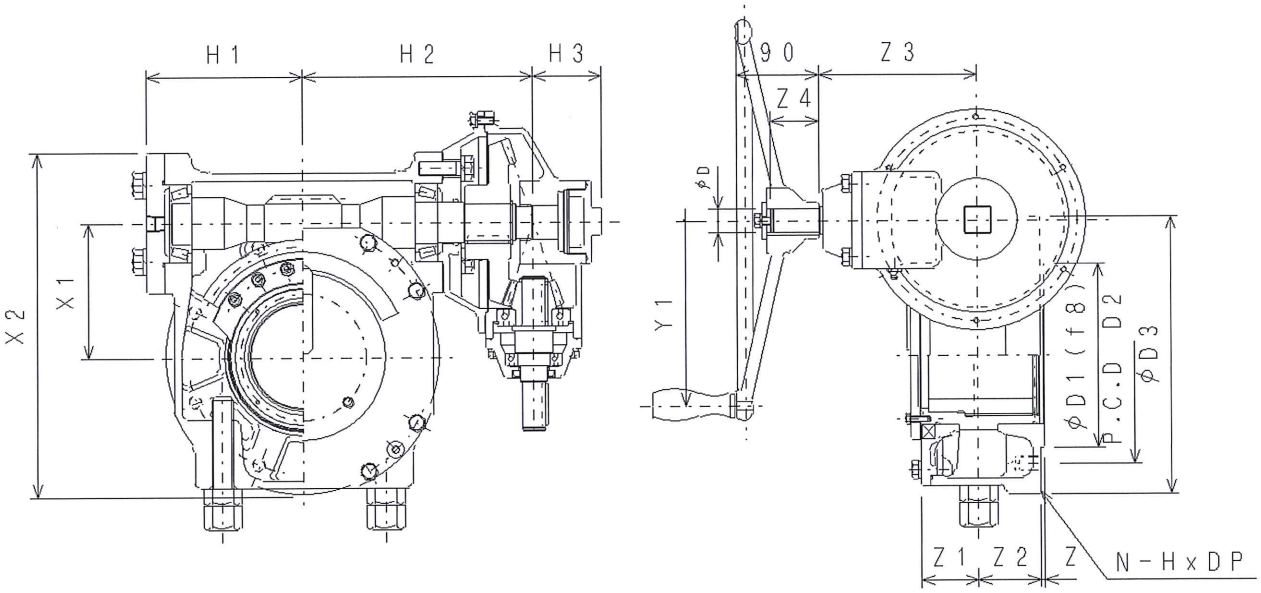
Unit : mm

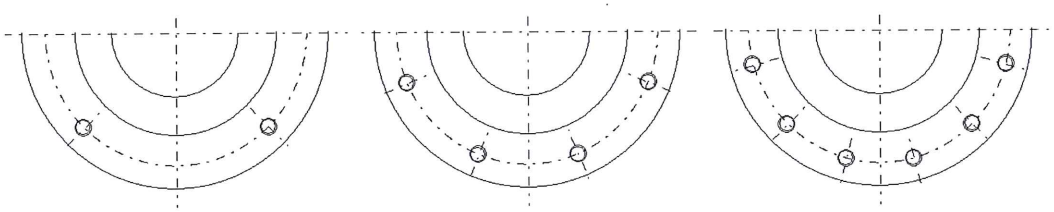
Model \ Dim	Base part							External part								Input shaft part
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	Z3	X1	X2	H1	H2	H3	Actuator
BRM – 1 – 1BF	A	F12	85	125	4 x M12 x 18	150	2	44.8	47.5	118.5	75	196	87	138	35	LTRH(M)-01,LTK(M)D-01
BRM – 2 – 1BF		F14	100	140	4 x M16 x 24	175	3	45	54.5	138.5	91	233	106	164	39	LTRH(M)-01,LTK(M)D-01
BRM – 3 – 1BF		F16	130	165	4 x M20 x 30	210	4	45	54.5	138.5	91	247	106	164	39	LTRH(M)-01,LTK(M)D-01
BRM – 4 – 1BF		F16	130	165	4 x M20 x 30	210	4	52	65	158.5	116.5	293.3	132.3	201.8	65.5	LTRH(M)-01,LTK(M)D-01
BRM – 5 – 1BF	B	F20	160	205	8 x M16 x 25	251	4	52	65	158.5	116.5	303.8	132.3	201.8	65.5	LTRH(M)-01,LTK(M)D-01
BRM – 10 – 1BF		F25	200	254	8 x M16 x 24	300	4	62.5	68	205.5	146	372	171.5	251	75.5	LTRH(M)-01,LTK(M)D-01
BRM – 18 – 1BF		F30	230	298	8 x M20 x 30	350	4	73	84	205.5	181	447.5	205.5	285	75.5	LTK(M)D-01,02
BRM – 40 – 1BF		F35	260	356	8 x M30 x 45	415	4	95	108	252	233	565	250	356.5	86.5	LTK(M)D-02,05
BRM – 80 – 1BF		F40	300	406	8 x M36 x 50	475	7	130	120	334	305	730	335	473	116	LTK(M)D-05,1
BRM – 150 – 1BF	C	F48	370	483	12 x M36 x 70	560	7	170	164	425.5	380	900	420	570.5	132	LTK(M)D-1,3,5

Note) F : Motor operating type, 1B : Bevel gear box

>> Worm for manual (Bevel gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

Unit: mm

Model \ Dim	Base part							External part									Input shaft part		
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	Z3	Z4	X1	X2	H1	H2	H3	ΦD	Key	Y1
BRM – 1 – 1BH	A	F12	85	125	4 x M12 x 18	150	2	44.8	47.5	86.5	32	75	196	87	138	35	15	5 x 5 x 25	R200
BRM – 2 – 1BH		F14	100	140	4 x M16 x 24	175	3	45	54.5	104	36	91	233	106	164	39	15	5 x 5 x 30	R200
BRM – 3 – 1BH		F16	130	165	4 x M20 x 30	210	4	45	54.5	104	36	91	247	106	164	39	15	5 x 5 x 30	R200
BRM – 4 – 1BH		F16	130	165	4 x M20 x 30	210	4	52	65	118.5	41	116.5	293.3	132.3	201.8	65.5	20	6 x 6 x 35	R300
BRM – 5 – 1BH	B	F20	160	205	8 x M16 x 24	251	4	52	65	118.5	41	116.5	303.8	132.3	201.8	65.5	20	6 x 6 x 35	R300
BRM – 10 – 1BH		F25	200	254	8 x M16 x 24	300	4	62.5	68	173	53	146	372	171.5	251	75.5	25	8 x 7 x 45	R300
BRM – 18 – 1BH		F30	230	298	8 x M20 x 30	350	4	73	84	173	53	181	447.5	205.5	285	75.5	25	8 x 7 x 45	R350

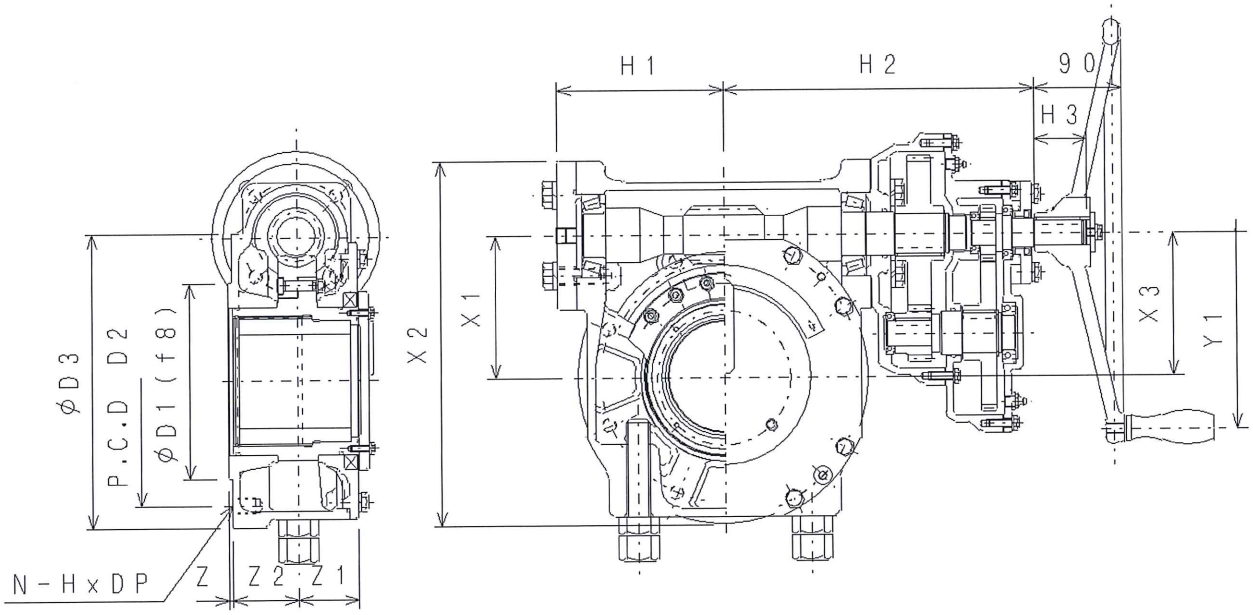
Note) H : Manual operating type , 1B : Bevel gear box

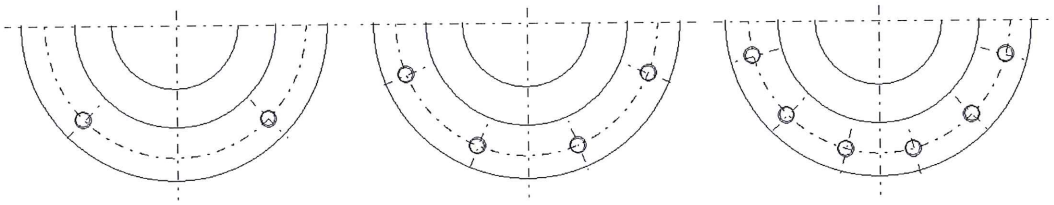
BRM Series

WORM GEARBOX

>> Worm for manual (Spur gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

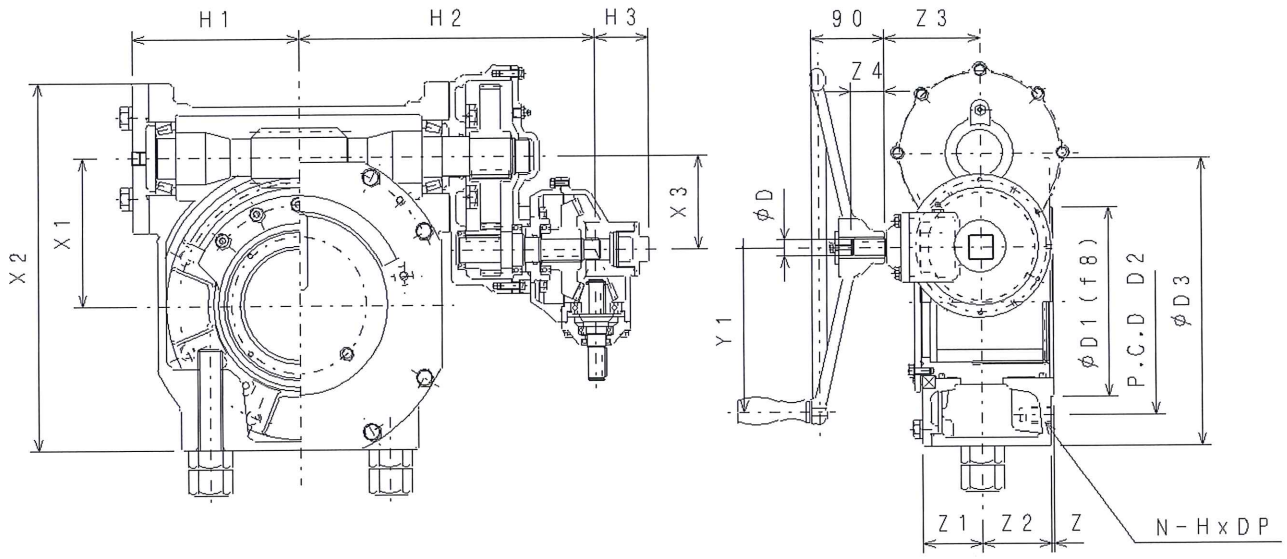
Unit: mm

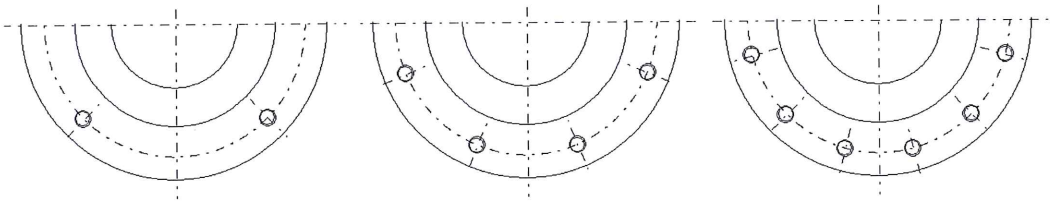
Model \ Dim	Base part							External part								Input shaft part		
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	X1	X2	X3	H1	H2	H3	ΦD	Key	Y1
BRM – 10 – 2SH	B	F25	200	254	8 x M16 x 24	300	4	62.5	68	146	372	146	171.5	321.5	54	25	8 x 7 x 45	R200
BRM – 18 – 2SH		F30	230	298	8 x M20 x 30	350	4	73	84	181	447.5	181	205.5	359.5	54	25	8 x 7 x 45	R300
BRM – 40 – 2SH		F35	260	356	8 x M30 x 45	415	4	95	108	233	565	233	250	441	55	30	10 x 8 x 45	R350
BRM – 80 – 2SH		F40	300	406	8 x M36 x 50	475	7	130	120	305	730	305	335	580	56	40	12 x 8 x 45	R350
BRM – 150 – 2SH	C	F48	370	483	12 x M36 x 70	560	7	170	164	380	900	216	420	707.5	50	45	16 x 10 x 45	R350

Note) H : Manual operating type , 2S : Spur gear box

>> Worm for manual (Spur & Bevel gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

Unit: mm

Model \ Dim	Base part							External part										Input shaft part		
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	Z3	Z4	X1	X2	X3	H1	H2	H3	ΦD	Key	Y1
BRM - 10 - 2BH	B	F25	200	254	8 x M16 x 24	300	4	62.5	68	118.5	41	146	372	102	171.5	329	65.5	20	6 x 6 x 35	R200
BRM - 18 - 2BH		F30	230	298	8 x M20 x 30	350	4	73	84	118.5	41	181	447.5	114	205.5	365	65.5	20	6 x 6 x 35	R350
BRM - 40 - 2BH		F35	260	356	8 x M30 x 45	415	4	95	108	173	53	233	565	160	250	429.5	75.5	25	8 x 7 x 45	R350
BRM - 80 - 2BH		F40	300	406	8 x M36 x 50	475	7	130	120	173	53	305	730	180	335	582.5	75.5	25	8 x 7 x 45	R350
BRM - 150 - 2BH	C	F48	370	483	12 x M36 x 70	560	7	170	164	206.5	54.5	380	900	216	420	690	86.5	30	10 x 8 x 45	R350

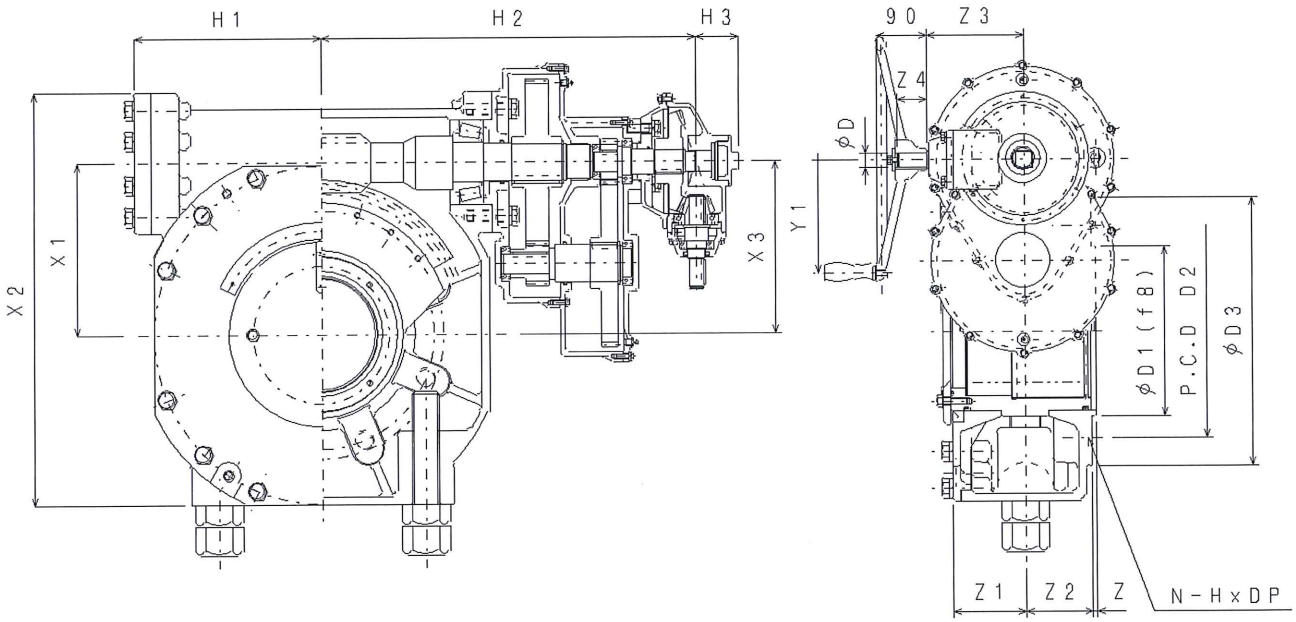
Note) H : Manual operating type , 2B : Spur & Bevel gear box

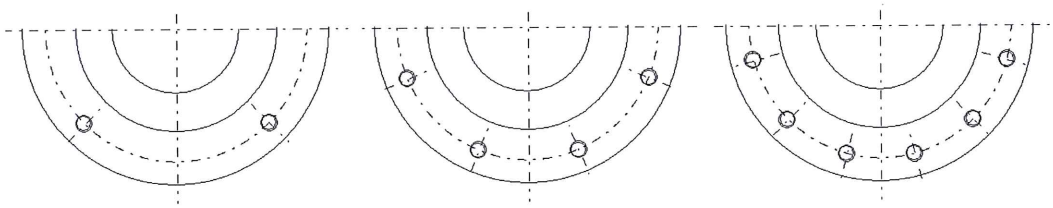
BRM Series

WORM GEARBOX

>> Worm for manual (Spur & Bevel gear box)

■ Section view





Output flange type"A" Output flange type"B" Output flange type"C"

■ Dimension

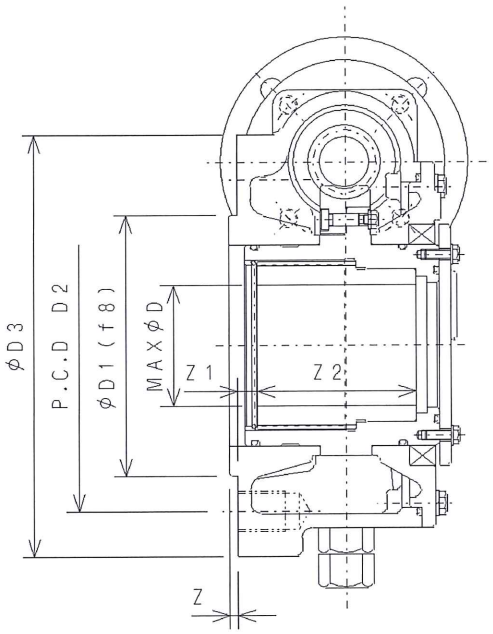
Unit: mm

Model \ Dim	Base part							External part										Input shaft part		
	Type	Flange Size	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2	Z3	Z4	X1	X2	X3	H1	H2	H3	ΦD	Key	Y1
BRM – 40 – 3BH	B	F35	260	356	8 x M30 x 45	415	4	95	108	118.5	53	233	565	233	250	509.5	65.5	20	6 x 6 x 35	R200
BRM – 80 – 3BH		F40	300	406	8 x M36 x 50	475	7	130	120	173	53	305	730	305	335	671.5	75.5	25	8 x 7 x 45	R300
BRM – 150 – 3BH	C	F48	370	483	12 x M36 x 70	560	7	170	164	173	53	380	900	380	420	773.5	75.5	25	8 x 7 x 45	R300

Note) H : Manual operating type , 3B : Spur & Bevel gear box

>> Output flange

■ Section view

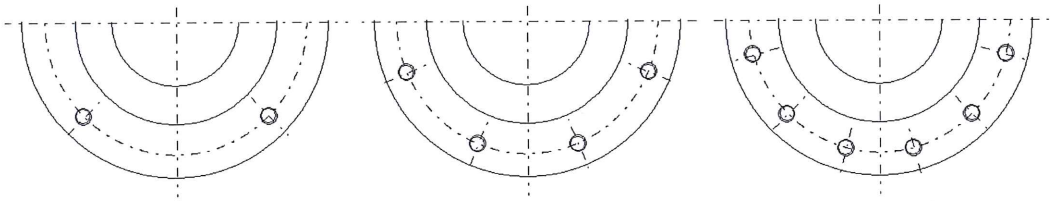


■ Dimension

Unit: mm

Model \ Dim	Base part									
	Type	Flange Size	ΦD	ΦD1	P.C.D D2	P.C.D N x H x DP	ΦD3	Z	Z1	Z2
BRM – 0	A	F10	28	70	102	4 x M10 x 15	125	2	8	55
BRM – 1		F12	38	85	125	4 x M12 x 18	150	2	8	70
BRM – 2		F14	50	100	140	4 x M16 x 24	175	3	10	85
BRM – 3		F16	60	130	165	4 x M20 x 30	210	4	5	90
BRM – 4		F16	75	130	165	4 x M20 x 30	210	4	11	100
BRM – 5	B	F20	75	160	205	8 x M16 x 24	251	4	11	100
BRM – 10		F25	100 (95)	200	254	8 x M16 x 24	300	4	8	115
BRM – 18		F30	115 (110)	230	298	8 x M20 x 30	350	4	6.5	145
BRM – 40		F35	150 (145)	260	356	8 x M30 x 45	415	4	4	190
BRM – 80		F40	180	300	406	8 x M36 x 50	475	7	9	230
BRM – 150	C	F48	220	370	483	12 x M36 x 70	560	7	11	315

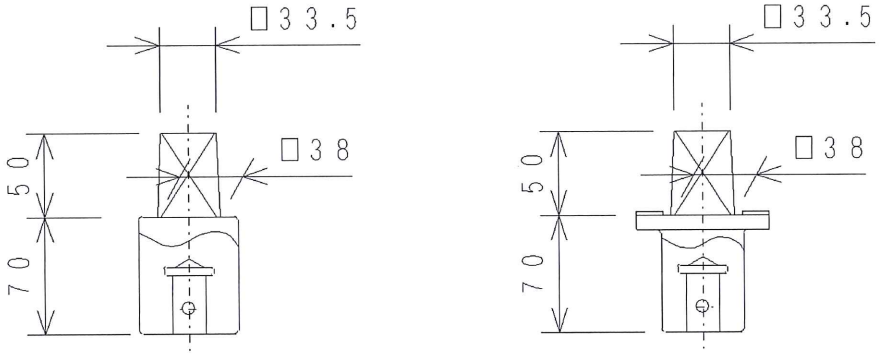
※Values in parentheses are for old-style JIS key.



Output flange type“A” Output flange type“B” Output flange type“C”

>> Cap type

■ Section view



CW “Open” CW “Close”

Note) Cap attachable to a manual type and a type of the height of the connecting parts is 70mm. Inquire for details information.

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Industrial Machine Division	**TEL +81-92-941-1509 FAX +81-92-941-1521**
Head Office & Factory	3-3-1 Eki-higashi, Koga, Fukuoka 811-3193 **TEL +81-92-941-1500 FAX +81-92-941-1511**
Tokyo Branch	2-26-11 Kameido, Koto-ku, Tokyo 136-0071 **TEL +81-3-5628-0011 FAX +81-3-5628-0022**
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Tokyo Service Center	1-13-2 Tajiri, Ichikawa, Chiba 272-0014 **TEL +81-47-378-7261 FAX +81-47-378-7266**
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