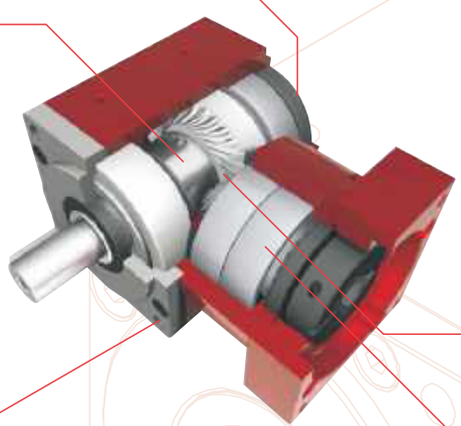
FEATURES

- Precision spiral bevel gears raise efficiency above 96%.
- Reduction ratios for transferring high torques in limited space.
- Hardened high strength steel components for reliability under severe conditions.
- All grease-filled, the gear head can be used in any orientation without oil leaks.
- Backlash under 5 arc-min low backlash design and 7 arc-min as standard backlash.
- Various of output options available in applications of automation and motion control in industries such as aerospace, medical, pharmaceutical, factory automation, printing, robotics, auto control system, automotive, textile equipment, semiconductor, manufacturing equipment, X-Y positioning systems, coordinate measuring, optical positioning equipment, telecommunications, packaging, material handling, assembly line, CCTV system, machine tools and special machinery, etc.

Axail compression mechanism to increase concentricity and ebgagement between shaft and bearing.

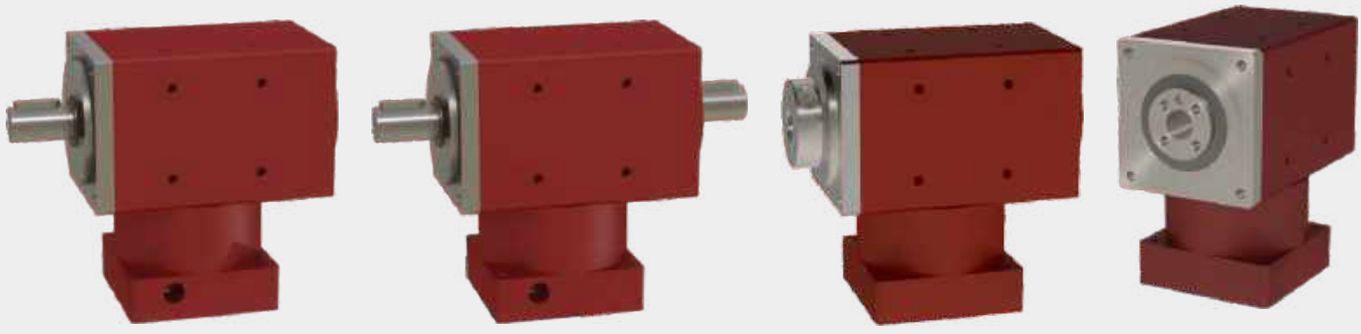
Patented design provides unique backlash adjustment.



Unique wear resistant treatment for spiral bevel reliability.

Patented output mount design for versatility.

Double ball bearing for stable operation at high speed.



MRB/MRL FEATURES

The compact and rigid right angle design ensures the highest performance while being space and weight efficient. Ground spiral bevel gear set provides the highest efficiency and lower meshing noise with long service life. Available with solid or hollow shafts on the output end. For output with a hollow shaft, the shaft is extended so a shrink disc can be fitted.

Lubricated for life, the gear reducers are virtually maintenance-free (When used under normal conditions).

Three frame sizes are available with gear ratios 1:1, 1:2, 1:3, 1:4 and 1:5

MZSR FEATURES

Quiet spiral teeth right angle gearbox

The rigid right angle design ensures the highest performance while ground spiral bevel gear set provides the highest efficiency and lower meshing noise with long service life.

Lubricated for life, the gear reducers are virtually maintenance-free (When used under normal conditions).

Two frame sizes are available with gear ratios from 1:3 to 1:100

MRB/MRL

TECHNICAL DATA

- Low noise
- Compact size and optimized weight
- Precision spiral gearing
- Optimized inertia moment
- Stable temperature rise
- High efficiency transmission
- Optimized design with special lubricant for long service life
- Flexible mounting dimensions

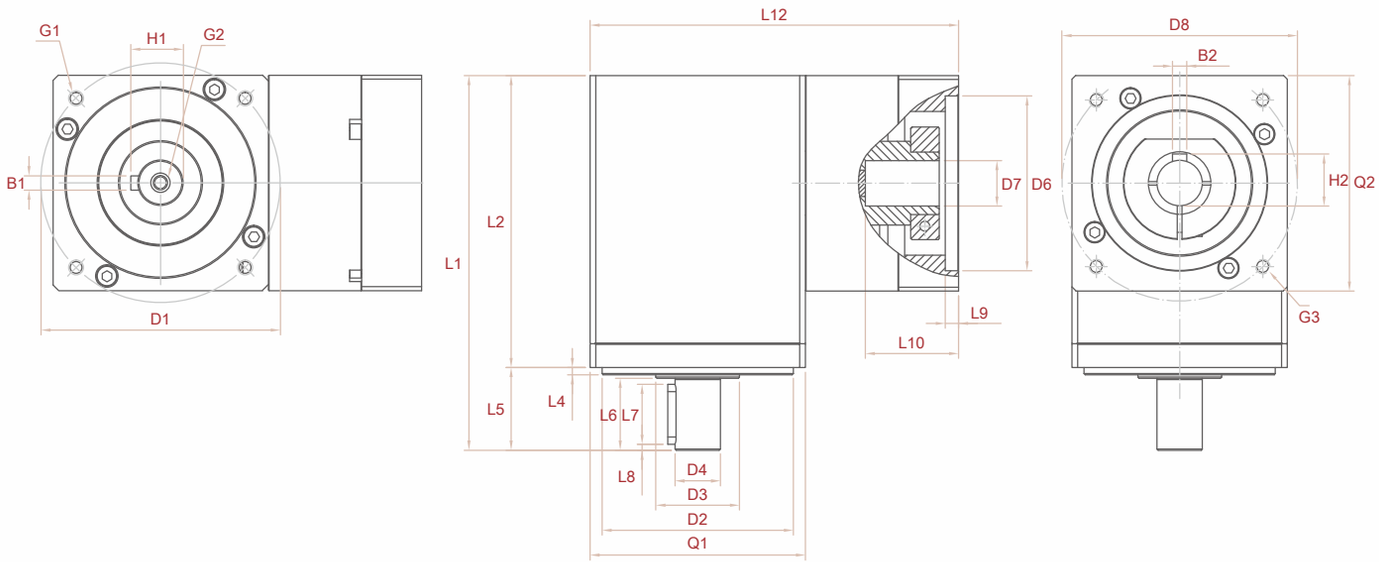
Model / Size		42	60	90
Full load efficiency	%	96		
Backlash	arcmin	<6	<6	<6
Noise	dB(A)	70	72	75
Lifetime	hr	20000		
Max radial load	N	600	800	1700
Max axial load	N	700	900	1500
Nominal Input Speed	rpm	4000	4000	3000
Max input speed	rpm	12000	8000	7000
Torsional stiffness	Nm/arcmin	1.5	2.4	6.6
Weight	kg	0.6	1.7	5.4
Operating temp.	℃	-25 ~ 90		
Degree of protection		IP 65		
Lubrication		Life lubrication		
Mounting direction		Any		

Model / Size		Ratio	42	60	90
Nominal output torque	Nm	1	10	26	73
		2	8	23	69
		3	5	21	54
		4	3	15	44
		5	3	14	43
MAX Output torque		2 times of Nominal Output Torque			

Model / Size		Ratio	42	60	90
Mass Moments of Inertia	$g\text{-}cm^2$	1	70	360	1910
		2	60	230	1050
		3	60	210	940
		4	60	210	900
		5	60	200	900

MRB

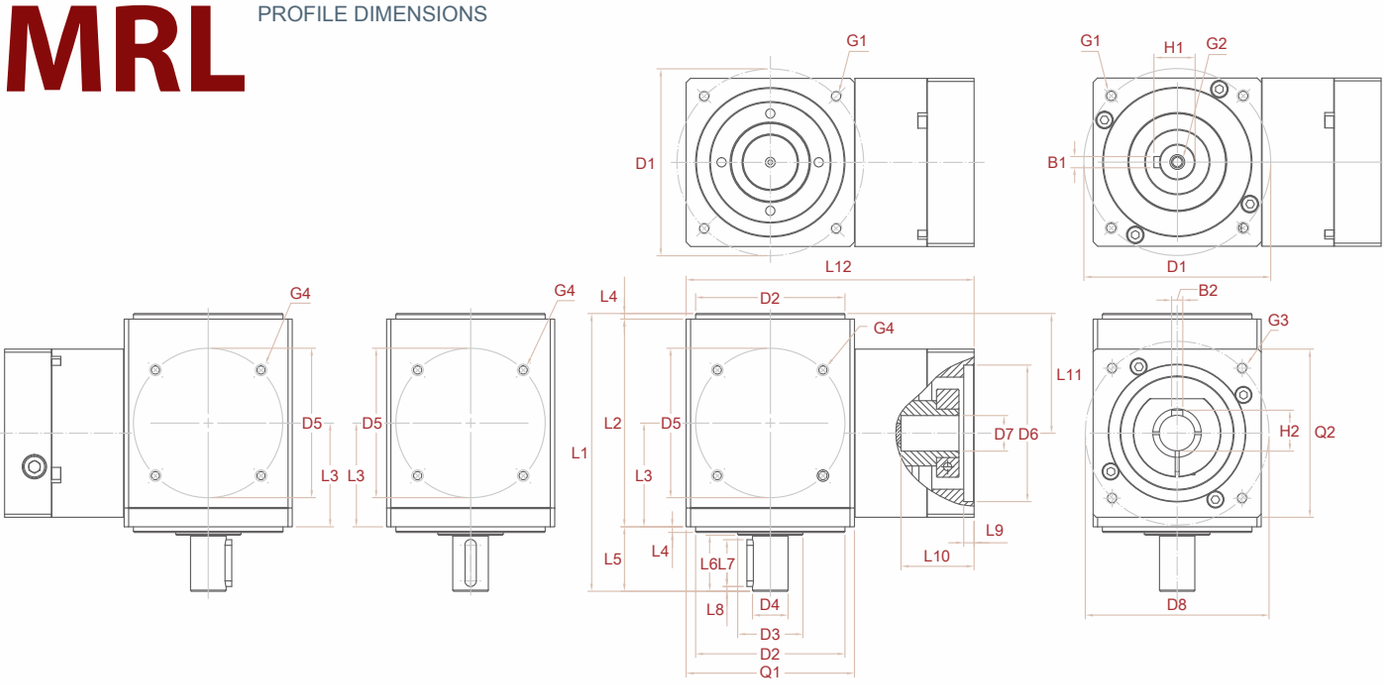
PROFILE DIMENSIONS



Model / Size			MRB-42		MRB-60	MRB-90
Output flange	Q1		☐42		☐60	☐90
Input flange	Q2		☐42		☐60	☐90
Output						
Overall length	L1		85		122	174
Body length	L2		65		94	139
Pilot length	L4		2.5		3	3
Output shaft length	L5		20		28	35
shaft shoulder to the shaft end	L6		17		24	31
Flat end length / Key length	L7		12		18	25
Key length to the shaft end	L8		2		2	2.5
Mounting hole circle	D1		Ø50		Ø70	Ø100
Pilot diameter	D2		Ø35 g6		Ø50 g6	Ø80 g6
shaft shoulder diameter	D3		Ø15		Ø20	Ø35
Output shaft diameter	D4		Ø10 h7		Ø14 h7	Ø19 h7
Key width	B1		3		5	6
Flat end height / Key Height	H1		11.2		16	21.5
mounting thread x depth	G1		M4x8		M5x12	M6x15
center screw hole x depth	G2		M4x8		M5x12	M6x15
Input						
Pilot depth	L9		3		5.5	5.5
motor shaft length	L10		25		30	40
Overall length	L12		75		105.3	154
Pilot diameter	D6		Ø30 G7	Ø22 G7	Ø50 G7	Ø38.1 G7	Ø70 G7
Input shaft diameter	D7		Ø8	Ø5	Ø14	Ø6.35	Ø19
Mounting hole circle	D8		Ø46	Ø43.84(☐31)	Ø70	Ø66.67(☐47.14)	Ø90
mounting thread x depth	G3		M4 x 10	Ø3.3	M5 x 12	M4 x 10	M6 x 12
Key width	B2		3	—	5	—	6
Key Height	H2		9.4	—	9.4	—	21.8

MRL

PROFILE DIMENSIONS



Model / Size			MRL-42		MRL-60		MRL-90
Output flange	Q1		□42		□60		□90
Input flange	Q2		□42		□60		□90
Output							
Overall length	L1		73.5		107		149
Body length	L2		51		76		111
Length from flange	L3		25.5		38		55.5
Pilot length	L4		2.5		3		3
Output shaft length	L5		20		28		35
shaft shoulder to the shaft end	L6		16.5		24		31
Flat end length / Key length	L7		12		18		25
Key length to the shaft end	L8		2		2		2.5
Mounting hole circle	D1		Ø50		Ø70		Ø100
Pilot diameter	D2		Ø35 g6		Ø50 g6		Ø80 g6
shaft shoulder diameter	D3		Ø15		Ø20		Ø35
Output shaft diameter	D4		Ø10 h7		Ø14 h7		Ø19 h7
Key width	B1		3		5		6
Flat end height / Key Height	H1		11.2		16		21.5
mounting thread x depth	G1		M4x10		M5x12		M6x15
center screw hole x depth	G2		M4x10		M5x12		M6x15
mounting thread x depth	G4		M3x6		M4x8		M5x10
Input							
Pilot depth	L9		3		5.5		5.5
motor shaft length	L10		25		30		40
Offset length	L11		29		44.5		64
Overall length	L12		73		105.3		154
Pilot diameter	D6		Ø30 G7	Ø22 G7	Ø50 G7	Ø38.1 G7	Ø70 G7
Input shaft diameter	D7		Ø8	Ø5	Ø14	Ø6.35	Ø19
Mounting hole circle	D8		Ø46	Ø43.84(□31)	Ø70	Ø66.67(□47.14)	Ø90
mounting thread x depth	G3		M4 x 10	Ø3.3	M5 x 12	M4 x 10	M6 x 12
Key width	B2		3	—	5	—	6
Key Height	H2		9.4	—	9.4	—	21.8

MZSR

TECHNICAL DATA

Model / Size		Stages	60	90
Full load efficiency	%	1	≥93	
		2	≥90	
Standard Backlash	arcmin	1	≤8	≤8
		2	≤10	≤10
Noise ②	dB(A)		≤70	≤70
Lifetime ①	hr		20000	
Max radial load	N		1530	3250
Max axial load	N		630	1300
Nominal Input Speed	rpm		5000	4000
Max input speed	rpm		10000	8000
Torsional stiffness	Nm/arcmin		7	14
Weight	kg	1	1.35	4.25
		2	1.7	7
Operating temp.	℃		-10 ~ 90	
Degree of protection			IP 65	
Lubrication			Synthetic lubrication	
Mounting direction			Any	

① Life reduced by half under continuous operation.
② Noise level measured on input running at 3000 rpm with no load (i = 5)

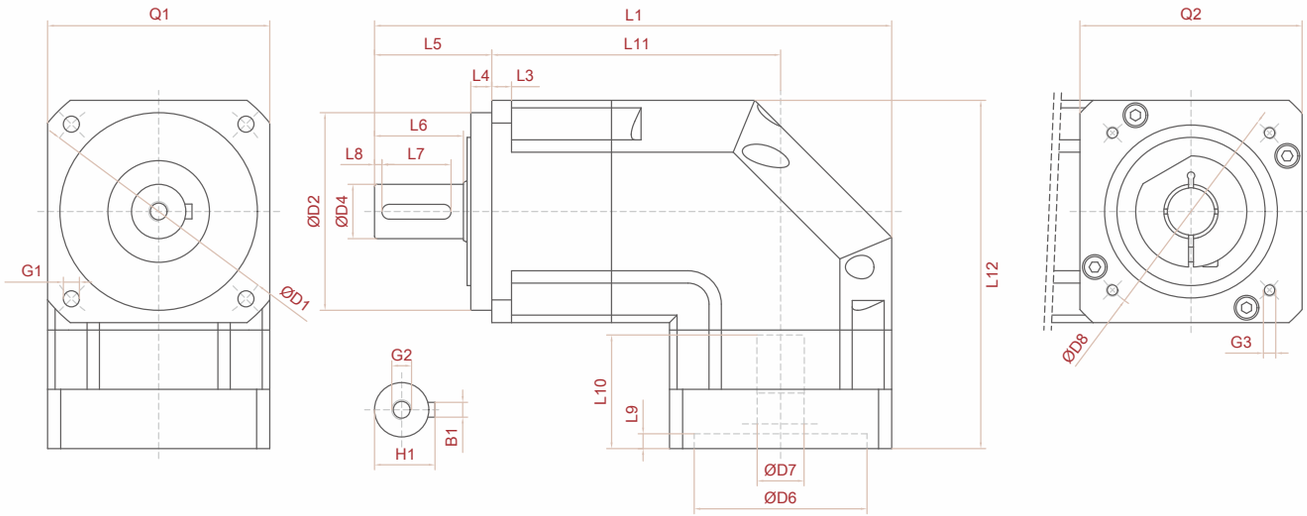
Model / Size		Stages	Ratio	60	90
Nominal output torque	Nm	1	3	55	130
			4	50	140
			5	60	160
			7	50	140
			10	40	100
		2	15	55	130
			20	50	140
			25	60	160
			30	55	150
			35	50	140
			40	50	140
			50	60	160
			70	50	140
			100	40	100
MAX Output torque		2.5 times of Nominal output torque			

Model / Size		Stages	Ratio	60	90
Mass Moments of Inertia	Kg-cm^2	1	3	0.16	0.61
			4	0.14	0.48
			5	0.13	0.47
			7	0.13	0.45
			10	0.13	0.44
		2	15,20,25	0.13	0.47
			35	0.13	0.45
			30,40,50	0.13	0.44
			70,100	0.13	0.13

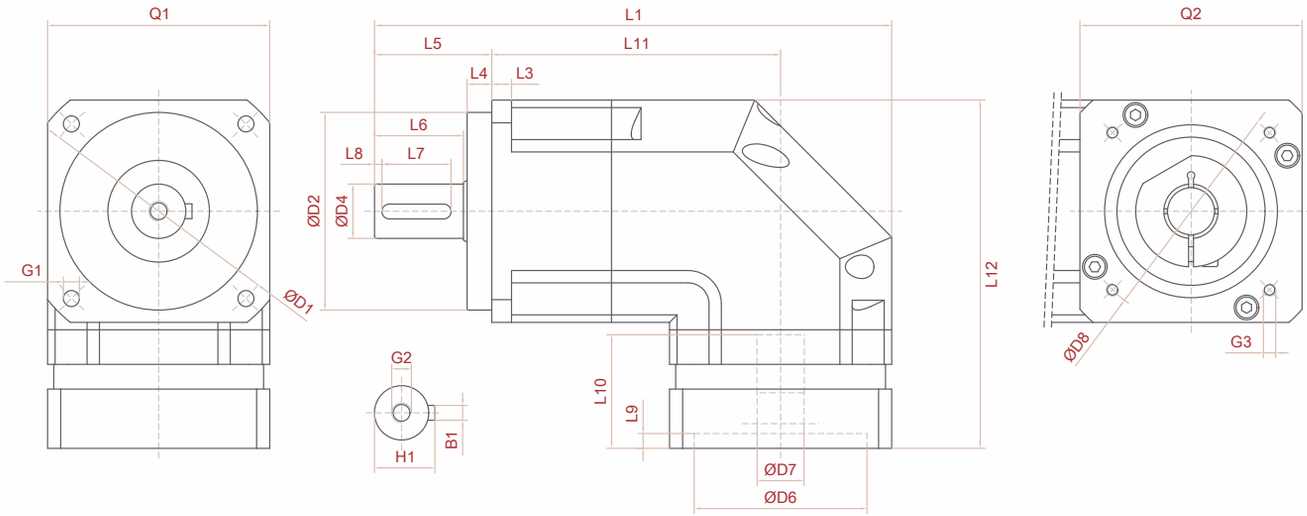
MZSR

PROFILE DIMENSIONS

MZSR-60



MZSR-90



MZSR

PROFILE DIMENSIONS

Model / Size	Stages		MZSR-60	MZSR-90
Overall length	1	L1	158	209.5
	2		178	242.5
Offset length	1	L11	91	117
	2		111	150
Output flange		Q1	□60	□90
Input flange		Q2	□60	□90
Output				
Length from flange		L3	8	8
Pilot length		L4	7	10
Output shaft length		L5	37	47.5
shaft shoulder to the shaft end		L6	28.5	36
Flat end length / Key length		L7	20	30
Key length to the shaft end		L8	3	3
Mounting hole circle		D1	Ø70	Ø100
Pilot diameter		D2	Ø50 g6	Ø80 g6
Output shaft diameter		D4	Ø16 g6	Ø22 g6
Key width		B1	5	6
Flat end height / Key Height		H1	18	24.5
mounting thread x depth		G1	Ø5.5	Ø6.5
center screw hole x depth		G2	M5	M8
Input				
Pilot depth		L9	6	6
motor shaft length		L10	32	46
Overall length		L12	105	141
Pilot diameter		D6	Ø50 G6	Ø70 G6
Input shaft diameter		D7	Ø14 G6	Ø19 G6
Mounting hole circle		D8	Ø70	Ø90
mounting thread x depth		G3	M4	M5