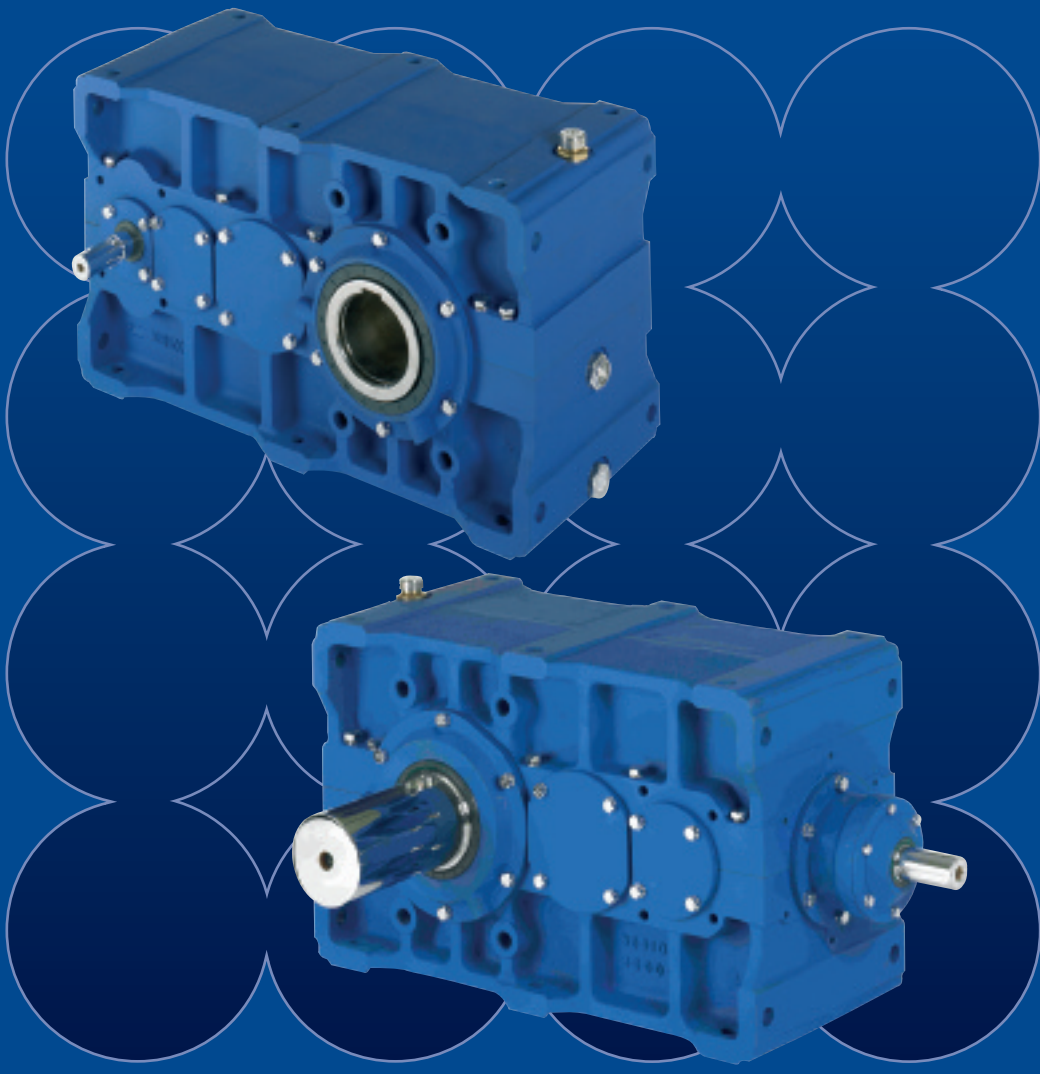
HC Series

Helical and Bevel-Helical Units



RENOLD

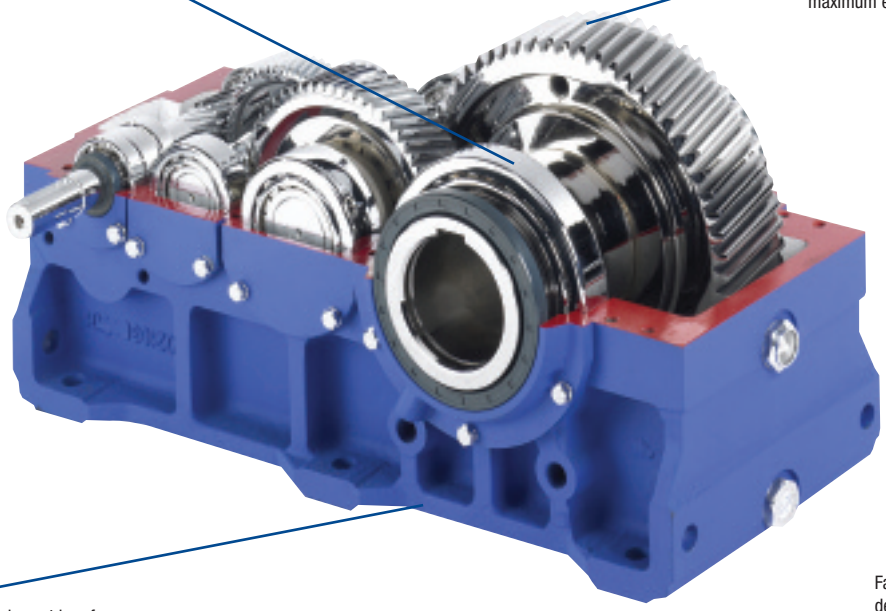
Superior Gear Technology

www.renold.com

HC Series - Helical

Heavy duty taper or self aligning bearings are used for maximum load capacity and long life.

Case hardened and profile ground helical gears with involute thread profile to give maximum power transmission, smooth operation and long life, with maximum efficiency.



All units are available with the option of output shaft, single or double extension, or hollow output for direct shaft mounting, suitable for all design options.

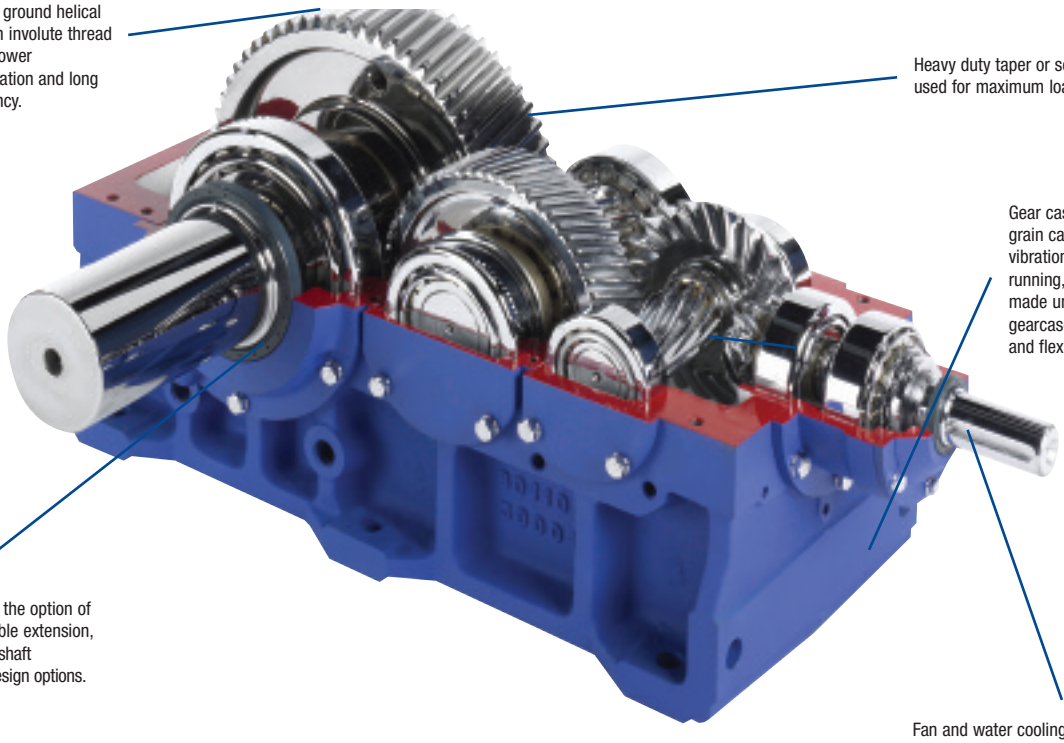
Gear cases manufactured in close grain cast iron for absorpsion of vibration and quietness of running, larger units and custom made units are housed in steel gearcases for maximum strength and flexibility of design.

Fan and water cooling are available as design and selection options to allow greater torques to be transmitted at higher input speeds.

HC Series - Bevel Helical

Case hardened and profile ground helical gears and bevel gears with involute thread profile to give maximum power transmission, smooth operation and long life, with maximum efficiency.

Heavy duty taper or self aligning bearings are used for maximum load capacity and long life.



Gear cases manufactured in close grain cast iron for absorpsion of vibration and quietness of running, larger units and custom made units are housed in steel gearcases for maximum strength and flexibility of design.

All units are available with the option of output shaft, single or double extension, or hollow output for direct shaft mounting, suitable for all design options.

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Contents

This catalogue cancels and replaces any previous edition and revision. All listed data are approximate and it's understood that this entails no obligation on our part. We reserve the right to implement modifications without notice.

ATEX Approval Details

ATEX Approval

RENOLD Gears products for operating in potentially explosive atmospheres.

General

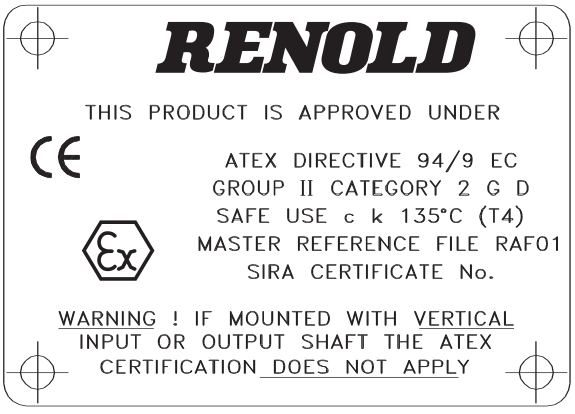
- **RENOLD** Gears units are classified as ATEX Group II Category 2 equipment, which embodies sufficient safeguards to be suitable for use in potentially explosive atmospheres for normal operation and for operation during an expected malfunction.
- It is essential that there is sufficient lubricant to prevent the gears and bearings running 'dry'. Gear units should be inspected daily for signs of oil leakage, overheating or noisy operation.
- Gear units should be cleaned at regular intervals depending on the operating conditions, to ensure that dust coatings never exceed 5mm. Plastic parts should be wiped clean with a damp cloth.
- Oil leaks should be dealt with as quickly as practical. Compound joint faces and shims should be cleaned and thread-locking sealant should be applied to bolts and plugs prior to re-assembly.
- The temperature of any external surfaces must not exceed the permitted maximum of 135°C (T4).
- Higher temperature class T3 is available dependant on unit mounting, ratio and gear type. For further details consult Renold.
- As a general rule, gear units should be mounted with their feet horizontal. For other mountings, particularly with shaft mounted units, consult **RENOLD** Gears.

WARNING: IF MOUNTING WITH VERTICAL INPUT OR OUTPUT SHAFTS, THE ATEX CERTIFICATION DOES NOT APPLY.

Unit Selection

- The gear unit selection procedures must include an additional reliability factor of 1.25 for mechanical ratings and 1.25 for thermal ratings.

ATEX Nameplate



HC Series – General Specification.

The Renold HC Series are available in Helical and Bevel helical variations.

To offer the maximum flexibility and width of choice the range has been developed and is offered in two product ranges. Utilising different gearing dimensions and external mounting dimensions, total flexibility with design is achieved.

Gearcases

The gear cases are of rigid close grained grey case iron construction, fabricated steel cases are available on larger sizes and where a custom made design is required.

Shafts

Standard shaft extensions are to metric dimensions, Agma dimensions to comply with the requirements of North America, and customer designs are available on request.

Gears

All gears are manufactured from High quality case hardening materials to provide long life, wear resistance and fatigue strength. Helical and spiral bevel gears are ground to give a quiet smooth transmission; gears are designed to ISO 6336 , Din 3990 and AGMA 2001 standards.

Bearings

Standard metric taper or spherical roller bearings are fitted throughout the HC series, sized generously to deliver long service life.

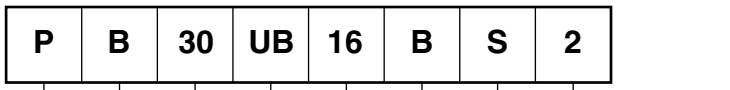
Lubrication

Gears and bearings are positively lubricated by oil from the sump when mounted in the horizontal position at normal motor speeds. For lower speeds and alternative mounting it may be necessary to provide grease or pump lubrication to the gears or bearings.

Cooling

The units in the HC series have high thermal capacities, where extra cooling is required additional fans or water cooling systems can be provided.

DESIGNATION



Mounting position

High speed shaft
- **S** solid
- **PAM** hollow+motor flange
- **B** solid+motor flange

Shaft arrangement

Transmission ratio i_N

Output shaft
- **S** solid
- **C** hollow
- **UB** hollow with shrink disc

Size

No. of stages
- **A** single reduction
- **B** double reduction
- **C** triple reduction
- **D** quadruple reduction

Type
- **P** helical unit
- **RH** horizontal bevel-helical unit
- **RV** vertical bevel-helical unit

KEY TO SYMBOLS

f_m	mechanical service factor	
i	transmission ratio	
i_N	nominal transmission ratio	
η	efficiency	
f_a	ambient correction factor	
n_1	high speed	min^{-1} or rpm
n_2	low speed	min^{-1} or rpm
P_t	thermal capacity	kW
P_{tN}	nominal thermal capacity	kW
P_N	nominal power	kW
P	absorbed motor power	kW
t	temperature	°C celsius
T	torque	Nm
T_N	nominal torque	Nm
Fr_1	high speed shaft overhung load	N
Fr_2	low speed shaft overhung load	N
J_1	high speed shaft mass moment of inertia	Kgm^2

EFFICIENCY (η)

99% Single reduction helical unit
98% Double reduction helical unit
98% Triple reduction helical unit
96% Quadruple reduction helical unit

97.5% Double reduction bevel-helical unit
96.5% Triple reduction bevel-helical unit
95.5% Quadruple reduction bevel-helical unit

MECHANICAL SERVICE FACTOR f_m

For stop-starts per hour exceeding 5, please refer to us.

Prime Mover	Duration of service (hrs/day)	Load classification		
		Uniform load	Moderate shock	Heavy shock
El. motor, steam turbine, hydraulic motor.	**< 3**	0.8	1.0	1.5
	3 - 10	1.0	1.25	1.75
	>10	1.25	1.5	2.0
Multi-cylinder internal combustion engine.	**< 3**	1.0	1.25	1.75
	3 - 10	1.25	1.5	2.0
Single-cylinder internal combustion engine.	**>10**	1.5	1.75	2.25
	< 3	1.25	1.5	2.0
	3 - 10	1.5	1.75	2.25
	>10	1.75	2.0	2.5

LOAD CLASSIFICATION

U Uniform load
M Moderate shock
H Heavy shock
***** refer to us

Driven machine	Type of load
Agitators	
pure liquids	U
liquids and solids	M
liquids-variable density	M
Blowers	
centrifugal	U
lobe	M
vane	U
Car pullers	M
Clarifiers	U
Clay working machinery	
brick press	H
briquette machine	H
clay working machinery	M
Compressors	
centrifugal	U
lobe	M
reciprocating	
multi-cylinder	M
single-cylinder	H
Conveyors-uniformly fed	
apron	U
assembly	U
belt	U
bucket	U
chain	U
screw	U
Conveyors-heavy duty	
apron	M
assembly	M
belt	M
bucket	M
chain	M
reciprocating	H
screw	M
shaker	H

Driven machine	Type of load
Cranes	
main hoist	*
bridge travel	*
trolley travel	*
Crushers	
ore	H
stone	H
sugar	H
Dredges	
conveyors	M
cutter head drives	H
pumps	M
screen drive	H
stackers	M
Elevators	
bucket-uniform load	U
bucket-heavy load	M
centrifugal discharge	U
gravity discharge	U
Fans	
centrifugal	U
cooling towers	
induced draft	M
forced draft	*
large, mining	M
large, industrial	M
light, small diameter	U
Feeders	
apron	M
belt	M
disc	U
reciprocating	H
screw	M

Driven machine	Type of load
Food industry	
slicers	M
cereal cooker	U
dough mixer	M
meat grinders	M
Generators	U
Hoists	
heavy duty	H
medium duty	M
Laundry tumblers	M
Lumber industry	
de-barkers	M
burner conveyor	M
chain saw, drag saw	H
chain transfer	H
craneway transfer	H
conveyor	M
slab conveyor	H
conveyor-belt	U
conveyor-chain	M
tipple hoist conveyor	M
tipple hoist drive	M
waste conveyor	
Machine tools	
bending roll	M
punch press-gear driven	H
plate planers	H
tapping machine	H
other machine tools	
main drives	M
auxiliary drives	U
Metal mills	
slitters	M
table conveyors	
non-reversing	M
reversing	*
wire winding machine	M
Mixers	
concrete mixer	M
constant density	U
variable density	M
Oil well pumping	*
Paper mills	
agitators	M
de-barkers-hydraulic	M
de-barkers-mechanical	H
barking drum	H
bleacher	U
calenders	M
conveyors	U
cutters-plates	M

Driven machine	Type of load
cylinders	M
dryers	M
felt stretcher	M
felt wipper	H
jordans	M
Printing press	U
Pumps	
centrifugal	U
proportioning	M
reciprocating	
single acting >2 cylinders	M
single acting <3 cylinders	*
double acting >1 cylinder	M
double acting 1 cylinder	*
rotary,gear, lobe type	U
Rubber and plastics	
crackers	H
refiners	M
rubber calenders	M
films extruders	U
sheets extruders	U
extruders	U
Sand muller	M
Sewage disposal equip.	
bar screeners	U
chemical feeders	U
dewatering screws	M
scum breakers	M
mixers	M
thickeners	M
vacuum filter	M
Screens	
air washing	M
rotary-stone or gravel	U
travelling water intake	M
Sugar industry	
cane and beet knives	M
crushers	M
pulp conveyors	M
Textile industry	
calenders	M
cards	M
dryers	M
dyeing machinery	M
knitting machines	*
looms	M
mangles	M
soapers	M
spinners	M
washers	M

THERMAL CAPACITY

Nominal thermal capacities P_{tN}

The tables below show the values of the thermal capacities under different cooling conditions, viz : natural cooling, fan cooling and coil cooling. Values apply to an ambient temperature of 20°C. For different ambient temperatures, the nominal thermal capacity Ptn can be obtained by multiplying the thermal capacity P_t for the selected type of cooling, by the ambient thermal factor f_a. Whenever a high heat dissipation level is required together with high operational reliability, it is recommended to consider the application of a water-oil or air-oil heat exchanger.

$$P_{tN} = P_t \times f_a$$

f_a ambient correction factor

Ambient temperature	w/o auxiliary cooling	Auxiliary cooling
10 °C	1,14	1,04
20 °C	1	1
30 °C	0,86	0,94
40 °C	0,72	0,89
50 °C	0,56	0,83

Thermal capacity (kW)

A - No auxiliary cooling

	n_1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1750	60	77	100	122	155	190	226	289	359	437	547					
	1500	55	72	93	115	148	180	212	271	338	408	505					
	1000	52	68	88	109	140	170	200	256	320	386	477					
	750	51	67	86	107	137	167	195	251	313	377	467					
PB	1750	33	44	57	72	94	116	136	175	223	275	345	429	549	683	835	1045
	1500	30	40	52	66	86	106	125	163	206	252	316	395	502	630	768	960
	1000	28	38	49	63	82	100	119	156	197	240	301	378	481	603	732	914
	750	27	36	47	59	77	95	112	147	185	227	284	356	452	567	691	864
PC	1750	25	34	44	56	72	89	107	138	177	217	275	349	441	538	678	848
	1500	23	31	40	51	66	82	98	127	162	199	252	320	405	494	622	778
	1000	21	29	37	47	61	76	91	118	151	185	234	298	377	459	578	724
	750	21	28	36	46	59	74	88	114	146	179	227	288	365	445	560	700
PD	1750	20	26	35	44	57	71	85	111	142	175	223	279	354	457	558	698
	1500	18	24	32	40	52	65	78	102	130	161	205	256	325	419	512	640
	1000	17	22	29	37	48	60	72	94	120	148	189	236	299	385	471	589
	750	16	22	29	36	47	59	70	92	117	145	185	230	293	377	461	576

	n_1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	1750	33	44	57	72	94	116	136	175	223	275	345	429	549	683	835	1045
	1500	30	40	52	66	86	106	125	163	206	252	316	395	502	630	768	960
	1000	28	38	49	63	82	100	119	156	197	240	301	378	481	603	732	914
	750	27	36	47	59	77	95	112	147	185	227	284	356	452	567	691	864
RC	1750	25	34	44	56	72	89	107	138	177	217	275	349	441	538	678	848
	1500	23	31	40	51	66	82	98	127	162	199	252	320	405	494	622	778
	1000	21	29	37	47	61	76	91	118	151	185	234	298	377	459	578	724
	750	21	28	36	46	59	74	88	114	146	179	227	288	365	445	560	700
RD	1750	20	26	35	44	57	71	85	111	142	175	223	279	354	457	558	698
	1500	18	24	32	40	52	65	78	102	130	161	205	256	325	419	512	640
	1000	17	22	29	37	48	60	72	94	120	148	189	236	299	385	471	589
	750	16	22	29	36	47	59	70	92	117	145	185	230	293	377	461	576

Thermal capacity (kW)

B - Fan cooling

	n_1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1750	87	112	145	177	225	276	328	419	521	634	793					
	1500	80	104	135	167	215	261	307	393	490	592	732					
	1000	75	99	128	158	203	247	290	371	464	560	692					
	750	74	97	125	155	199	242	283	364	454	547	677					
PB	1750	48	64	83	104	136	168	197	254	323	399	500	622	796	990	1211	1515
	1500	44	58	75	96	125	154	181	236	299	365	458	573	728	914	1114	1392
	1000	41	55	71	91	119	145	173	226	286	348	436	548	697	874	1061	1325
	750	39	52	68	86	112	138	162	213	268	329	412	516	655	822	1002	1253
PC	1750	36	49	63	81	104	130	155	201	256	315	398	506	640	781	983	1230
	1500	33	45	58	74	96	119	142	184	235	289	365	464	587	716	902	1128
	1000	31	42	54	69	89	111	132	171	218	268	340	432	546	666	839	1049
	750	30	40	52	67	86	107	128	166	211	260	329	418	529	645	812	1015

With 2 fans, multiply by 1.2

	n_1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	1750	50	66	86	108	141	174	204	263	335	413	518	644	824	1025	1253	1568
	1500	45	60	78	99	129	159	188	245	309	378	474	593	753	945	1152	1440
	1000	42	57	74	95	123	150	179	234	296	360	452	567	722	905	1098	1371
	750	41	54	71	89	116	143	168	221	278	341	426	534	678	851	1037	1296
RC	1750	38	51	65	83	108	134	160	208	265	325	412	523	662	808	1017	1272
	1500	35	47	60	77	99	123	147	191	243	299	378	480	608	741	933	1167
	1000	32	43	56	71	92	114	137	177	226	278	352	446	565	689	868	1085
	750	31	42	54	69	89	111	132	171	219	269	340	432	547	667	840	1050
RD	1750	29	39	52	65	85	106	128	167	213	263	335	419	531	685	837	1046
	1500	27	36	48	60	78	98	117	153	195	242	308	384	488	629	768	960
	1000	25	33	44	55	72	90	108	141	179	222	283	353	449	578	707	883
	750	24	32	43	54	70	88	105	138	176	217	277	346	439	566	691	864

C - Cooling coil

	n_1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1750	87	112	145	177	225	276	328	419	521	634	793					
	1500	80	104	135	167	215	261	307	393	490	592	732					
	1000	75	99	128	158	203	247	290	371	464	560	692					
	750	74	97	125	155	199	242	283	364	454	547	677					
PB	1750	48	64	83	104	136	168	197	254	323	399	500	622	796	990	1211	1515
	1500	44	58	75	96	125	154	181	236	299	365	458	573	728	914	1114	1392
	1000	41	55	71	91	119	145	173	226	286	348	436	548	697	874	1061	1325
	750	39	52	68	86	112	138	162	213	268	329	412	516	655	822	1002	1253
PC	1750	36	49	63	81	104	130	155	201	256	315	398	506	640	781	983	1230
	1500	33	45	58	74	96	119	142	184	235	289	365	464	587	716	902	1128
	1000	31	42	54	69	89	111	132	171	218	268	340	432	546	666	839	1049
	750	30	40	52	67	86	107	128	166	211	260	329	418	529	645	812	1015

	n_1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	1750	48	64	83	104	136	168	197	254	323	399	500	622	796	990	1211	1515
	1500	44	58	75	96	125	154	181	236	299	365	458	573	728	914	1114	1392
	1000	41	55	71	91	119	145	173	226	286	348	436	548	697	874	1061	1325
	750	39	52	68	86	112	138	162	213	268	329	412	516	655	822	1002	1253
RC	1750	36	49	63	81	104	130	155	201	256	315	398	506	640	781	983	1230
	1500	33	45	58	74	96	119	142	184	235	289	365	464	587	716	902	1128
	1000	31	42	54	69	89	111	132	171	218	268	340	432	546	666	839	1049
	750	30	40	52	67	86	107	128	166	211	260	329	418	529	645	812	1015
RD	1750	28	38	51	63	82	103	123	161	205	254	324	405	514	662	809	1012
	1500	26	35	46	58	75	94	113	148	189	233	297	371	471	608	742	928
	1000	24	32	43	53	69	87	104	136	173	215	273	342	434	559	683	854
	750	23	31	42	52	68	85	102	133	170	210	268	334	424	547	668	835

P Series - Helical units - Nominal power rating (kW)

	i_N	n_1	n_2 min^{-1}	Size 10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1.12	1500	1339	301	416	587	824	1212	1661	2424	3385	4709	6679	9723					
		1000	893	220	296	410	578	856	1173	1702	2381	3316	4695	6847					
		750	670	165	229	321	447	656	901	1312	1836	2550	3619	5273					
	1.25	1500	1200	295	398	563	788	1181	1610	2321	3257	4529	6418	9394					
		1000	800	214	299	417	584	865	1183	1710	2394	3336	4720	6912					
		750	600	167	224	319	450	662	906	1314	1834	2558	3622	5307					
	1.4	1500	1071	286	389	548	772	1142	1573	2255	3148	4395	6229	9174					
		1000	714	198	275	388	537	800	1094	1580	2206	3072	4354	6411					
		750	536	155	212	302	419	629	861	1236	1729	2410	3416	5024					
	1.6	1500	938	265	357	509	708	999	1453	2071	2897	4049	5735	8031					
		1000	625	190	258	366	519	732	1057	1510	2108	2945	4175	5848					
		750	469	148	204	284	399	564	818	1163	1627	2274	3221	4510					
	1.8	1500	833	236	326	461	647	927	1337	1893	2654	3706	5258	7392					
		1000	556	181	248	349	485	689	1001	1413	1981	2766	3919	5517					
		750	417	136	186	266	372	526	765	1083	1513	2119	3001	4217					
	2	1500	750	224	305	432	597	856	1250	1755	2452	3431	4860	6867					
		1000	500	166	224	319	445	639	926	1304	1822	2549	3611	5102					
		750	375	124	172	243	342	487	711	994	1390	1947	2760	3901					
	2.25	1500	667	205	282	394	553	793	1161	1608	2250	3153	4467	6344					
		1000	444	150	207	290	410	584	856	1190	1664	2332	3305	4693					
		750	333	116	159	221	311	449	653	910	1273	1780	2524	3582					
	2.5	1500	600	198	271	382	537	771	1058	1571	2178	3049	4324	6158					
		1000	400	141	189	272	380	544	748	1100	1540	2162	3060	4358					
		750	300	112	152	214	301	431	593	874	1224	1715	2427	3458					
	2.8	1500	536	172	236	333	468	675	928	1368	1896	2656	3767	5398					
		1000	357	130	176	248	350	508	697	1015	1425	1996	2827	4053					
		750	268	101	138	195	271	392	540	790	1103	1548	2194	3143					
	3.15	1500	476	149	203	309	435	587	866	1169	1635	2471	3504	4691					
		1000	317	112	152	231	325	441	651	875	1229	1857	2630	3522					
		750	238	87	119	181	254	343	507	684	959	1450	2054	2748					
	3.55	1500	423	137	188	265	373	545	749	1081	1511	2119	3005	4355					
		1000	282	104	140	198	279	409	563	809	1136	1593	2256	3270					
		750	211	80	110	155	218	319	438	632	886	1244	1761	2552					
	4	1500	375	128	174	265	373	508	698	998	1397	2135	3026	4060					
		1000	250	88	119	185	258	349	481	686	960	1470	2084	2796					
		750	188	68	93	145	201	274	378	538	753	1152	1633	2191					
	4.5	1500	333	117	159	226	316	471	648	918	1286	1806	2559	3764					
		1000	222	80	108	155	218	323	446	631	883	1241	1757	2587					
		750	167	62	87	122	170	253	349	494	692	972	1377	2027					
	5	1500	300	96	131	186	262	394	540	760	1064	1498	2119	3139					
		1000	200	66	90	126	179	267	367	517	724	1017	1442	2134					
		750	150	50	69	98	136	203	282	396	553	777	1102	1632					
	5.6	1500	268	78	107	151	210	288	441	613	858	1209	1712	2303					
		1000	179	54	73	104	144	197	302	422	590	828	1174	1580					
		750	134	40	56	80	111	152	231	322	452	634	900	1211					
PB	6.3	1500	238	83	108	165	221	320	454	644	880	1324	1796	2547	3100	4342	6003	8893	11914
		1000	159	57	76	113	153	220	331	443	605	911	1236	1754	2134	2988	4132	6120	8199
		750	119	43	57	86	116	166	237	336	459	691	936	1328	1617	2264	3130	4638	6214
	7.1	1500	211	73	102	146	196	281	401	569	828	1177	1587	2243	2757	3858	5665	7964	10598
		1000	141	50	71	101	135	194	277	392	570	810	1092	1545	1896	2655	3898	5481	7295
		750	106	38	53	77	102	146	210	297	432	614	827	1170	1437	2012	2955	4153	5527
	8	1500	188	64	90	130	184	264	353	501	731	1043	1489	2102	2440	3418	5032	7094	9967
		1000	125	44	63	89	127	181	243	345	419	718	1025	1448	1680	2352	3463	4882	6858
		750	94	33	48	69	97	138	187	265	386	550	785	1108	1286	1800	2651	3738	5251
	9	1500	167	56	81	116	165	235	315	446	652	936	1328	1871	2187	3062	4525	6412	8957
		1000	111	39	55	79	111	156	213	302	442	634	900	1267	1482	2074	3065	4343	6065
		750	83	30	42	61	86	123	165	233	342	490	696	980	1146	1604	2370	3359	4691
	10	1500	150	53	71	102	144	219	294	433	570	822	1160	1627	2049	2869	3982	5660	7875
		1000	100	36	48	69	97	148	199	282	386	557	786	1102	1388	1944	2696	3833	5334
		750	75	28	37	54	75	115	154	218	299	430	607	852	1074	1503	2086	2965	4125
	11.2	1500	134	46	66	89	134	190	255	361	532	717	1081	1512	1791	2506	3726	4976	7367
		1000	89	31	45	60	90	128	173	244	360	486	733	1024	1212	1697	2524	3370	4989
		750	67	24	35	47	70	99	134	189	279	376	566	792	938	1312	1952	2606	3859
	12.5	1500	120	44	58	84	117	165	240	340	467	679	949	1318	1694	2371	3295	4730	6505
		1000	80	29	40	58	80	112	164	232	318	462	646	897	1153	1613	2243	3219	4427
		750	60	23	30	45	62	86	126	179	246	357	499	693	891	1247	1733	2488	3422
	14	1500	107	37	54	73	108	152	205	291	432	584	878	1216	1458	2041	3062	4102	6052
		1000	71	25	37	50	74	103	140	198	295	398	598	827	993	1389	2084	2792	4119
		750	54	19	28	39	57	80	108	153	228	307	462	639	767	1074	1611	2158	3183
	16	1500	94	34	46	67	92	128	189	267	367	540	745	1023	1346	1885	2622	3798	5190
		1000	63	24	31	47	64	89	131	186	255	375	517	710	935	1308	1821	2638	3590
		750	47	18	24	36	50	69	101	143	197	290	399	548	722	1010	1406	2037	2772
	18	1500	83	31	43	58	86	119	161	250	344	465	696	951	1158	1770	2463	3303	4157
		1000	56	22	29	40	60	83	111	173	238	322	483	660	804	1227	1709	2291	3370
		750	42	17	23	31	46	64	86	134	184	249	373	519	620	948	1319	1769	2601
	20	1500	75	26	39	53	78	108	146	207	313	424	635	862	1054	1476	2256	3027	4449
		1000	50	18	27	37	55	75	101	143	217	294	423	598	731	1024	1565	2100	3087
		750	38	14	20	28	41	57	77	108	164	223	333	452	553	774	1183	1588	2334
	22.5	1500	67			48			131	186	256	385	518	776	951	1331	1844		3636
		1000	44			33			91	129	177	267	345	538	660	924	1280		2522
		750	33			25			69	97	134	202	271	407	498	698	967		1909
	25	1500	60											692					
		1000	40											481					
		750	30											363					

P Series - Helical units - Nominal power rating (kW)

	i_N	n_1	n_2 min^{-1}	Size 10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PC	22.5	1500	67	25	35		68	100										3130	
		1000	44	17	24		46	68										2125	
		750	33	13	18		35	52										1617	
	25	1500	60	22	31	47	65	90	129	176	254	369	520		1044	1410	2015	2955	4097
		1000	40	15	21	31	43	61	88	120	172	251	353		709	958	1369	2008	2784
		750	30	11	16	24	33	47	67	91	131	191	269		540	729	1042	1528	2118
	28	1500	54	21	27	41	57	80	115	167	226	329	464	640	935	1331	1793	2639	3655
		1000	36	14	19	28	39	54	78	113	153	224	315	435	635	904	1218	1793	2483
		750	27	11	14	21	30	41	60	86	117	170	240	331	483	688	927	1364	1889
	31.5	1500	48	19	26	37	51	76	104	148	200	294	413	569	836	1184	1591	2347	3254
		1000	32	13	17	25	35	51	70	101	136	199	280	386	568	805	1081	1595	2210
		750	24	9.7	13	19	26	39	53	77	104	152	213	284	432	612	824	1213	1682
	35.5	1500	42	17	23	33	45	67	92	131	189	261	366	504	746	1051	1498	2087	2883
		1000	28	11	16	22	31	46	62	89	128	177	249	343	507	714	1017	1418	1959
		750	21	8.6	12	17	23	35	48	68	98	135	189	261	385	543	774	1079	1490
	40	1500	38	15	20	29	40	59	82	116	166	231	324	474	662	929	1323	1850	2549
		1000	25	10	14	19	27	40	56	79	113	157	220	322	450	631	898	1256	1731
		750	18.8	7.5	11	15	21	31	42	60	86	119	267	245	342	480	683	956	1317
	45	1500	33	13	18	26	35	52	72	102	146	204	285	417	586	817	1162	1631	2244
		1000	22	8.8	12	17	24	35	49	69	99	139	193	283	398	555	789	1108	1524
		750	16.7	6.8	9.2	13	18	27	37	53	76	105	147	216	303	422	601	843	1160
	50	1500	30	12	17	24	33	45	64	96	137	191	266	365	515	764	1086	1527	2098
		1000	20	8.2	11	16	22	31	43	65	93	130	181	248	349	519	738	1037	1425
		750	15	6.3	9	12	17	24	33	49	71	99	137	189	266	395	516	789	1084
	56	1500	27	11	14	21	29	43	59	83	119	167	232	340	481	665	944	1333	1823
		1000	17.9	7.1	10	14	19	29	40	56	81	113	157	231	327	452	641	905	1239
		750	13.4	5.5	7.5	11	15	22	31	43	61	86	120	176	249	344	488	689	943
	63	1500	24	9.8	13	20	27	37	52	77	110	155	215	293	417	617	876	1242	1695
		1000	15.9	6.7	9.1	13	18	25	35	52	75	106	146	199	284	419	595	844	1152
		750	11.9	5	7	10	14	19	27	40	57	80	111	151	216	319	453	642	876
	71	1500	21	8.3	11	17	23	34	48	66	94	134	184	270	387	528	749	1070	1450
		1000	14	5.7	7.7	11	15	23	32	45	64	91	125	184	263	359	509	727	985
		750	10.6	4.4	5.9	9	12	18	25	34	49	69	95	140	200	273	387	553	749
	80	1500	18.8	7.8	11	16	21	31	41	61	87	123	169	249	329	486	689	988	1334
		1000	12.5	5.2	7.2	11	14	21	28	41	59	84	115	169	224	330	468	671	906
		750	9.4	4	5.4	8	11	16	21	31	45	64	87	129	170	251	356	511	689
	90	1500	16.7	7.1	9.7	13	19	26	37	56	79	104	155	208	302	445	630	832	1221
		1000	11	4.8	6.6	8.9	13	18	25	38	54	71	105	141	205	302	428	565	830
		750	8.3	3.7	5	6.8	9,9	13	19	29	41	54	80	107	156	230	326	430	631
	100	1500	15	6.5	8.8	12	17		34	50	65	94	140	187	275	405	519	757	1112
		1000	10	4.3	6	8.1	12		23	34	44	64	95	127	187	275	353	515	756
		750	7.5	3.3	4.6	6.1	9		17	26	33	49	73	97	142	209	268	392	575
PD	100	1500	15					25											
		1000	10					17											
		750	7.5					13											
	112	1500	13.4	5.7	7.6	11	16	22	30	45	62	87	125	178	244	359	495	694	985
		1000	8.9	3.9	5.1	7.4	10	15	20	30	42	59	85	121	165	244	336	471	669
		750	6.7	2.9	3.9	5.6	7.9	11	15	23	32	44	64	92	125	184	254	356	506
	115	1500	12	5	6.8	9.7	14	20	28	40	56	82	111	159	230	320	442	656	878
		1000	8	3.4	4.6	6.6	9.3	13	19	27	38	56	76	108	156	217	300	446	596
		750	6	2.5	3.5	5	7	10	15	20	28	42	57	81	117	163	226	335	448
	140	1500	10.7	4.5	6.1	9.2	12	18	25	36	53	74	99	141	205	285	417	588	781
		1000	7.1	3.1	4.1	6.2	8.3	12	17	24	36	50	67	95	139	193	282	398	529
		750	5.4	2.3	3.1	4.7	6.2	8.9	13	18	27	37	50	71	104	144	212	299	396
	160	1500	9.4	4	5.5	7.7	11	16	23	32	44	62	88	125	182	253	350	497	693
		1000	6.3	2.6	3.7	5.2	7.3	10	15	21	30	42	59	84	122	170	235	334	466
		750	4.7	2	2.8	3.9	5.5	7.8	11	16	22	31	44	63	92	127	177	251	350
	180	1500	8.3	3.6	4.9	6.9	9.6	14	20	28	42	55	78	110	161	223	329	442	612
		1000	5.6	2.4	3.3	4.6	6.4	9.2	13	19	28	37	52	73	108	149	220	295	409
		750	4.2	1.8	2.5	3.5	4.8	6.9	10	14	21	28	39	55	81	112	165	222	307
	200	1500	7.5	3.2	4.4	6.5	9	13	18	24	37	52	73	103	142	196	291	416	575
		1000	5	2.1	2.9	4.3	6	8.5	12	16	24	35	49	68	95	130	194	278	384
		750	3.8	1.6	2.2	3.3	4.5	6.4	8,8	12	18	26	36	51	71	98	145	208	288
	225	1500	6.7	2.9	3.9	5.7	7.8	11	16	23	32	46	64	89	133	182	253	366	501
		1000	4.5	1.9	2.6	3.8	5.2	7.4	11	15	21	31	42	59	88	122	169	244	334
		750	3.3	1.4	1.9	2.9	3.9	5.6	8,2	11	16	23	32	44	66	91	127	183	250
	250	1500	6	2.6	3.6	5	7.3	10	14	21	30	40	59	82	115	170	236	320	466
		1000	4	1.7	2.4	3.3	4.9	6.9	9.5	14	20	27	39	55	77	113	157	213	311
		750	3	1.3	1.8	2.5	3.7	5.2	7.1	11	15	20	30	41	57	85	118	160	233
	280	1500	5.4	2.3	3.2	4.7	6.3	8.8	13	18	26	37	51	70	107	146	203	298	400
		1000	3.6	1.5	2.1	3.1	4.2	5.9	8.8	12	17	25	34	47	71	97	135	199	267
		750	2.7	1.1	1.6	2.3	3.1	4.3	6.6	9.1	13	19	25	35	53	73	101	149	200
	315	1500	4.8	2.1	2.7	4	5.8	8.1	11	17	24	32	47	65	91	134	187	256	369
		1000	3.2	1.4	1.8	2.7	3.9	5.4	7.5	11	16	21	31	43	61	90	125	171	246
		750	2.4	1.1	1.4	2	2.9	4	5.6	8.4	12	16	23	32	46	67	93	128	185
	355	1500	4.2	1.9	2.5	4	4.9	7.4	10	14	20	30	39	59	84	113	158	237	311
		1000	2.8	1.2	1.7	2.5	3.2	4.9	6.9	9.4	14	20	26	39	56	75	105	158	207
		750	2.1	0.9	1.3	1.9	2.4	3.7	5.2	7.1	10	15	20	30	42	57	79	118	155
	400	1500	3.8	1.6	2.1	3.1	4.4	6.1	8.6	13	19	25	36	49	70	103	144	200	283
		1000	2.5	1.1	1.4	2.1	3	4.1	5.8	8.6	13	17	24	33	47	69	96	133	189
		750	1.9	0.8	1.1	1.6	2.2	3.1	4.3	6.5	9,4	12	18	24	35	52	72	100	142
	450	1500	3.3	1.5	1.9	2.8	4		7.8	12	17	23	33	44	63	94	130	182	257
		1000	2.2	1	1.3	1.9	2.7		5.2	7.8	11	15	22	29	42	62	87	122	171
		750	1.7	0.7	1	1.4	2		3.9	5.8	8.5	11	16	22	32	47	65	91	128
	500	1500	3	1.2	1.8	2.6			7	11	15	21	29	39	57	84	117	165	231
		1000	2	0.8	1.2	1.7			4.7	7	10	14	20	26	38	56	78	110	154
		750	1.5	0.6	0.9	1.3			3.5	5.3	7.7	10	15	20	29	42	59	83	116

RH • RV Series - Bevel-helical units - Nominal power rating (kW)

	i_N	n_1	n_2 min^{-1}	Size 10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RHB RVB	5	1500	300	75	107	147	207	287	401	573	814	1186	1698	2363					
		1000	200	50	74	100	140	193	272	388	553	805	1153	1606					
		750	150	39	55	77	107	148	207	296	420	612	878	1221					
	5.6	1500	268	73	106	146	209	287	400	571	812	1186	1698	2363					
		1000	179	51	73	99	141	193	273	389	551	805	1154	1606					
		750	134	38	55	76	107	148	207	295	419	612	877	1222					
	6.3	1500	238	74	108	147	209	285	401	572	814	1187	1697	2363					
		1000	159	51	75	100	141	193	273	388	553	807	1152	1606					
		750	119	38	55	76	107	148	207	295	420	613	877	1222					
	7.1	1500	211	68	99	134	192	262	369	526	747	1092	1561	2175					
		1000	141	51	72	99	141	194	272	388	552	805	1152	1605					
		750	106	38	55	76	108	148	207	295	420	612	877	1221					
	8	1500	188	64	85	123	174	249	348	497	703	996	1413	2051					
		1000	125	47	64	93	129	185	260	370	524	742	1052	1528					
		750	94	37	51	74	103	148	206	295	418	592	839	1218					
	9	1500	167	63	86	124	173	225	350	502	702	993	1410	1825					
		1000	111	45	60	85	120	156	243	347	487	688	977	1265					
		750	83	33	45	65	91	119	185	264	371	524	743	962					
	10	1500	150	47	60	110	154	181	244	343	485	888	1262	1465					
		1000	100	32	41	75	105	123	166	233	330	603	857	995					
		750	75	24	32	57	80	94	126	177	251	459	652	757					
	11.2	1500	134	37	48	66	91	144	194	271	382	525	740	1163					
		1000	89	25	32	44	63	98	131	184	259	357	503	790					
		750	67	19	25	34	48	74	100	140	197	271	383	601					
	12.5	1500	120	33	46	64	91	125	177	250	357	517	731	993					
		1000	80	23	32	44	62	85	120	170	243	352	497	675					
		750	60	17	24	33	47	65	91	129	185	268	378	513					
	14	1500	107	33	47	64	91	126	177	250	357	517	730	992					
		1000	71	22	32	43	62	86	121	170	243	351	497	675					
		750	54	17	24	33	47	65	92	129	185	267	378	513					
	16	1500	94	32	42	59	82	121	171	241	341	467	657	956					
		1000	63	21	29	39	56	82	115	163	231	316	445	647					
		750	47	17	22	30	42	62	88	124	176	241	339	493					
	18	1500	83	25	32	44	61	96	130	181	254	348	490	766					
		1000	56	17	22	29	42	65	88	123	173	236	333	520					
		750	42	13	16	22	32	49	77	94	131	180	253	396					
RHC RVC	20	1500	75	26	35	50	71	101	137	194	283	406	576	810	1114	1560	2323		
		1000	50	20	26	37	53	75	102	144	211	303	429	604	831	1162	1732		
		750	38	15	20	29	41	59	79	112	164	236	334	471	648	906	1350		
	22.5	1500	67	26	35	49	70	99	143	203	279	403	567	794	1167	1641	2289		
		1000	44	18	24	33	48	67	98	148	190	274	385	539	792	1114	1555		
		750	33	13	18	25	36	51	74	105	144	209	293	411	604	849	1184		
	25	1500	60	22	32	46	66	92	125	177	260	377	529	740	1021	1430	2137		
		1000	40	15	22	31	44	63	85	120	177	256	359	502	693	971	1451		
		750	30	11	17	24	34	48	65	91	135	195	274	383	528	740	1106		
	28	1500	54	21	28	40	56	79	116	164	226	329	458	636	945	1329	1849		
		1000	36	14	19	27	38	54	79	112	153	223	311	432	642	903	1256		
		750	27	11	15	21	29	41	60	85	117	170	237	329	489	688	957		
	31.5	1500	48	18	26	35	53	73	99	140	209	284	424	587	807	1133	1718		
		1000	32	12	17	23	35	50	68	95	142	193	288	398	548	770	1167		
		750	24	9.2	13	18	27	38	51	73	108	147	220	304	417	586	889		
	35.5	1500	42	16	22	32	44	68	91	130	178	262	360	540	743	1042	1457		
		1000	28	11	15	22	30	46	62	88	121	178	245	366	505	708	989		
		750	21	8.4	11	16	23	35	47	67	92	136	186	279	385	539	754		
	40	1500	38	15	20	29	41	56	84	118	163	242	330	450	682	954	1337		
		1000	25	10	14	20	28	38	57	80	111	164	224	306	463	648	908		
		750	18.8	7.7	10	15	21	29	43	61	84	125	171	233	353	494	692		
	45	1500	33	14	18	27	37	51	76	108	148	221	300	407	622	869	1216		
		1000	22	9	12	18	25	34	52	73	101	150	204	276	422	590	826		
		750	16.7	7	9.5	14	19	26	39	56	77	114	155	211	322	449	629		
	50	1500	30	12	17	23	34	49	66	94	129	175	261	360	537	750	1045		
		1000	20	8	11	16	23	33	45	64	88	119	178	245	365	510	710		
		750	15	6.2	8.6	12	17	25	34	49	67	91	135	186	278	388	541		
	56	1500	27	11	14	21	30	41	61	86	119	161	240	330	492	690	960		
		1000	17.9	7.4	9.7	15	20	28	41	59	80	109	163	224	334	469	652		
		750	13.4	5.7	7.4	11	15	21	32	45	61	83	124	171	254	357	497		
	63	1500	24	10	13	18	27	38	51	79	109	148	220	300	611	575	881		
		1000	15.9	6.7	8.8	12	19	26	35	54	74	100	150	204	279	390	598		
		750	11.9	5.2	6.8	9.4	14	19	26	41	56	76	114	155	213	298	456		
	71	1500	21	8.2	12	17	22	34	46	65	99	135	201	272	373	520	801		
		1000	14	5.6	8	11	15	23	31	44	67	91	136	184	253	353	544		
		750	10.6	4.2	6.1	8.6	12	18	24	34	51	70	104	141	193	269	414		
	80	1500	18.8		11		20	31	41	58	90	122	181	244			726		
		1000	12.5		7.4		14	21	28	40	61	83	123	166			493		
		750	9.4		5.5		10	16	21	30	46	63	94	126			376		

RH • RV Series - Bevel-helical units - Nominal power rating (kW)

RHD
RVD

			Size															
i_N	n_1	n_2 min^{-1}	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
80	1500	18.8	7.9		16									339	506			
	1000	12.5	5.4		11									230	344			
	750	9.4	4.2		8.1									175	261			
90	1500	16.7	7.2	9.7	14	19	28	39	56	78	111	155	228	319	447	635	895	1236
	1000	11	4.8	6.6	9.4	13	19	27	38	53	75	106	155	217	304	432	608	840
	750	8.3	3.7	5.1	7.1	10	15	20	29	41	57	80	118	165	231	328	463	639
100	1500	15	6.2	8.4	12	17	25	35	49	69	98	136	200	281	391	556	787	1083
	1000	10	4.3	5.7	8.3	11	17	24	33	47	66	92	136	191	265	378	534	736
	750	7.5	3.2	4.4	6.3	8.7	13	18	25	35	50	70	103	145	202	287	407	560
112	1500	13.4	5.8	8	11	16	22	30	46	64	91	127	187	246	365	518	736	1010
	1000	8.9	4	5.3	7.7	11	15	21	31	44	62	86	127	167	248	352	500	686
	750	6.7	3	4.1	5.9	8.1	11	16	23	33	47	65	96	126	188	267	379	520
125	1500	12	5	6.9	9.9	15	20	28	40	55	79	118	162	230	316	449	640	874
	1000	8	3.4	4.7	6.8	9.9	14	19	27	38	54	80	110	156	215	305	435	594
	750	6	2.6	3.5	5.1	7.4	10	15	20	28	41	61	83	117	161	229	327	447
140	1500	10.7	4.6	6.3	9,3	13	19	24	37	51	74	102	150	198	293	415	595	811
	1000	7.1	3.1	4.3	6,3	8.5	13	17	25	35	50	69	102	134	199	282	404	550
	750	5.4	2.4	3.2	4,7	6.4	10	12	19	26	38	52	76	100	149	211	303	412
160	1500	9.4	4	5.4	7.9	12	16	23	31	44	63	94	127	183	249	353	509	689
	1000	6.3	2.6	3.6	5.3	7.9	11	15	21	29	42	63	86	123	167	237	342	463
	750	4.7	2	2.7	4	5.9	8	11	16	22	32	48	64	92	125	178	257	347
180	1500	8.3	3.6	5	7.3	10	15	21	28	40	58	79	117	168	228	322	468	631
	1000	5.6	2.4	3.3	4.9	6.6	9.8	14	19	27	39	53	78	113	152	216	313	422
	750	4.2	1.8	2.5	3,7	4.9	7.3	10	14	20	29	40	59	85	114	162	235	317
200	1500	7.5	3.3	4.5	6.7	8.9	13	17	26	36	53	72	106	140	207	294	428	574
	1000	5	2.2	3	4.4	5.9	8.8	12	17	24	35	48	71	94	138	196	285	383
	750	3.8	1.6	2.2	3.3	4.5	6.6	8.7	13	18	27	36	53	70	104	147	214	287
225	1500	6.7	2.8	3.9	5.7	7.7	11	16	22	33	47	62	92	131	179	254	363	491
	1000	4.5	1.9	2.6	3.8	5.1	7.6	11	15	22	31	42	61	88	119	169	242	327
	750	3.3	1.4	1.9	2.8	3.8	5.7	8.1	11	16	23	31	46	66	89	127	181	246
250	1500	6	2.6	3.6	5.2	7	10	15	20	29	40	57	84	121	164	232	334	450
	1000	4	1.7	2.4	3.5	4.7	7	10	14	19	26	38	56	81	109	155	222	300
	750	3	1.3	1.8	2.6	3.5	5.2	7.5	10	14	20	29	42	60	82	116	167	225
280	1500	5.4	2.4	3.2	4.8	6.4	10	12	19	26	36	52	77	101	149	212	306	410
	1000	3.6	1.6	2.2	3.2	4.3	6.4	8.3	12	17	24	35	51	67	100	141	204	273
	750	2.7	1.2	1.6	2.4	3.2	4.8	6.2	9.3	13	18	26	38	51	75	106	153	205
315	1500	4.8	2.1	2.9	3.9	5.8	8,7	11	17	24	33	47	62	92	135	192	252	372
	1000	3.2	1.4	2	2.6	3.9	5.8	7.6	11	16	22	31	42	61	90	128	168	248
	750	2.4	1.1	1.5	2	2.9	4.3	5.7	8.5	12	16	24	31	46	68	96	126	186
355	1500	4.2	1.9	2.6	3.6	5.2	7.7	10	15	19	29	42	56			173		
	1000	2.8	1.3	1.8	2.4	3.5	5.1	6.8	10	13	20	28	37			115		
	750	2.1	1	1.3	1.8	2.6	3.8	5.1	7.5	9.5	15	21	28			86		
400	1500	3.8							13		26	37						
	1000	2.5							8.9		18	25						
	750	1.9							6.7		13	19						

P Series - Helical units - Output torques TN_2 (Nm)

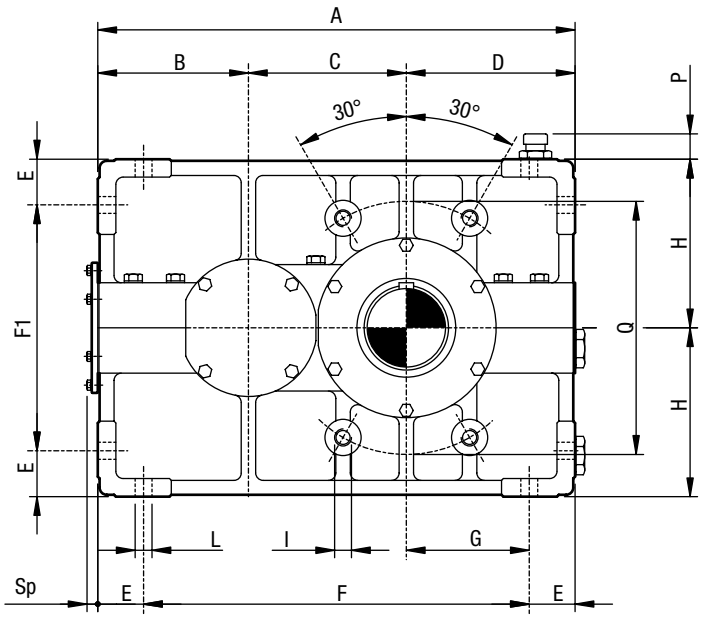
		Size															
	i_N	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1.12	2300	3200	4600	6400	9100	12800	18300	25600	36500	51800	73100					
	1.25	2600	3500	5100	7200	10200	14300	20500	28600	40900	57900	81800					
	1.4	2700	3700	5400	7500	10800	15100	21600	30200	43100	61100	86200					
	1.6	2900	4000	5700	8000	11400	16000	22800	31900	45600	64600	91200					
	1.8	3000	4100	6000	8400	11900	16700	23900	33400	47800	67700	95500					
	2	3100	4300	6200	8700	12400	17400	24800	34700	49600	70300	99300					
	2.25	3300	4500	6400	9000	12900	18000	25800	36100	51500	73000	103000					
	2.5	3400	4600	6600	9300	13200	18500	26500	37100	53000	75000	105900					
	2.8	3500	4800	6900	9600	13700	19200	27500	38400	54900	77800	109800					
	3.15	3500	4800	6900	9700	13800	19300	27600	38700	55300	78300	110500					
	3.55	3500	4800	6900	9700	13800	19300	27600	38700	55300	78300	110500					
	4	3500	4800	7000	9700	13900	19500	27800	38900	55600	78800	111200					
	4.5	3500	4900	7000	9800	14000	19600	28000	39200	56000	79300	112000					
	5	3100	4300	6200	8600	12300	17300	24700	34500	49300	69900	98700					
	5.6	2800	3900	5600	7800	11200	15600	22300	31300	44600	63300	89300					
PB	6.3	3300	4500	6500	9100	13000	18200	26000	36400	52000	73600	103900	123900	175000	248200	349000	488500
	7.1	3300	4500	6500	9100	13000	18200	26000	36400	52000	73600	103900	124700	176100	249000	351600	491900
	8	3300	4600	6600	9200	13100	18400	26300	36800	52500	74400	105000	126800	179000	253100	357000	497900
	9	3400	4600	6600	9300	13300	18600	26500	37100	53000	75100	106100	12900	182100	257400	363300	506500
	10	3400	4600	6600	9300	13300	18600	26500	37100	53000	75100	106100	129400	182700	259100	365100	510000
	11.2	3400	4600	6600	9300	13300	18600	26500	37100	53000	75100	106100	130400	184000	260000	367700	511800
	12.5	3400	4700	6800	9500	13500	18900	27100	37900	54100	75100	108200	133500	188400	267200	376900	525700
	14	3400	4700	6800	9500	13500	18900	27100	37900	54100	76700	108200	134500	189900	268200	379700	528400
	16	3500	4800	6900	9700	13800	19300	27600	38600	55200	76700	110300	137700	194400	275700	388000	542400
	18	3600	4900	7000	9800	14100	19700	28100	39400	56200	78100	112500	141700	199100	282300	399300	555800
	20	3500	4800	6900	9600	13800	19300	27500	38600	55100	79700	110200	139400	196900	277800	392900	547100
	22.5			6900			19300	27500	38600	55100	78000	110200	139600	197200	278200		548500
	25											110200					
	28																
	31.5																
PC	18																
	20																
	22.5	3500	4800		9600	14000										445400	
	25	3500	4800	7000	9700	14100	19500	27800	39700	55800	78000		157900	222600	317300	446700	623500
	28	3600	4900	7000	9800	14100	19600	28000	40000	56200	79100	112800	158400	224100	319200	449700	627500
	31.5	3600	4900	7100	9800	14200	19800	28300	40200	56500	79600	113400	159300	224700	321900	451700	631600
	35.5	3600	4900	7100	9900	14300	19900	28400	40500	56800	80100	114100	160200	226100	322100	454700	634500
	40	3600	5000	7100	10000	14300	20000	28600	40600	57200	80600	114500	161200	227500	325200	457700	638500
	45	3700	5000	7200	10100	14400	20200	28800	40800	57600	81100	115300	162100	228900	326600	461000	644000
	50	3700	5000	7200	10100	14500	20300	28900	41100	57800	81700	116100	163300	230500	327600	462000	645900
	56	3700	5100	7300	10200	14600	20400	29100	41300	58200	81900	116500	164300	231300	330300	465300	650400
	63	3700	5100	7300	10200	14700	20500	29200	41600	58400	82600	117400	165000	233200	331400	467300	653400
	71	3800	5100	7400	10300	14800	20600	29500	41700	58900	82900	117900	166200	233900	334200	471300	658400
	80	3800	5100	7400	10400	14800	20800	29800	42100	59100	83600	118400	166800	235900	335600	473300	661400
	90	3800	5200	7500	10400	15000	20900	29800	42300	59700	83900	119600	168300	236900	337300	477700	655500
	100	3800	5200	7500	10400		20900	29800	42500	59700	84300	119600	169100	238100	340000	479700	667900
	112																
	125																
PD	100					15000											
	112	3800	5200	7500	10500	15000	21000	29900	42500	59900	84300	120000	170000	239600	339900	479800	668800
	125	3800	5200	7500	10500	15000	21000	29900	42800	59700	84800	120000	169600	239600	339700	477900	668800
	140	3800	5200	7500	10500	15000	20900	29900	42800	59700	84800	120000	169600	239500	338700	478000	668800
	160	3800	5200	7500	10500	15000	21000	29900	42700	59900	84800	120000	169500	239600	339800	479200	668800
	180	3800	5200	7500	10500	15000	20900	29900	42800	59900	84900	120000	170000	239600	338600	479000	668300
	200	3800	5200	7500	10500	15000	21000	30000	42600	59900	84800	120000	170000	240000	340000	479000	670000
	225	3800	5200	7500	10500	15000	21000	30000	42800	60000	84900	120000	170000	240000	340000	480000	670000
	250	3800	5200	7500	10500	15000	21000	30000	43100	60000	85000	120000	170000	240000	340000	480000	670000
	280	3800	5200	7500	10500	15000	21000	30000	43300	60000	85000	120000	170000	240000	340000	480000	670000
	315	3800	5200	7500	10500	15000	21000	30000	43600	60000	85000	120000	170000	240000	340000	480000	670000
	355	3800	5200	7500	10500	15000	21000	30000	43800	60000	85000	120000	170000	240000	340000	480000	670000
	400	3800	5200	7500	10500	15000	21000	30000	44200	60000	85000	120000	170000	240000	340000	480000	670000
	450	3800	5200	7500	10500		21000	30000	44400	60000	85000	120000	170000	240000	340000	480000	670000
	500	3800	5200	7500			21000	30000	44600	60000	85000	120000	170000	240000	340000	480000	670000

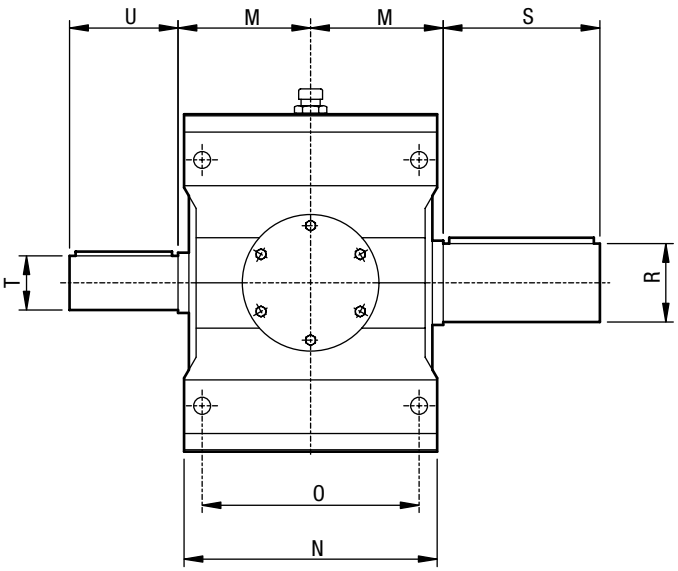
RH • RV Series - Bevel-helical units - Output torques TN_2 (Nm)

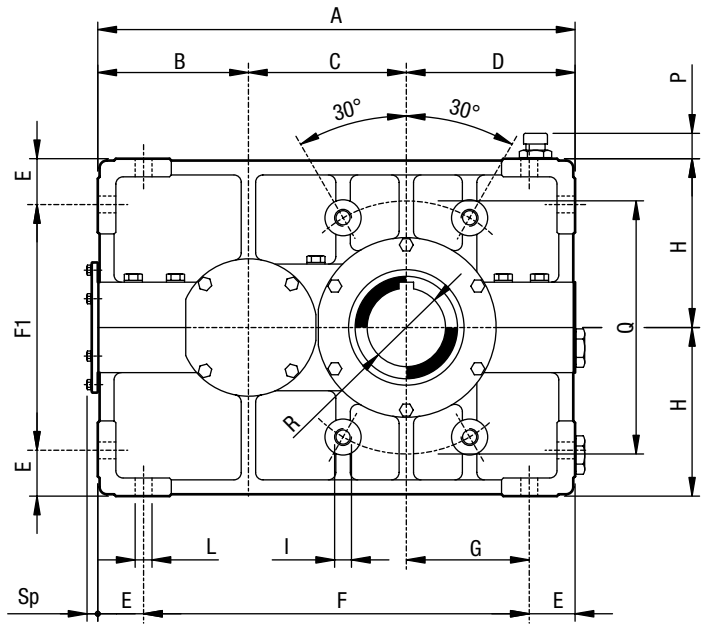
		Size															
	i_N	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RHB RVB	5	2400	3400	4800	6700	9200	12300	18200	25800	38100	54500	74800					
	5.6	2500	3600	5100	7200	9800	14000	19400	27600	40800	58300	85400					
	6.3	2900	4200	5900	8300	11200	16000	22400	31900	47100	67200	91500					
	7.1	3400	4900	6300	9000	13000	17200	26100	37200	50700	78300	105800					
	8	3600	4900	7200	10100	14000	19900	28400	40200	57500	81300	114000					
	9	3500	4700	6900	9700	13300	19300	27700	38900	55500	78500	106400					
	10	3000	4000	6700	9300	11500	15700	22400	31700	53200	75400	91600					
	11.2	2700	3500	4800	6800	10000	13700	19600	27700	38400	54100	80000					
	12.5	2500	3600	5000	7100	9400	13500	19000	27200	40100	56600	74500					
	14	3000	4300	5400	7700	11100	16000	22700	32500	47800	61700	88000					
	16	3200	4200	5900	8300	11700	16800	24000	34000	47400	66700	92500					
	18	2700	3500	4900	6900	10200	14100	20100	28200	39300	55300	91800					
RHC RVC	20	3500	4800	6800	9700	13900	19400	27700	38700	55300	78300	110800	157300	221400	313500		
	22.5	3500	4800	6800	9700	13900	19500	27800	39000	55700	78800	111700	157300	222500	315600		
	25	3500	4800	6800	9800	14000	19600	28000	39100	55900	79200	112100	159400	224500	316600		
	28	3600	4900	6900	9900	14100	19700	28100	39400	56300	79800	112900	159400	225600	318700		
	31.5	3600	4900	6900	9900	14200	19900	28400	39600	56700	80100	113400	160400	226600	320800		
	35.5	3600	4900	6900	10000	14200	20000	28500	39900	56900	80800	113900	161400	227600	322800		
	40	3600	5000	7000	10000	14400	20000	28600	40100	57200	81100	115100	162500	228700	324900		
	45	3600	5000	7000	10100	14500	20100	28800	40400	57400	81500	115600	163500	229700	325900		
	50	3700	5000	7200	10100	14500	20300	29000	40700	58200	82200	116400	164500	231800	329100		
	56	3700	5100	7200	10200	14600	20400	29100	40800	58400	82500	116900	164500	232800	330100		
	63	3700	5100	7200	10200	14700	2066	29300	41000	58700	82900	117400	166600	234900	332200		
	71	3700	5100	7300	10300	14800	20700	29600	41200	59000	83300	118100	167600	235900	333200		
	80		5100		10400	14800	20800	29700	41400	59300	83700	118800			335300		
	90																
	100																
RHD RVD	80	3800		7400									168300	236800		473500	660700
	90	3800	5200	7400	10300	14900	20800	29800	41700	59600	84500	119200	168800	238800	337100	476600	665900
	100	3800	5200	7500	10400	14900	20900	30000	42000	59900	85000	120000	169900	239800	338100	479600	669800
	112	3800	5200	7500	10500	15000	21000	30000	42000	59900	85000	120000	170000	240000	340000	480000	669500
	125	3800	5200	7500	10500	15000	21000	30000	42000	59900	85000	120000	169900	240000	339900	479400	669500
	140	3800	5200	7500	10400	15000	21000	30000	42000	59900	85000	120000	170000	240000	340000	479400	669700
	160	3800	5200	7500	10500	15000	21000	30000	42000	59900	85000	120000	169800	240000	339900	479000	670000
	180	3800	5200	7500	10500	15000	21000	30000	42000	59800	85000	120000	169600	240000	340000	479000	669800
	200	3800	5200	7500	10500	15000	21000	30000	42000	59900	85000	120000	170000	240000	339400	480000	670000
	225	3800	5200	7500	10500	15000	21000	30000	42000	60000	85000	120000	170000	240000	340000	480000	670000
	250	3800	5200	7500	10500	15000	21000	30000	42000	60000	85000	120000	170000	240000	340000	480000	670000
	280	3800	5200	7500	10500	15000	21000	30000	42000	60000	85000	120000	170000	240000	340000	480000	670000
	315	3800	5200	7500	10500	15000	21000	30000	42000	60000	85000	120000	170000	240000	340000	480000	670000
	355	3800	5200	7500	10500	15000	21000	30000	42000	60000	85000	120000			340000		
	400							30000									

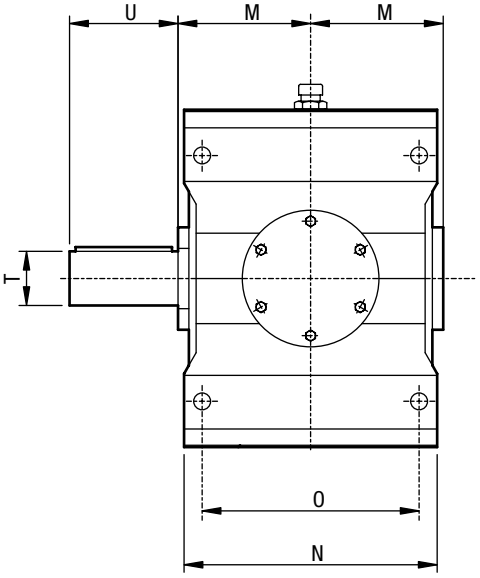
HELICAL UNITS

PA series single reduction





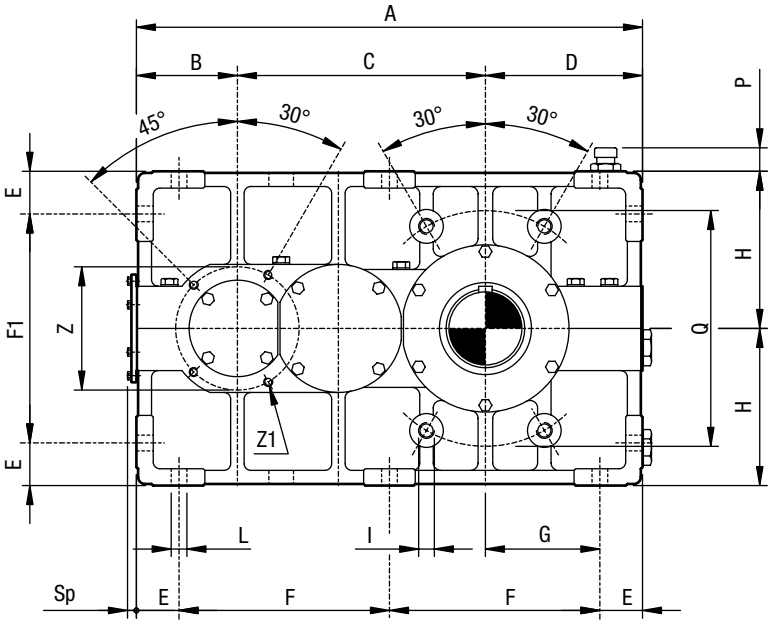


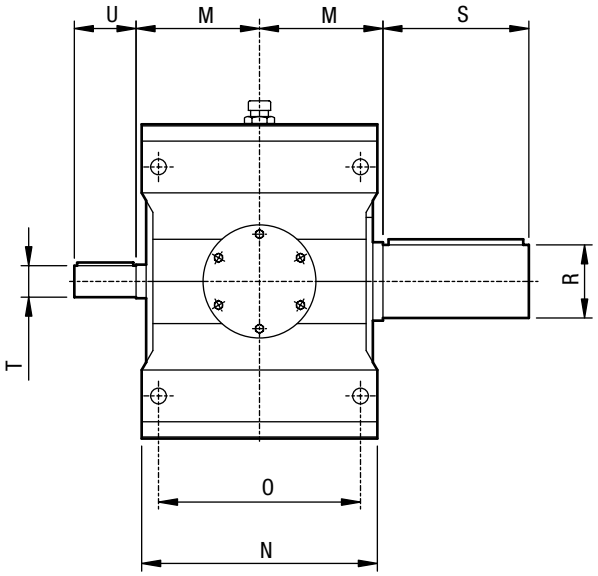


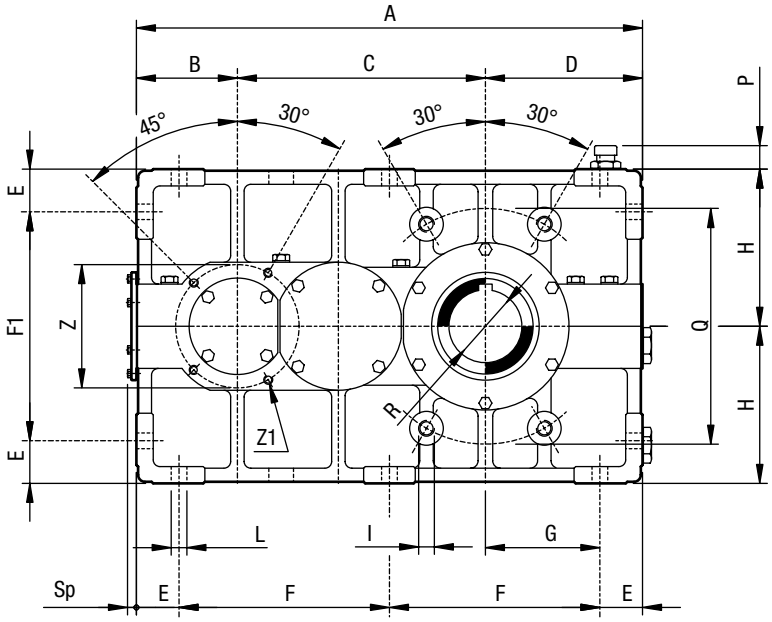
																			iN 1.12-2.5		iN 2.8-5.6		
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**	**Sp**
10	396	125	131	140	38	320	204	102	140	M16	14	115	210	180	20	210	65	110	45	90	35	70	13
20	450	140	150	160	42	366	236	118	160	M18	16	135	235	200	22	240	80	140	50	100	40	80	16
30	510	160	170	180	46	418	268	134	180	M20	18	145	260	220	22	270	90	160	55	110	45	90	17
40	570	180	190	200	52	466	296	148	200	M22	20	160	295	250	22	300	100	180	70	140	55	110	18
50	641	200	216	225	57	527	336	168	225	M24	22	170	325	275	22	340	110	200	75	150	60	120	22
60	715	225	240	250	62	591	376	188	250	M27	25	190	360	300	22	380	120	210	85	170	70	140	23
70	792	250	262	280	72	648	416	208	280	M30	27	225	415	350	25	430	140	250	90	180	80	160	25
80	895	280	300	315	80	735	470	235	315	M33	30	250	455	385	25	490	160	280	100	200	85	170	26
90	1010	315	340	355	87	836	536	268	355	M36	33	280	535	460	25	560	170	300	130	260	100	200	29
100	1135	355	380	400	93	949	614	307	400	M39	36	310	600	520	25	640	200	350	150	300	110	220	30
110	1282	400	432	450	100	1082	700	350	450	M42	39	375	710	620	25	730	220	390	160	320	130	260	32

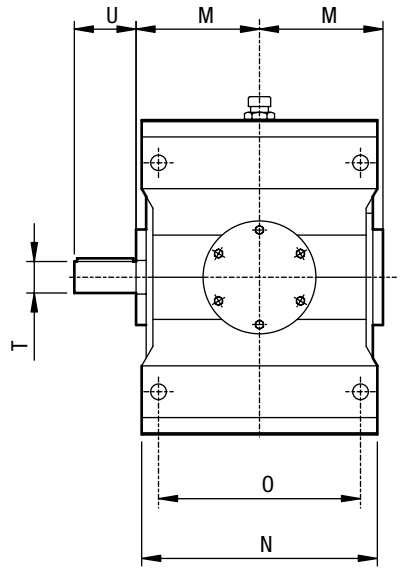
HELICAL UNITS

PB series double reduction





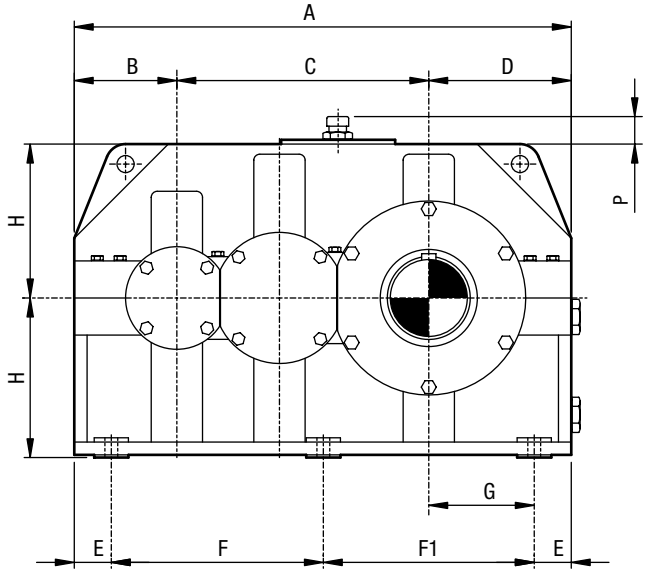


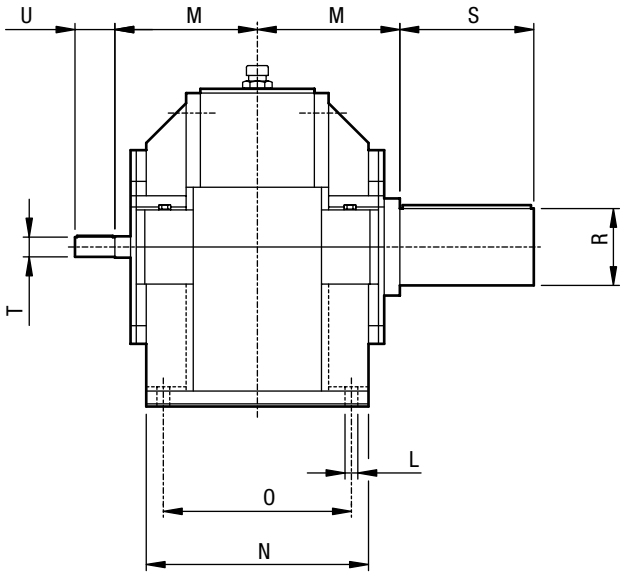


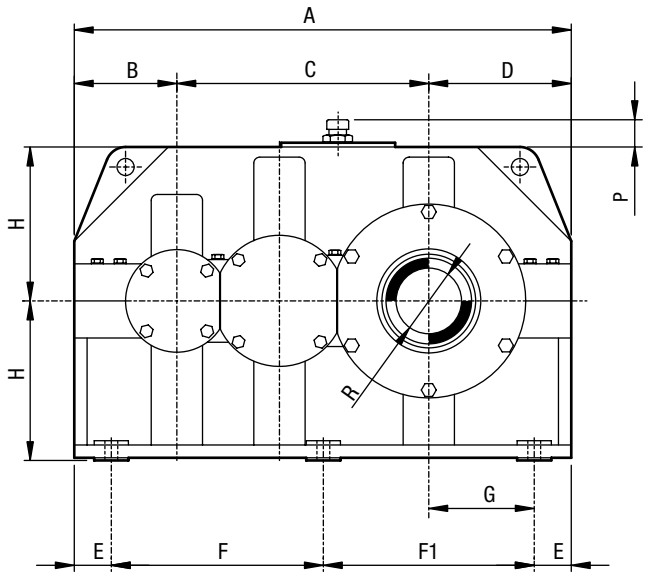
																			iN 6.3-11.2		iN 12.5-20				
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**	**Z**	**Z1**	**Sp**
10	451	90	221	140	38	187,5	204	102	140	M16	14	115	210	180	20	210	65	110	28	55	24	50	110	M8	11
20	510	100	250	160	42	213	236	118	160	M18	16	135	235	200	22	240	80	140	32	65	28	55	125	M10	11
30	574	112	282	180	46	241	268	134	180	M20	18	145	260	220	22	270	90	160	35	70	32	65	140	M12	12
40	640	125	315	200	52	268	296	148	200	M22	20	160	295	250	22	300	100	180	45	90	35	70	160	M14	13
50	721	140	356	225	57	303,5	336	168	225	M24	22	170	325	275	22	340	110	200	50	100	40	80	175	M16	16
60	810	160	400	250	62	343	376	188	250	M27	25	190	360	300	22	380	120	210	55	110	45	90	200	M16	17
70	902	180	442	280	72	379	416	208	280	M30	27	225	415	350	25	430	140	250	70	140	55	110	220	M18	18
80	1015	200	500	315	80	427,5	470	235	315	M33	30	250	455	385	25	490	160	280	75	150	60	120	250	M20	22
90	1145	225	565	355	87	485,5	536	268	355	M36	33	280	535	460	25	560	170	300	85	170	70	140	275	M22	23
100	1280	250	630	400	93	547	614	307	400	M39	36	310	600	520	25	640	200	350	90	180	80	160	310	M24	25
110	1442	280	712	450	100	621	700	350	450	M42	39	375	710	620	25	730	220	390	100	200	85	170	350	M27	26

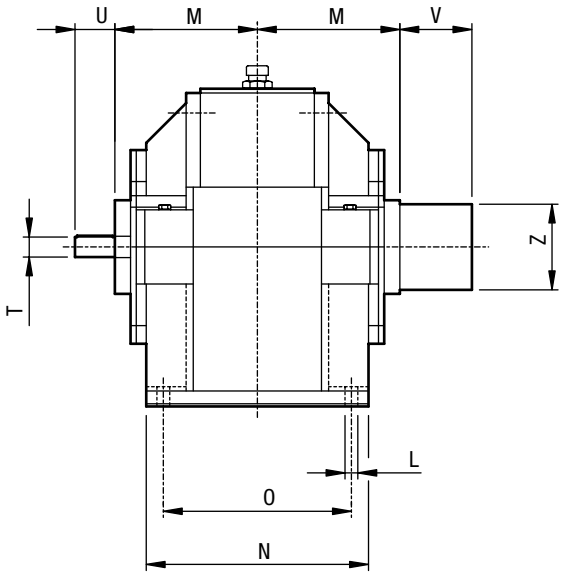
HELICAL UNITS

PB series double reduction





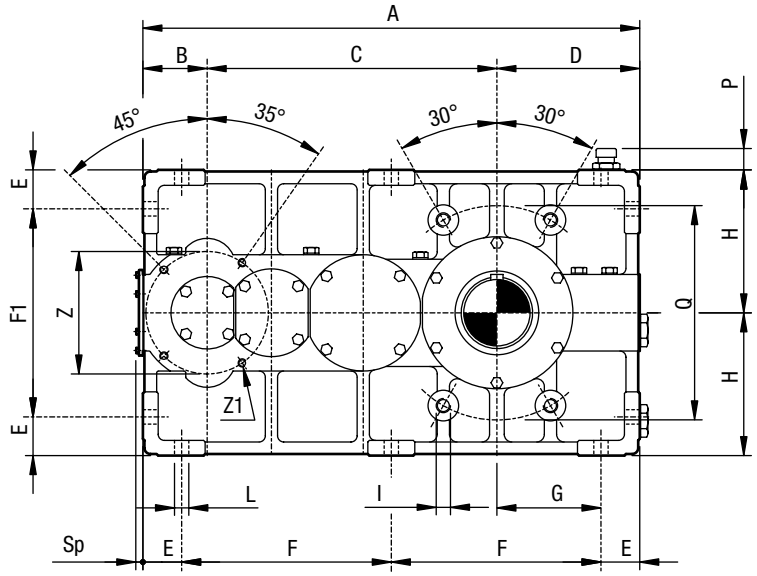


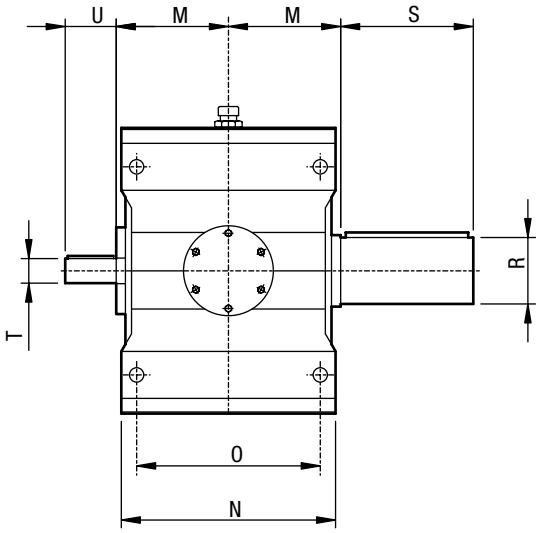


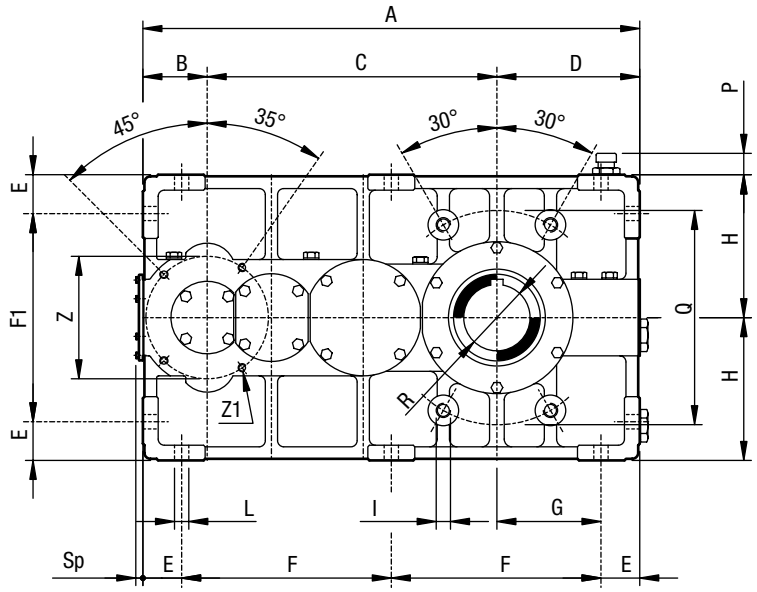
																	iN 1.12-2.5		iN 2.8-5.6			
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**H**	**L**	**M**	**N**	**O**	**P**	**R**	**S**	**T**	**U**	**T**	**U**	**V**	**Z**
120	1565	315	800	450	110	665	680	340	500	42	420	700	590	33	240	410	130	260	100	200	175	300
130	1739	355	884	500	125	739	750	375	560	45	480	780	660	35	270	470	150	300	110	220	190	340
140	1960	400	1000	560	150	840	820	410	630	48	505	850	720	37	300	500	160	320	130	260	205	380
150	2210	450	1130	630	170	950	920	460	710	52	565	930	790	40	340	550	180	360	140	280	235	420
160	2470	500	1260	710	200	1050	1020	510	800	56	630	1020	870	43	380	630	190	380	160	320	260	460

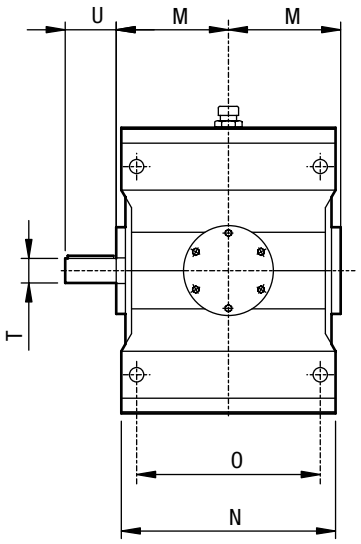
HELICAL UNITS

PC series triple reduction





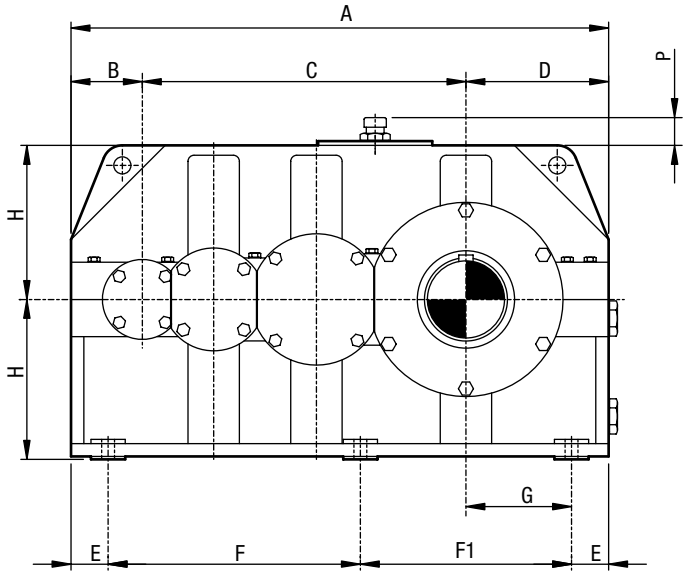


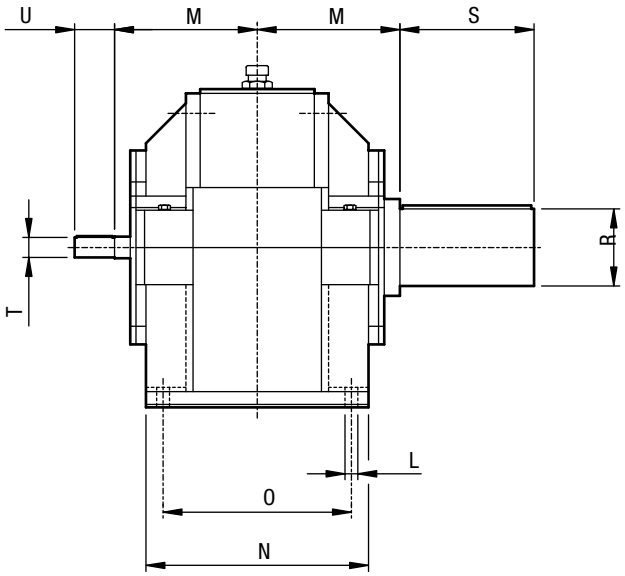


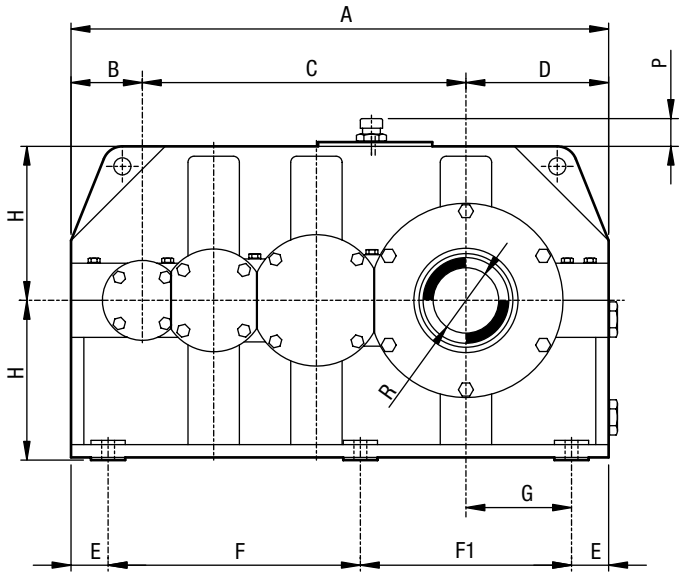
Size	A	B	C	D	E	F	F1	G	H	I	L	M	N	O	P	Q	R	S	T	U	Z	Z1	Sp
10	487	63	284	140	38	205,5	204	102	140	M16	14	115	210	180	20	210	65	110	24	50	120	M8	10
20	550	70	320	160	42	233	236	118	160	M18	16	135	235	200	22	240	80	140	24	50	130	M10	10
30	622	80	362	180	46	265	268	134	180	M20	18	145	260	220	22	270	90	160	28	55	150	M12	11
40	695	90	405	200	52	295,5	296	148	200	M22	20	160	295	250	22	300	100	180	30	60	170	M12	11
50	781	100	456	225	57	333,5	336	168	225	M24	22	170	325	275	22	340	110	200	32	65	185	M12	11
60	874	112	512	250	62	375	376	188	250	M27	25	190	360	300	22	380	120	210	40	80	210	M14	12
70	972	125	567	280	72	414	416	208	280	M30	27	225	415	350	25	430	140	250	45	90	235	M14	13
80	1095	140	640	315	80	467,5	470	235	315	M33	30	250	455	385	25	490	160	280	50	100	260	M16	16
90	1240	160	725	355	87	533	536	268	355	M36	33	280	535	460	25	560	170	300	55	110	290	M16	17
100	1390	180	810	400	93	602	614	307	400	M39	36	310	600	520	25	640	200	350	70	140	320	M18	18
110	1562	200	912	450	100	681	700	350	450	M42	39	375	710	620	25	730	220	390	75	150	350	M18	22

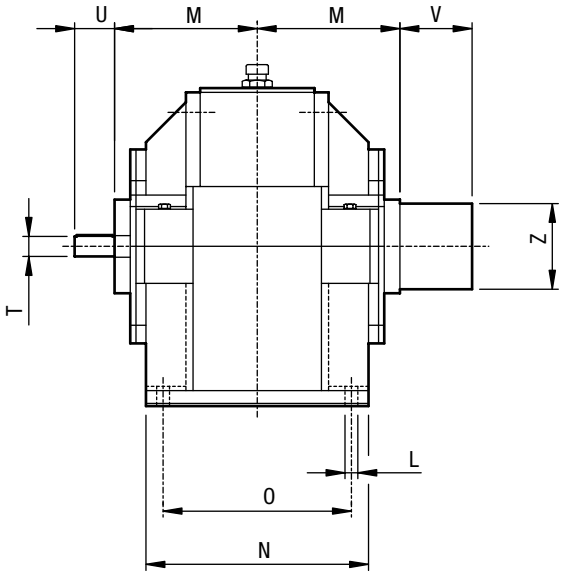
HELICAL UNITS

PC series triple reduction





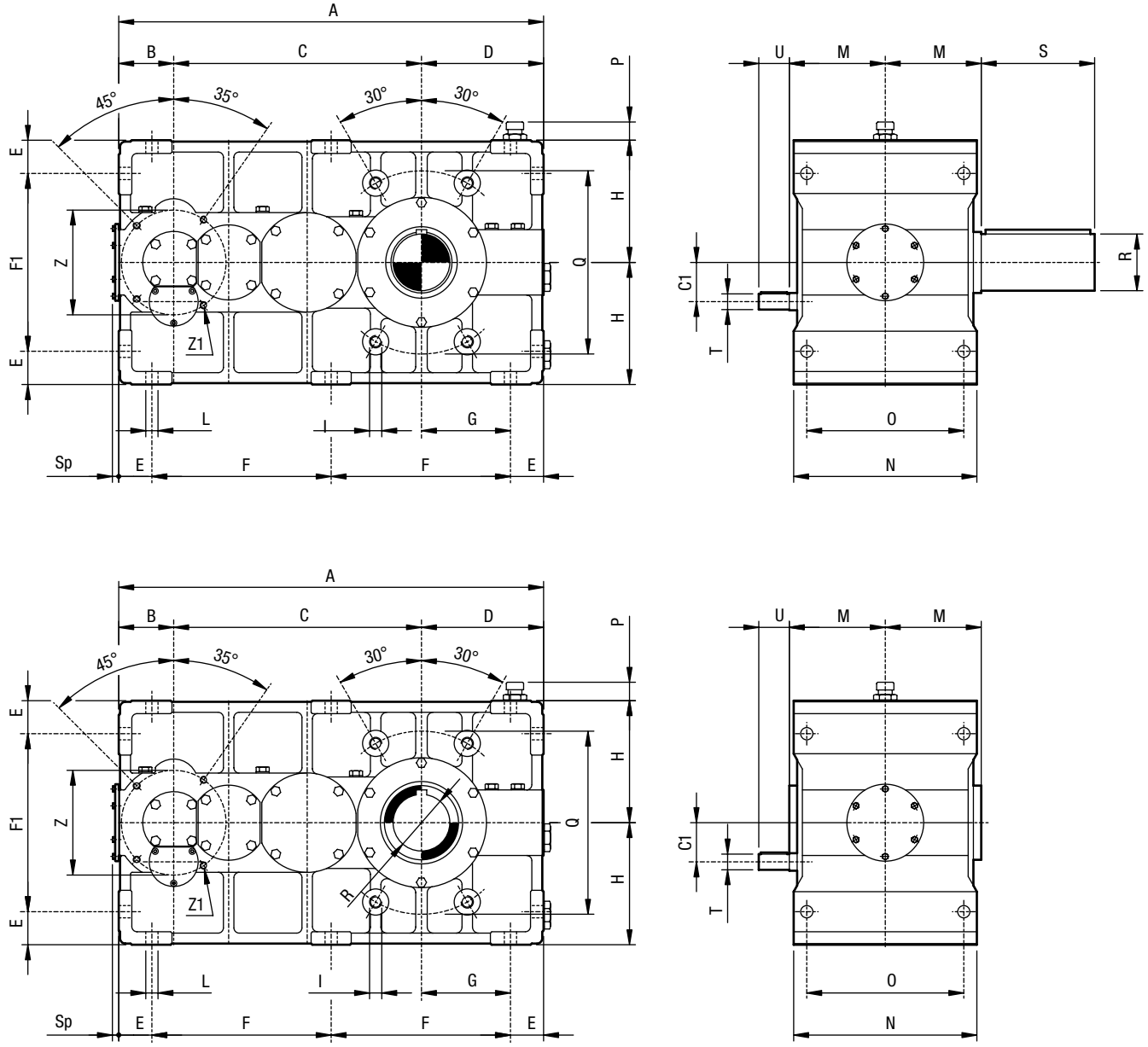




Size	A	B	C	D	E	F	F1	G	H	L	M	N	O	P	R	S	T	U	V	Z
120	1700	225	1025	450	110	800	680	340	500	42	420	700	590	33	240	410	85	170	175	300
130	1884	250	1134	500	125	884	750	375	560	45	480	780	660	35	270	470	90	180	190	340
140	2120	280	1280	560	150	1000	820	410	630	48	505	850	720	37	300	500	100	200	205	380
150	2395	315	1450	630	170	1135	920	460	710	52	565	930	790	40	340	550	130	260	235	420
160	2685	355	1620	710	200	1265	1020	510	800	56	630	1020	870	43	380	630	150	300	260	460

HELICAL UNITS

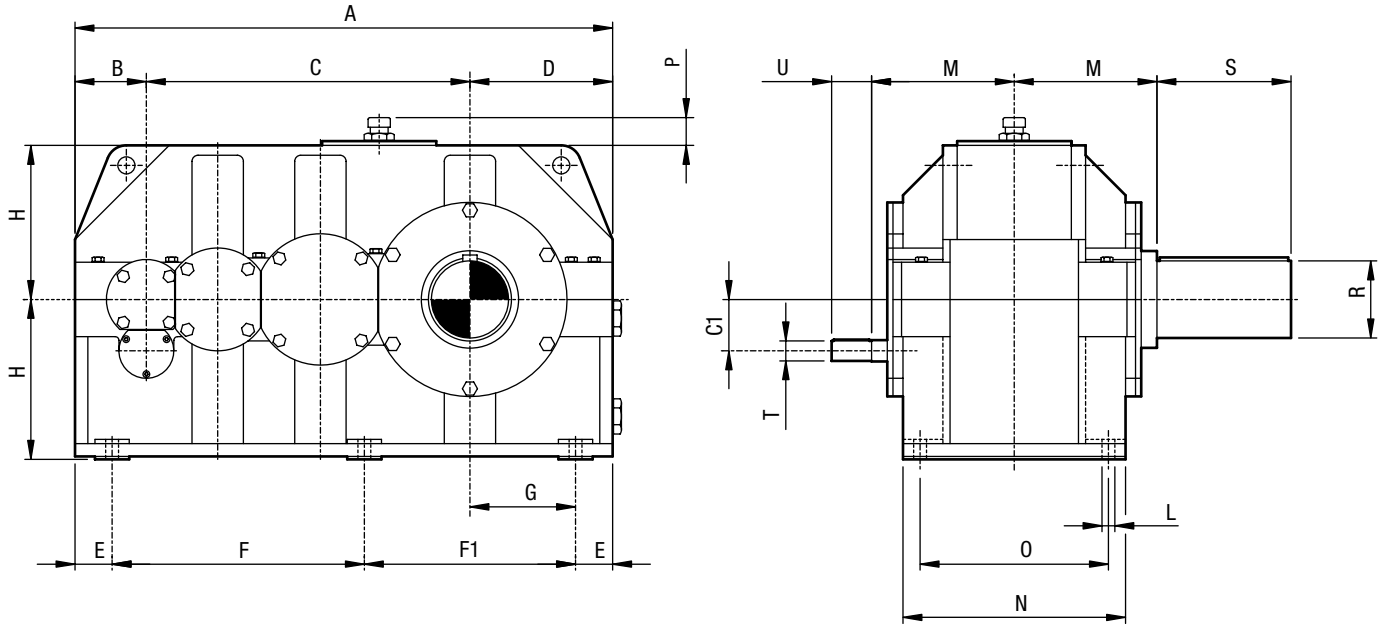
PD series quadruple reduction

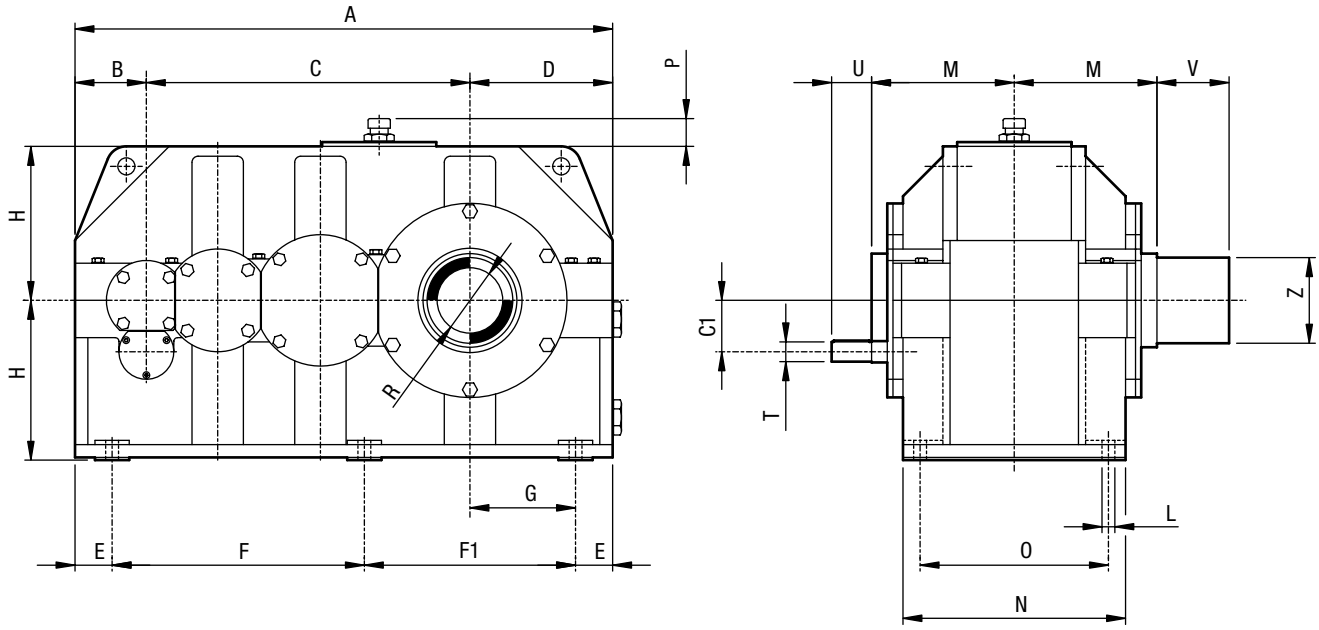


Size	A	B	C	C1	D	E	F	F1	G	H	I	L	M	N	O	P	Q	R	S	T	U	Z	Z1	Sp
10	487	63	284	45	140	38	205,5	204	102	140	M16	14	115	210	180	20	210	65	110	18	35	120	M8	10
20	550	70	320	50	160	42	233	236	118	160	M18	16	135	235	200	22	240	80	140	18	35	130	M10	10
30	622	80	362	56	180	46	265	268	134	180	M20	18	145	260	220	22	270	90	160	24	50	150	M12	11
40	695	90	405	63	200	52	295,5	296	148	200	M22	20	160	295	250	22	300	100	180	24	50	170	M12	11
50	781	100	456	70	225	57	333,5	336	168	225	M24	22	170	325	275	22	340	110	200	24	50	185	M12	11
60	874	112	512	80	250	62	375	376	188	250	M27	25	190	360	300	22	380	120	210	28	55	210	M14	12
70	972	125	567	90	280	72	414	416	208	280	M30	27	225	415	350	25	430	140	250	28	55	235	M14	13
80	1095	140	640	100	315	80	467,5	470	235	315	M33	30	250	455	385	25	490	160	280	32	65	260	M16	16
90	1240	160	725	112	355	87	533	536	268	355	M36	33	280	535	460	25	560	170	300	35	70	290	M16	17
100	1390	180	810	125	400	93	602	614	307	400	M39	36	310	600	520	25	640	200	350	45	90	320	M18	18
110	1562	200	912	140	450	100	681	700	350	450	M42	39	375	710	620	25	730	220	390	50	100	350	M18	22

HELICAL UNITS

PD series quadruple reduction

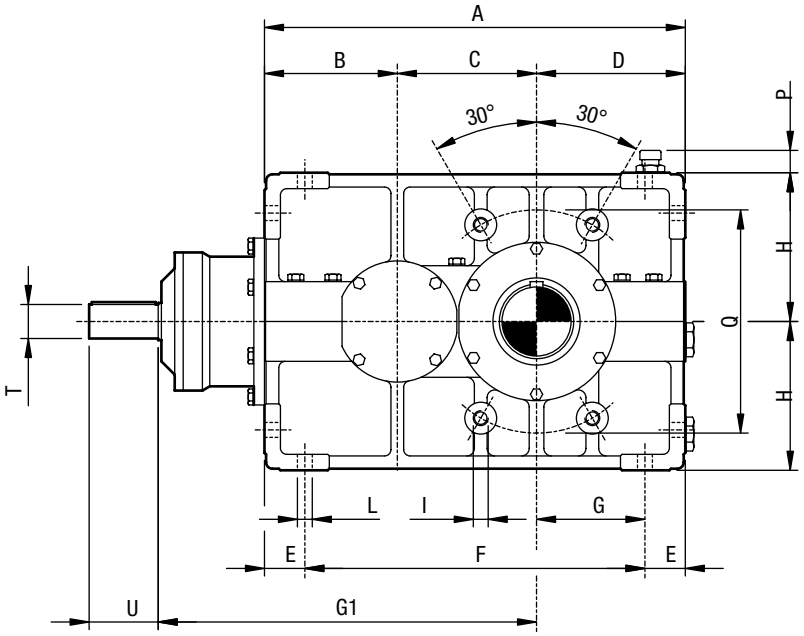


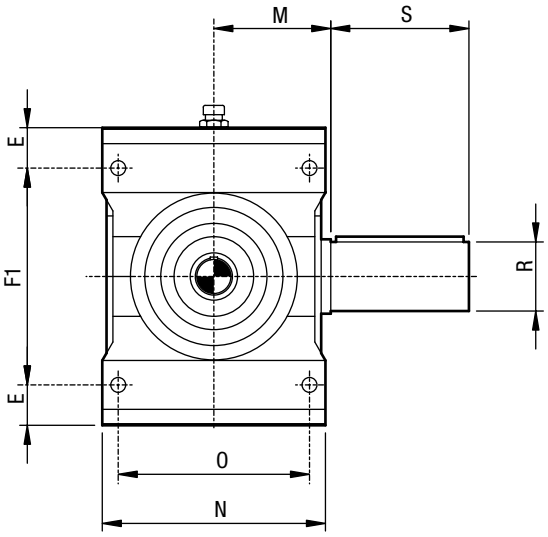


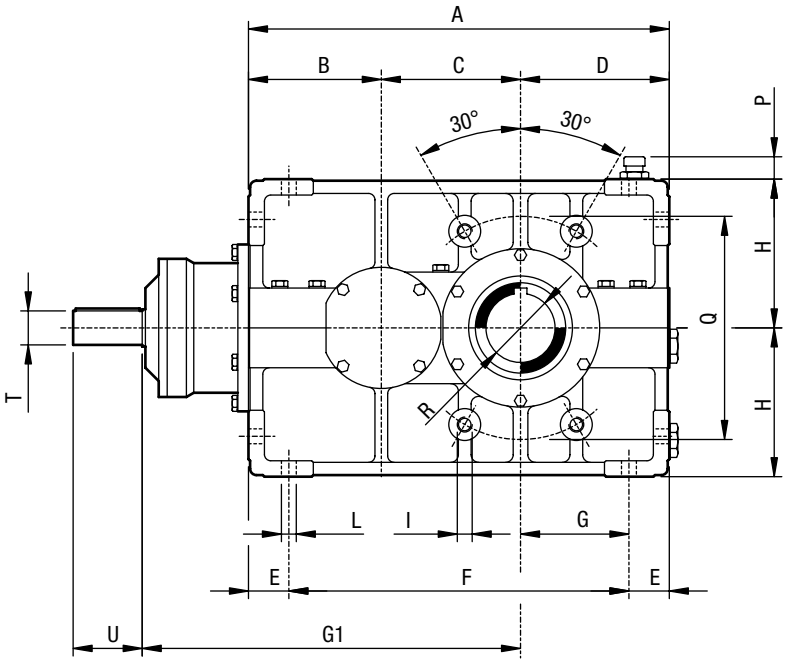
Size	A	B	C	C1	D	E	F	F1	G	H	L	M	N	O	P	R	S	T	U	V	Z
120	1700	225	1025	160	450	110	800	680	340	500	42	420	700	590	33	240	410	55	110	175	300
130	1884	250	1134	180	500	125	884	750	375	560	45	480	780	660	35	270	470	70	140	190	340
140	2120	280	1280	200	560	150	1000	820	410	630	48	505	850	720	37	300	500	75	150	205	380
150	2395	315	1450	225	630	170	1135	920	460	710	52	565	930	790	40	340	550	85	170	235	420
160	2685	355	1620	250	710	200	1265	1020	510	800	56	630	1020	870	43	380	630	90	180	260	460

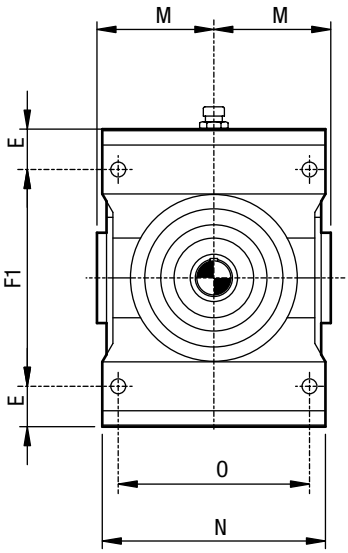
BEVEL-HELICAL UNITS

RHB series double reduction





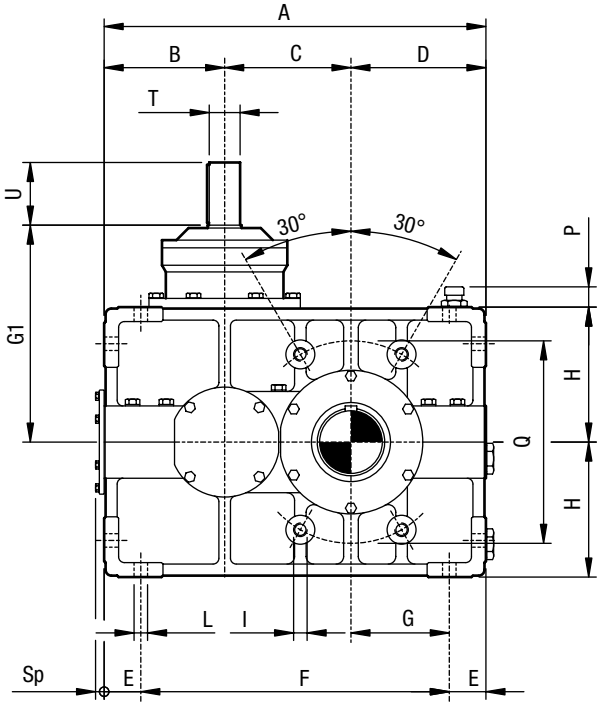


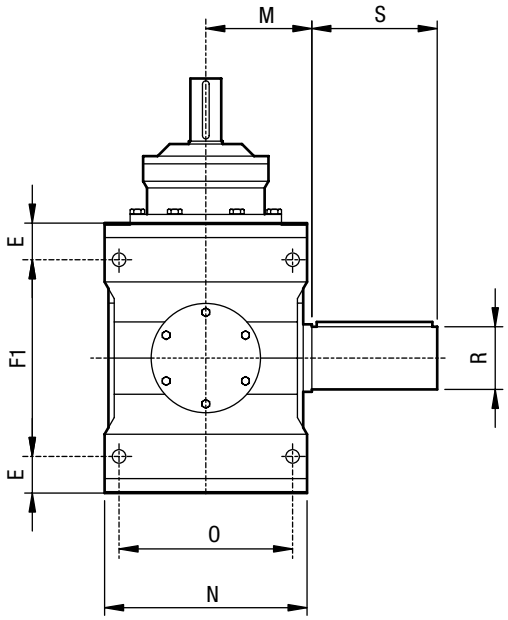


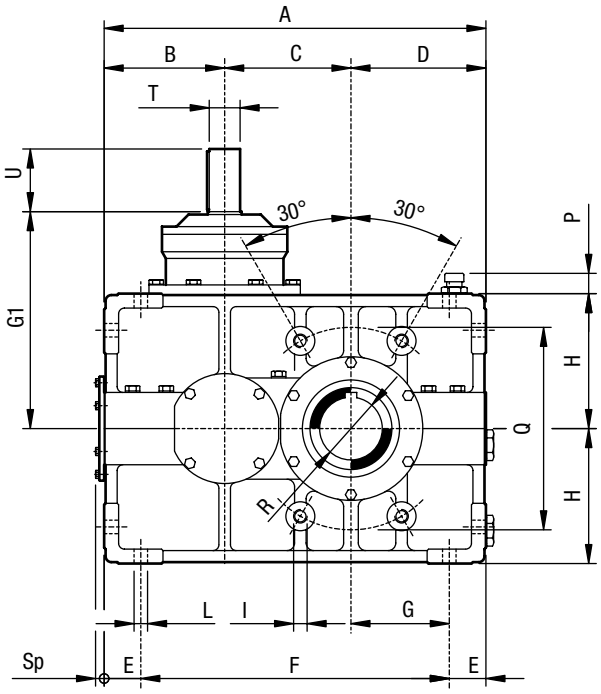
																				iN 5-11.2		iN 12.5-18	
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**
10	396	125	131	140	38	320	204	102	356	140	M16	14	115	210	180	20	210	65	110	35	70	32	65
20	450	140	150	160	42	366	236	118	400	160	M18	16	135	235	200	22	240	80	140	40	80	35	70
30	510	160	170	180	46	418	268	134	450	180	M20	18	145	260	220	22	270	90	160	45	90	40	80
40	570	180	190	200	52	466	296	148	505	200	M22	20	160	295	250	22	300	100	180	50	100	45	90
50	641	200	216	225	57	527	336	168	571	225	M24	22	170	325	275	22	340	110	200	55	110	50	100
60	715	225	240	250	62	591	376	188	640	250	M27	25	190	360	300	22	380	120	210	60	120	55	110
70	792	250	262	280	72	648	416	208	712	280	M30	27	225	415	350	25	430	140	250	70	140	60	120
80	895	280	300	315	80	735	470	235	800	315	M33	30	250	455	385	25	490	160	280	80	160	70	140
90	1010	315	340	355	87	836	536	268	900	355	M36	33	280	535	460	25	560	170	300	90	180	80	160
100	1135	355	380	400	93	949	614	307	1010	400	M39	36	310	600	520	25	640	200	350	100	200	90	180
110	1282	400	432	450	100	1082	700	350	1142	450	M42	39	375	710	620	25	730	220	390	110	220	100	200

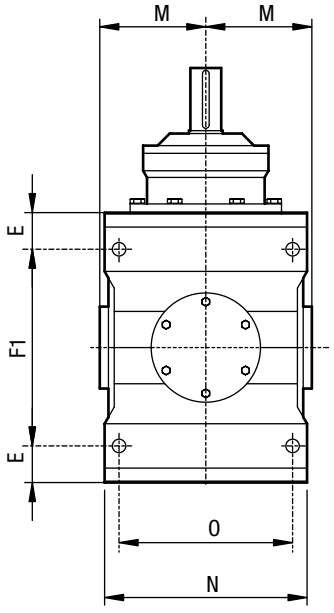
BEVEL-HELICAL UNITS

RVB series double reduction





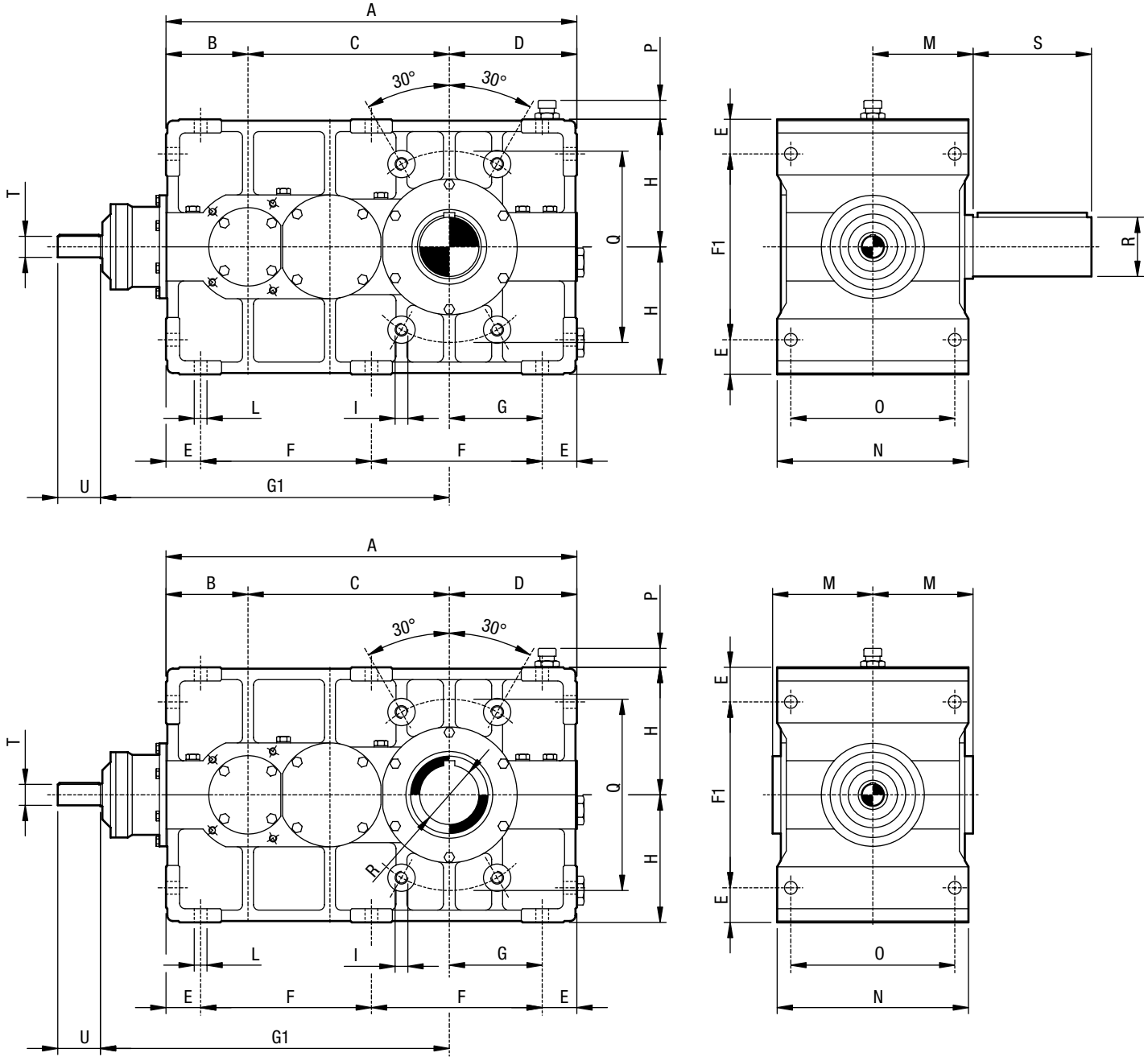




																					iN 5-11.2		iN 12.5-18		
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**	**Sp**
10	396	125	131	140	38	320	204	102	225	140	M16	14	115	210	180	20	210	65	110	35	70	32	65	13
20	450	140	150	160	42	366	236	1118	250	160	M18	16	135	235	200	22	240	80	140	40	80	35	70	16
30	510	160	170	180	46	418	268	134	280	180	M20	18	145	260	220	22	270	90	160	45	90	40	80	17
40	570	180	190	200	52	466	296	148	315	200	M22	20	160	295	250	22	300	100	180	50	100	45	90	18
50	641	200	216	225	57	527	336	168	355	225	M24	22	170	325	275	22	340	110	200	55	110	50	100	22
60	715	225	240	250	62	591	376	188	400	250	M27	25	190	360	300	22	380	120	210	60	120	55	110	23
70	792	250	262	280	72	648	416	208	450	280	M30	27	225	415	350	25	430	140	250	70	140	60	120	25
80	895	280	300	315	80	735	470	235	500	315	M33	30	250	455	385	25	490	160	280	80	160	70	140	26
90	1010	315	340	355	87	836	536	268	560	355	M36	33	280	535	460	25	560	170	300	90	180	80	160	29
100	1135	355	380	400	93	949	614	307	630	400	M39	36	310	600	520	25	640	200	350	100	200	90	180	30
110	1282	400	432	450	100	1082	700	350	710	450	M42	39	375	710	620	25	730	220	390	110	220	100	200	32

BEVEL-HELICAL UNITS

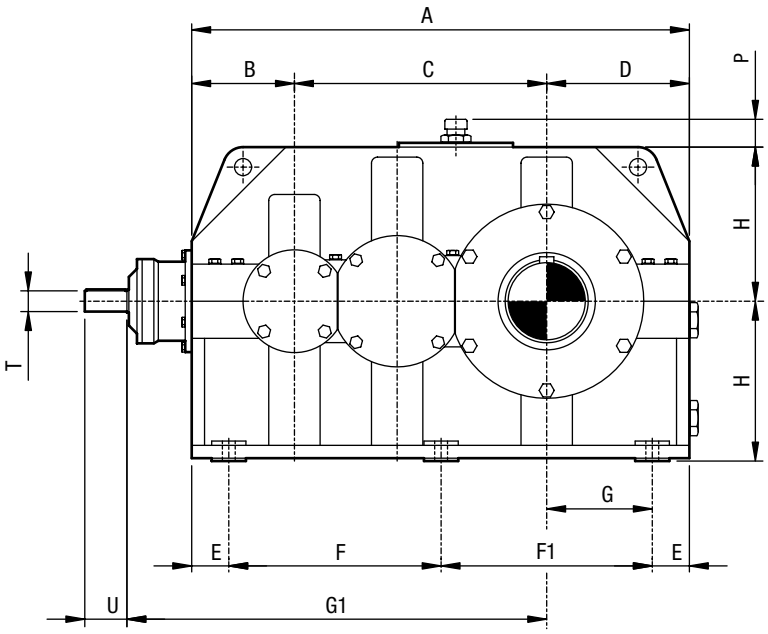
RHC series triple reduction

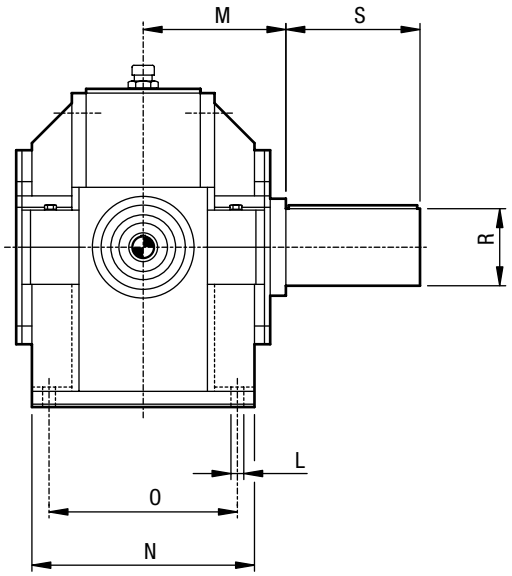


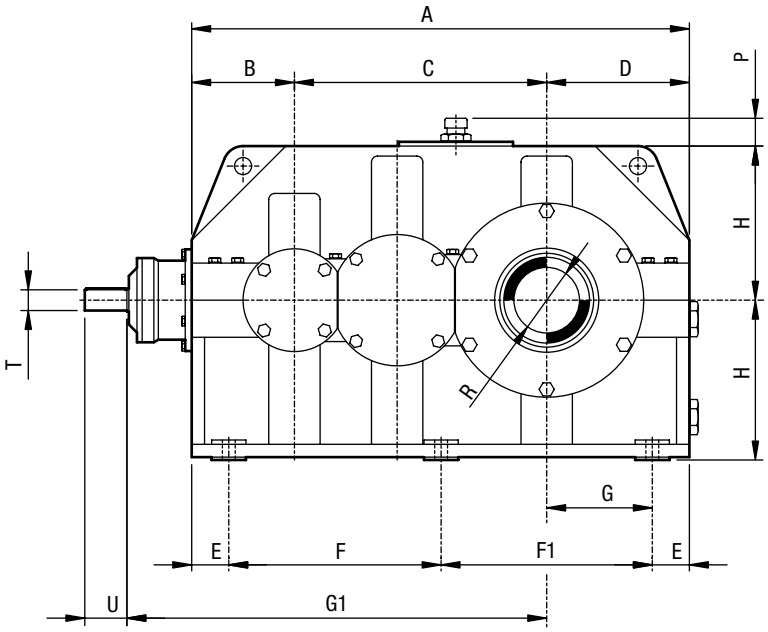
																				iN 1.12-2.5		iN 2.8-5.6	
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**
10	451	90	221	140	38	187,5	204	102	381	140	M16	14	115	210	180	20	210	65	110	24	50	22	45
20	510	100	250	160	42	213	236	118	430	160	M18	16	135	235	200	22	240	80	140	28	55	24	50
30	574	112	282	180	46	241	268	134	482	180	M20	18	145	260	220	22	270	90	160	32	65	28	55
40	640	125	315	200	52	268	296	148	540	200	M22	20	160	295	250	22	300	100	180	35	70	32	65
50	721	140	356	225	57	303,5	336	168	606	225	M24	22	170	325	275	22	340	110	200	40	80	35	70
60	810	160	400	250	62	343	376	188	680	250	M27	25	190	360	300	22	380	120	210	45	90	40	80
70	902	180	442	280	72	379	416	208	757	280	M30	27	225	415	350	25	430	140	250	50	100	45	90
80	1015	200	500	315	80	427,5	470	235	855	315	M33	30	250	455	385	25	490	160	280	55	110	50	100
90	1145	225	565	355	87	485,5	536	268	965	355	M36	33	280	535	460	25	560	170	300	60	120	55	110
100	1280	250	630	400	93	547	614	307	1080	400	M39	36	310	600	520	25	640	200	350	70	140	60	120
110	1442	280	712	450	100	621	700	350	1212	450	M42	39	375	710	620	25	730	220	390	80	160	70	140

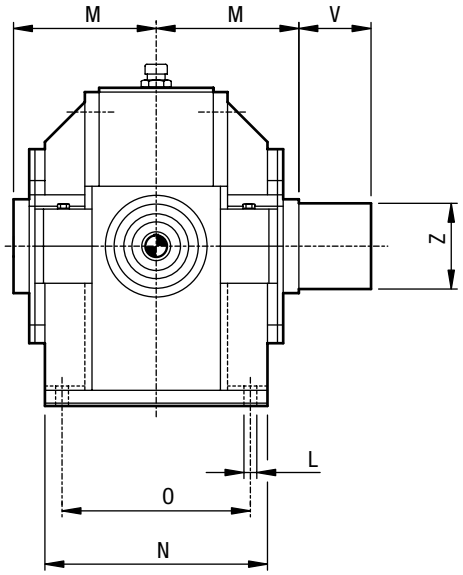
BEVEL-HELICAL UNITS

RHC series triple reduction





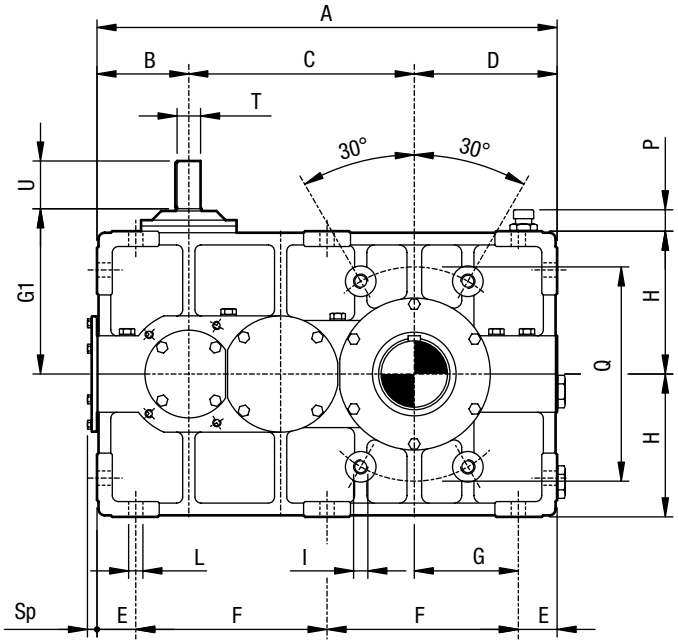


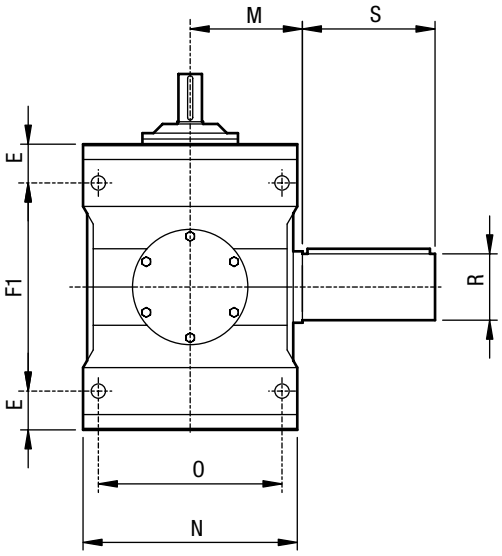


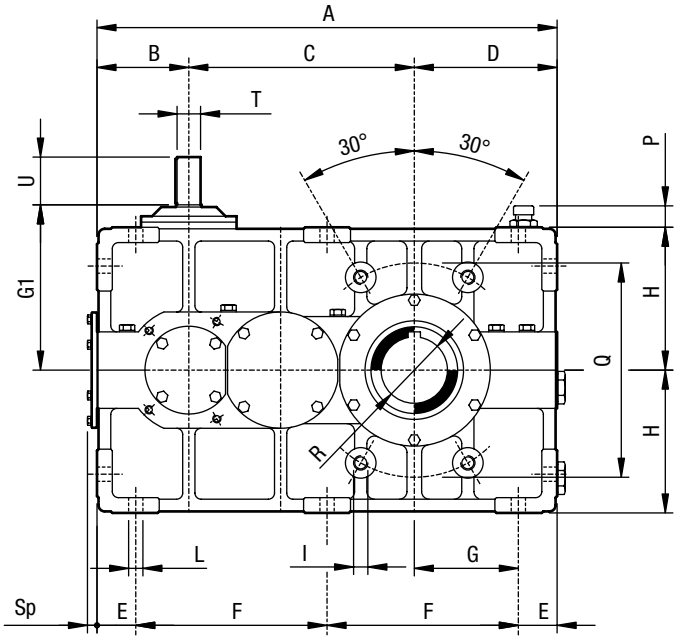
																		iN 1.12-2.5		iN 2.8-5.6			
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**L**	**M**	**N**	**O**	**P**	**R**	**S**	**T**	**U**	**T**	**U**	**V**	**Z**
120	1565	315	800	450	110	665	680	340	1360	500	42	420	700	590	33	240	410	90	180	80	160	175	300
130	1739	355	884	500	125	739	750	375	1514	560	45	480	780	660	35	270	470	100	200	90	180	190	340
140	1960	400	1000	560	150	840	820	410	1710	630	48	505	850	720	37	300	500	110	220	100	200	205	380

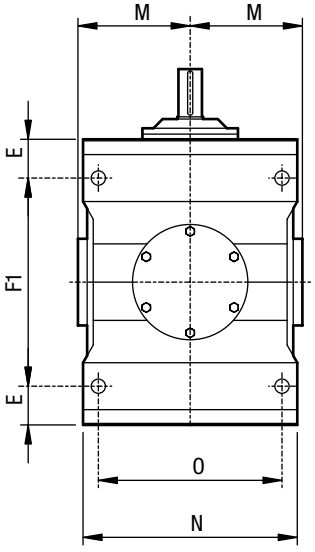
BEVEL-HELICAL UNITS

RVC series triple reduction





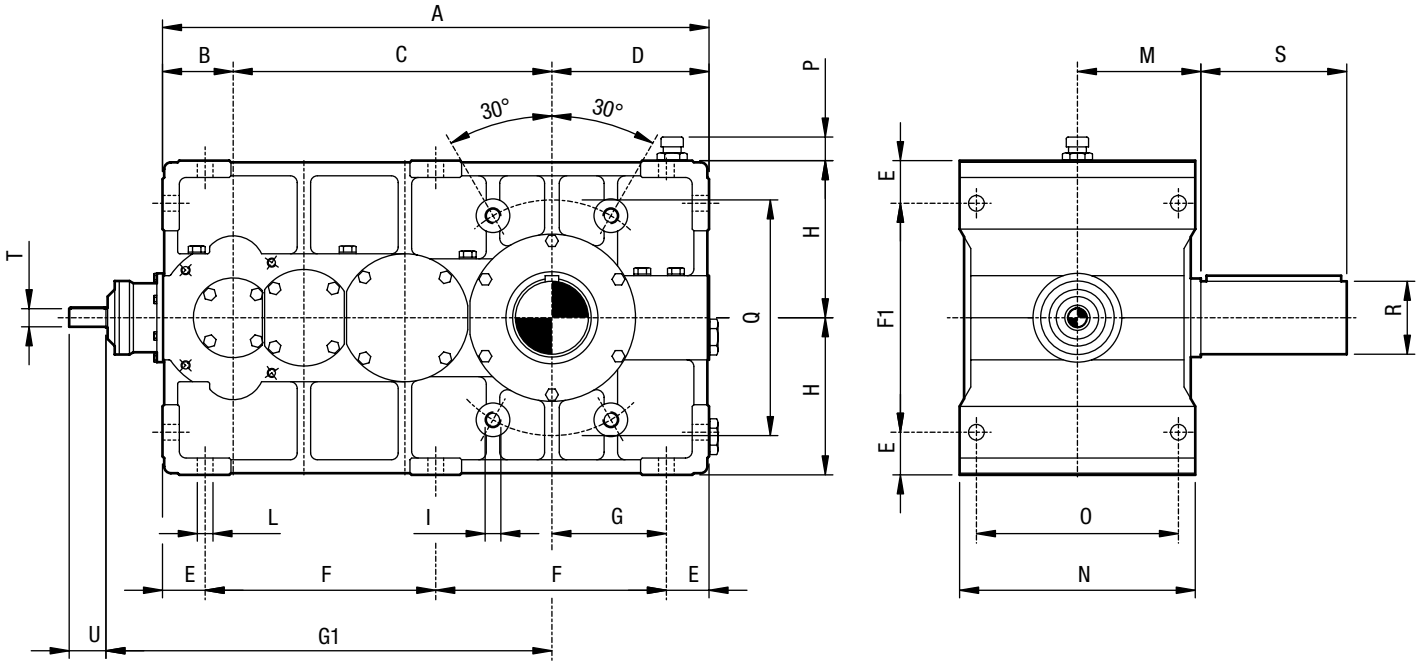


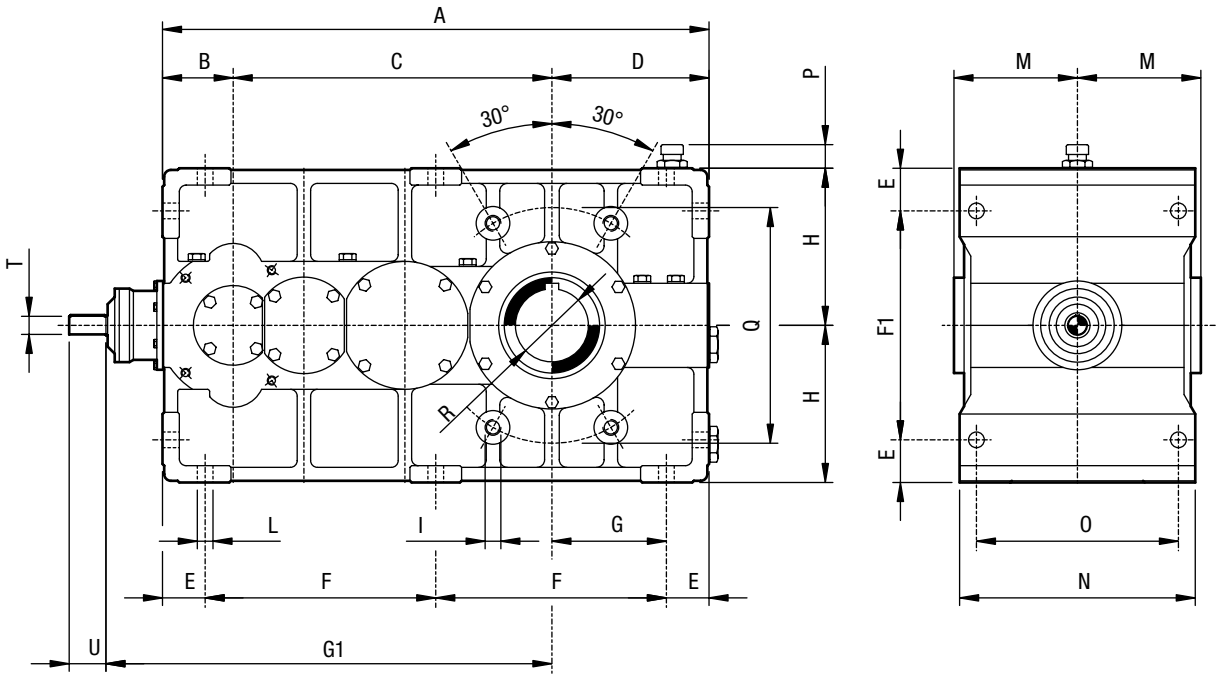


																				iN 20-45		iN 50-71		
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**	**Sp**
10	451	90	221	140	38	187,5	204	102	160	140	M16	14	115	210	180	20	210	65	110	24	50	22	45	11
20	510	100	250	160	42	213	236	118	180	160	M18	16	135	235	200	22	240	80	140	28	55	24	50	11
30	574	112	282	180	46	241	268	134	200	180	M20	18	145	260	220	22	270	90	160	32	65	28	55	12
40	640	125	315	200	52	268	296	148	225	200	M22	20	160	295	250	22	300	100	180	35	70	32	65	13
50	721	140	356	225	57	303,5	336	168	250	225	M24	22	170	325	275	22	340	110	200	40	80	35	70	16
60	810	160	400	250	62	343	376	188	280	250	M27	25	190	360	300	22	380	120	210	45	90	40	80	17
70	902	180	442	280	72	379	416	208	315	280	M30	27	225	415	350	25	430	140	250	50	100	45	90	18
80	1015	200	500	315	80	427,5	470	235	355	315	M33	30	250	455	385	25	490	160	280	55	110	50	100	22
90	1145	225	565	355	87	485,5	536	268	400	355	M36	33	280	535	460	25	560	170	300	60	120	55	110	23
100	1280	250	630	400	93	547	614	307	450	400	M39	36	310	600	520	25	640	200	350	70	140	60	120	25
110	1442	280	712	450	100	621	700	350	500	450	M42	39	375	710	620	25	730	220	390	80	160	70	140	26

BEVEL-HELICAL UNITS

RHD series quadruple reduction

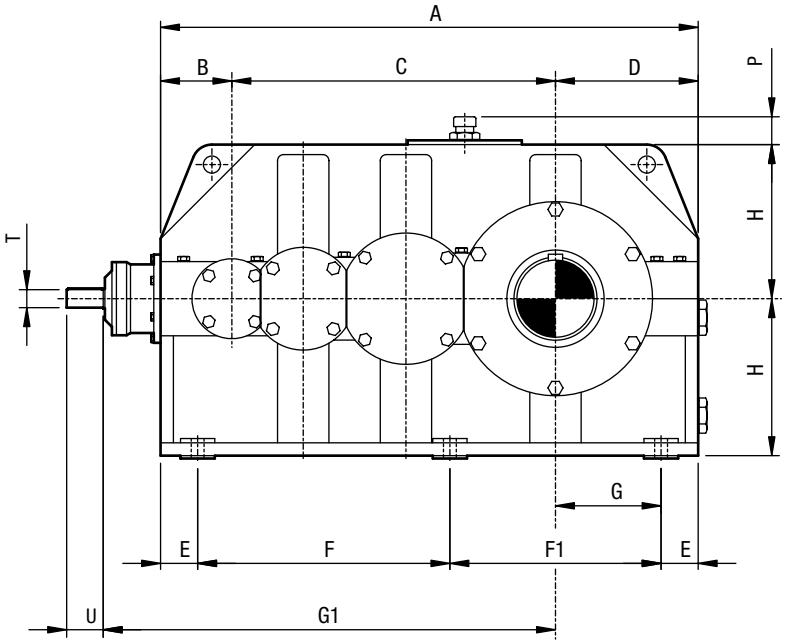


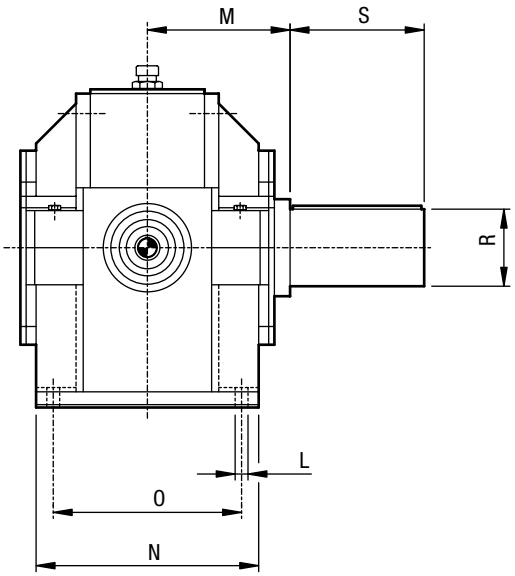


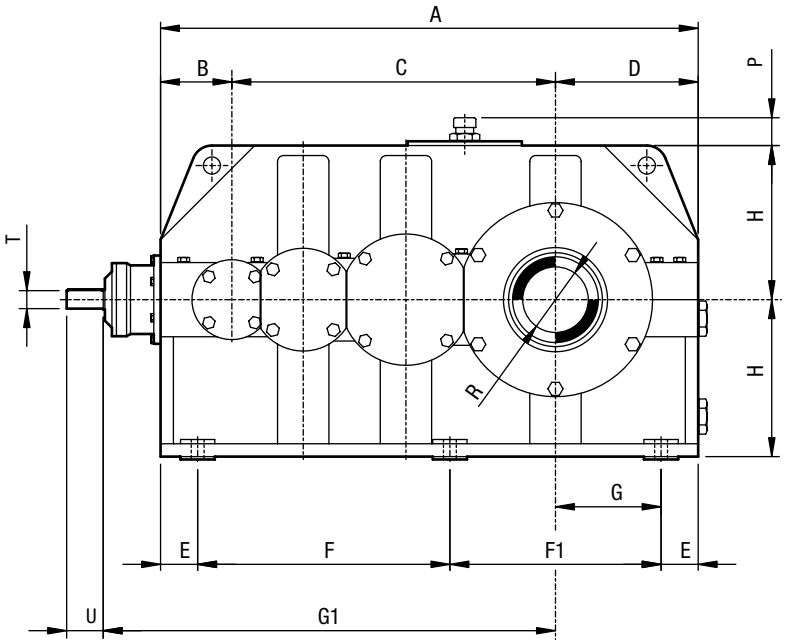
																				iN 80-225		iN 250-355	
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**
10	487	63	284	140	38	205,5	204	102	396	140	M16	14	115	210	180	20	210	65	110	20	40	20	40
20	550	70	320	160	42	233	236	118	445	160	M18	16	135	235	200	22	240	80	140	20	40	20	40
30	622	80	362	180	46	265	268	134	502	180	M20	18	145	260	220	22	270	90	160	22	45	20	40
40	695	90	405	200	52	295,5	296	148	565	200	M22	20	160	295	250	22	300	100	180	24	50	22	45
50	781	100	456	225	57	333,5	336	168	636	225	M24	22	170	325	275	22	340	110	200	28	55	24	50
60	874	112	512	250	62	375	376	188	712	250	M27	25	190	360	300	22	380	120	210	32	65	28	55
70	972	125	567	280	72	414	416	208	792	280	M30	27	225	415	350	25	430	140	250	35	70	32	65
80	1095	140	640	315	80	467,5	470	235	890	315	M33	30	250	455	385	25	490	160	280	40	80	35	70
90	1240	160	725	355	87	533	536	268	1005	355	M36	33	280	535	460	25	560	170	300	45	90	40	80
100	1390	180	810	400	93	602	614	307	1125	400	M39	36	310	600	520	25	640	200	350	50	100	45	90
110	1562	200	912	450	100	681	700	350	1247	450	M42	39	375	710	620	25	730	220	390	55	110	50	100

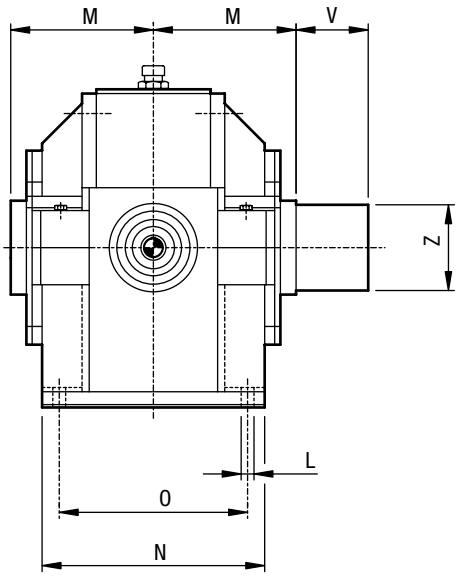
BEVEL-HELICAL UNITS

RHD series quadruple reduction





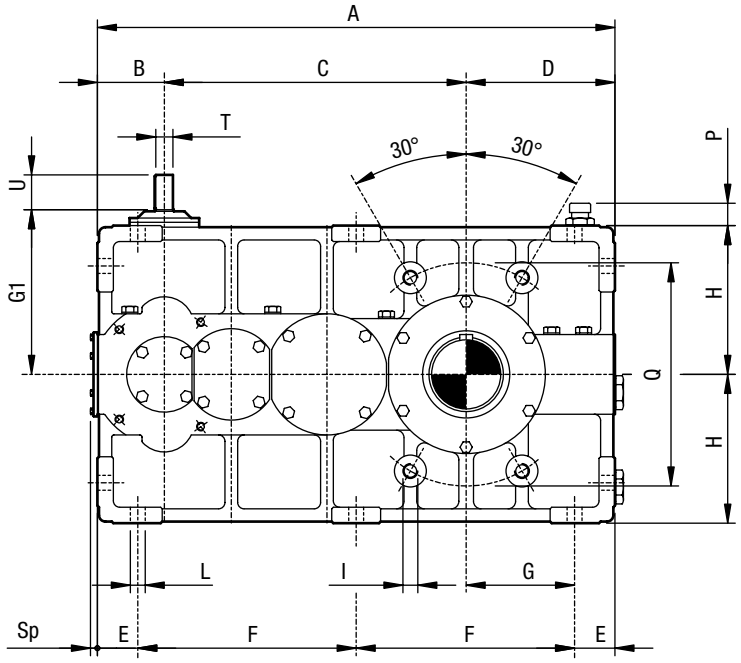


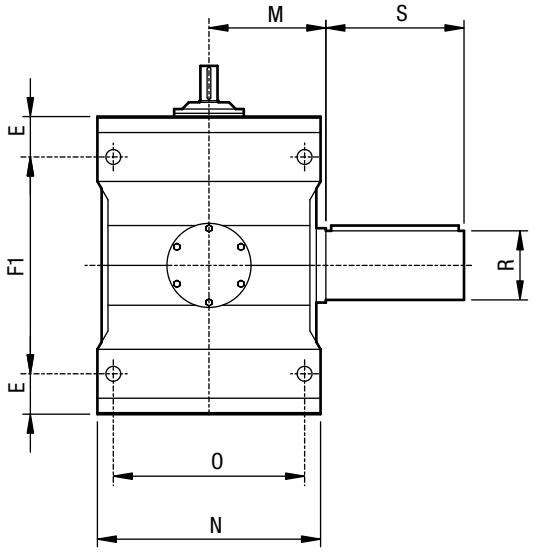


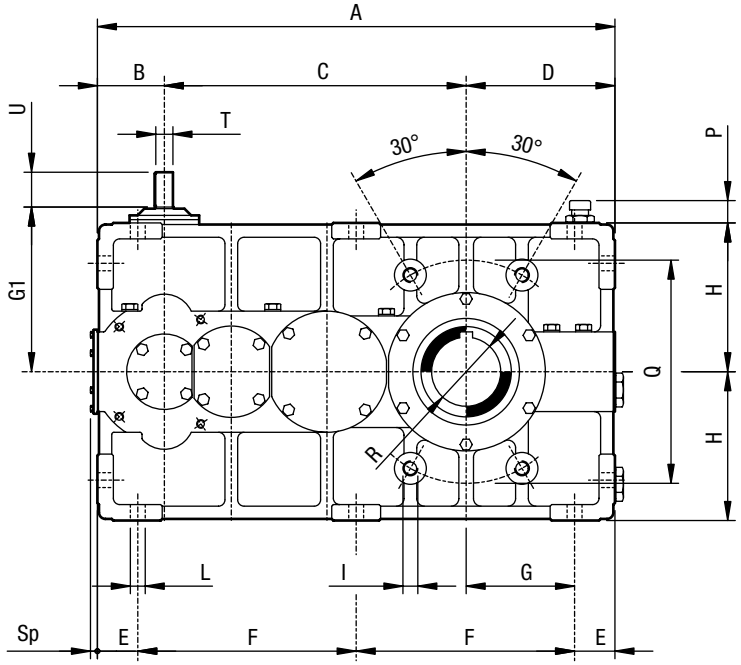
																		iN 80-225		iN 250-355			
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**L**	**M**	**N**	**O**	**P**	**R**	**S**	**T**	**U**	**T**	**U**	**V**	**Z**
120	1700	225	1025	450	110	800	680	340	1425	500	42	420	700	590	33	240	410	60	120	55	110	175	300
130	1884	250	1134	500	125	884	750	375	1584	560	45	480	780	660	35	270	470	70	140	60	120	190	340
140	2120	280	1280	560	150	1000	820	410	1780	630	48	505	850	720	37	300	500	80	160	70	140	205	380
150	2395	315	1450	630	170	1135	920	460	2010	710	52	565	930	790	40	340	550	90	180	80	160	235	420
160	2685	355	1620	710	200	1265	1020	510	2250	800	56	630	1020	870	43	380	630	100	200	90	180	260	460

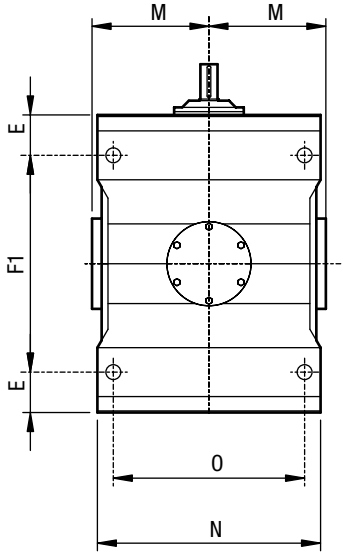
BEVEL-HELICAL UNITS

RVD series quadruple reduction









																				iN 80-225		iN 250-355		
Size	**A**	**B**	**C**	**D**	**E**	**F**	**F1**	**G**	**G1**	**H**	**I**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**T**	**U**	**Sp**
10	487	63	284	140	38	205,5	204	102	160	140	M16	14	115	210	180	20	210	65	110	20	40	20	40	10
20	550	70	320	160	42	233	236	118	180	160	M18	16	135	235	200	22	240	80	140	20	40	20	40	10
30	622	80	362	180	46	265	268	134	200	180	M20	18	145	260	220	22	270	90	160	22	45	20	40	11
40	695	90	405	200	52	295,5	296	148	225	200	M22	20	160	295	250	22	300	100	180	24	50	22	45	11
50	781	100	456	225	57	333,5	336	168	250	225	M24	22	170	325	275	22	340	110	200	28	55	24	50	11
60	874	112	512	250	62	375	376	188	280	250	M27	25	190	360	300	22	380	120	210	32	65	28	55	12
70	972	125	567	280	72	414	416	208	315	280	M30	27	225	415	350	25	430	140	250	35	70	32	65	13
80	1095	140	640	315	80	467,5	470	235	355	315	M33	30	250	455	385	25	490	160	280	40	80	35	70	16
90	1240	160	725	355	87	533	536	268	400	355	M36	33	280	535	460	25	560	170	300	45	90	40	80	17
100	1390	180	810	400	93	602	614	307	450	400	M39	36	310	600	520	25	640	200	350	50	100	45	90	18
110	1562	200	912	450	100	681	700	350	500	450	M42	39	375	710	620	25	730	220	390	55	110	50	100	22

P Series - *Helical units - Actual ratios*

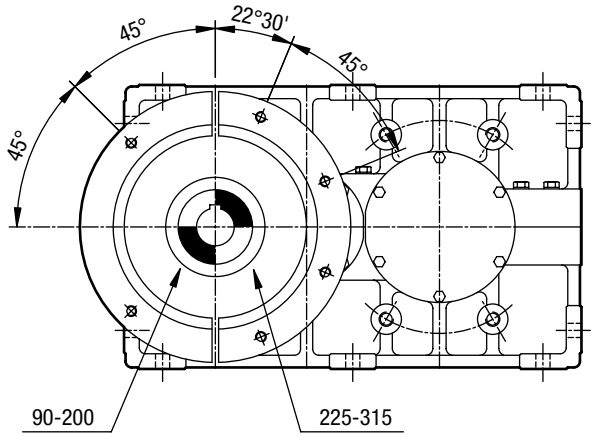
		Size															
	i_N	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1.12	1.118	1.118	1.147	1.147	1.111	1.139	1.118	1.118	1.147	1.147	1.111					
	1.25	1.25	1.25	1.281	1.281	1.235	1.265	1.25	1.25	1.281	1.281	1.235					
	1.4	1.4	1.4	1.433	1.433	1.375	1.406	1.4	1.4	1.433	1.433	1.375					
	1.6	1.571	1.571	1.607	1.607	1.621	1.567	1.571	1.571	1.607	1.607	1.621					
	1.8	1.769	1.769	1.808	1.808	1.815	1.75	1.769	1.769	1.808	1.808	1.815					
	2	2	2	2.042	2.042	2.04	1.962	2	2	2.042	2.042	2.04					
	2.25	2.273	2.273	2.318	2.318	2.3	2.208	2.273	2.273	2.318	2.318	2.304					
	2.5	2.429	2.429	2.476	2.476	2.455	2.5	2.429	2.429	2.476	2.476	2.455					
	2.8	2.789	2.789	2.842	2.842	2.8	2.85	2.789	2.789	2.842	2.842	2.8					
	3.15	3.235	3.235	3.056	3.056	3.222	3.053	3.235	3.235	3.056	3.056	3.222					
	3.55	3.5	3.5	3.563	3.563	3.471	3.529	3.5	3.5	3.563	3.563	3.471					
	4	4.143	4.143	3.867	3.867	4.067	4.133	4.143	4.143	3.867	3.867	4.067					
	4.5	4.538	4.538	4.615	4.615	4.429	4.5	4.538	4.538	4.615	4.615	4.429					
	5	5	5	5.083	5.083	4.846	4.923	5	5	5.083	5.083	4.846					
	5.6	5.545	5.545	5.636	5.636	5.909	5.417	5.545	5.545	5.636	5.636	5.909					
PB	6.3	6.321	6.484	6.154	6.429	6.397	6.268	6.321	6.484	6.154	6.429	6.397	6.268	6.321	6.484	6.154	6.429
	7.1	7.157	6.892	6.923	7.278	7.263	7.096	7.157	6.892	6.923	7.278	7.263	7.096	7.157	6.892	6.923	7.278
	8	8.131	7.806	7.811	7.754	7.75	8.063	8.131	7.806	7.811	7.754	7.75	8.063	8.131	7.808	7.811	7.754
	9	9.283	8.88	8.846	8.829	8.857	9.205	9.283	8.88	8.846	8.829	8.857	9.205	9.283	8.88	8.846	8.829
	10	9.941	10.158	10.170	10.110	9.490	9.857	9.941	10.156	10.070	10.110	10.186	9.857	9.941	10.158	10.070	10.110
	11.2	11.466	10.892	11.538	10.846	10.955	11.368	11.466	10.392	11.538	10.846	10.955	11.368	11.466	10.392	11.538	10.846
	12.5	12.355	12.607	12.389	12.564	12.765	12.25	12.355	12.607	12.389	12.564	12.765	12.25	12.355	12.607	12.389	12.564
	14	14.466	13.615	14.389	13.575	13.839	14.344	14.466	13.615	14.389	13.575	13.839	14.344	14.466	13.615	14.389	13.575
	16	15.733	16.036	15.577	16	16.449	15.6	15.733	16.036	15.577	16.	16.449	15.6	15.733	16.036	15.577	16.
	18	17.181	17.505	18.462	17.473	18.055	18.692	17.181	17.505	18.462	17.473	18.055	18.682	17.181	17.505	18.462	17.473
	20	20.801	19.201	20.237	19.172	19.929	20.625	20.801	19.201	20.237	19.172	19.929	20.625	20.801	19.201	20.237	19.172
	22.5			22.308			22.909	23.105	23.517	22.308	23.497	22.143	22.909	23.105	23.517		23.497
	25											24.8					
	28																
	31.5																
PC	18																
	20																
	22.5	22.751	22.503		23.137	22.42										22.984	
	25	25.655	25.415	24.399	24.566	25.243	24.492	25.655	25.415	24.399	24.566		24.492	25.655	25.415	24.566	24.566
	28	27.257	28.744	27.513	27.719	28.469	27.5	27.257	28.744	27.513	27.719	28.469	27.5	27.257	28.744	27.513	27.719
	31.5	30.817	30.593	31.071	31.339	30.262	30.938	30.817	32.584	31.071	31.339	32.192	30.938	30.817	32.584	31.071	31.339
	35.5	34.946	34.734	35.178	35.538	34.277	34.904	34.946	34.734	35.178	35.538	36.536	34.904	34.946	34.734	35.178	35.538
	40	39.794	39.596	39.968	40.468	38.991	39.531	39.794	39.596	39.968	40.468	38.991	39.531	39.794	39.596	39.968	40.468
	45	45.565	45.385	45.629	46.337	44.602	45	45.565	45.385	45.629	46.337	44.602	45	45.565	45.385	45.629	46.337
	50	48.883	48.713	48.864	49.712	51.395	51.563	48.833	48.713	48.864	49.712	51.395	51.563	48.833	48.713	48.864	49.712
	56	56.626	56.479	56.356	57.585	55.357	55.362	56.626	56.479	56.356	57.585	55.357	55.362	56.626	56.479	56.356	57.585
	63	61.18	61.047	60.726	62.217	64.768	64.301	61.18	61.047	60.726	62.217	64.768	64.301	61.18	61.047	60.726	62.217
	71	72.111	72.01	71.106	73.333	70.414	69.609	72.111	72.01	71.106	73.333	70.414	69.609	72.111	72.01	71.106	73.333
	80	78.748	78.667	77.333	80.082	76.867	82.5	78.748	78.667	77.333	80.082	76.867	82.5	78.748	78.667	77.333	80.082
	90	86.405	86.347	92.663	87.87	93	90.433	86.405	86.347	92.663	87.87	93	90.433	86.405	86.347	92.663	87.87
	100	95.339	95.308	102.24	96.955		99.688	95.339	105.9	102.24	96.955	103.27	99.688	95.34	105.9	102.24	96.955
	112																
	125																
PD	100					98.813											
	112	110.01	114.93	114.64	112.59	111.6	115.77	110.72	113.75	114.64	112.59	111.6	115.77	110.72	113.75	114.64	112.59
	125	127.12	128.07	128.63	127.04	126.21	12295	124.93	128.17	121.41	127.04	126.21	12295	124.93	128.17	121.41	127.05
	140	140.2	142.96	136.32	143.64	143.08	138.85	141.24	136.15	136.32	143.64	143.08	138.85	141.24	136.15	136.32	143.64
	160	163	159.98	162.83	162.88	162.75	157.2	160.17	163.93	162.83	162.88	162.75	157.2	160.17	163.93	162.83	162.89
	180	180.82	179.62	184.04	185.48	186	178.61	182.39	174.73	184.04	185.48	186	178.61	182.39	174.73	184.04	185.48
	200	201.27	202.53	195.97	198.32	199.29	203.91	208.84	199.28	195.97	198.32	199.29	203.91	208.84	199.28	195.97	198.32
	225	225	229.6	223.08	227.84	230.05	218.36	224.05	228.74	223.08	227.84	230.05	218.36	224.05	228.74	223.08	227.85
	250	252.86	245.08	255.61	244.94	248	251.84	240.86	245.79	255.61	244.94	248	251.84	240.86	245.79	255.61	244.94
	280	286.02	280.91	274.44	285.16	290.63	271.37	280.41	285.92	274.44	285.16	290.63	271.37	280.41	285.92	274.44	285.16
	315	305.09	325.17	318.76	309.04	316.2	317.75	303.89	309.75	318.76	309.04	316.2	317.75	303.89	309.75	318.76	309.04
	355	349.58	351.45	345.07	367.04	345.43	345.58	360.93	367.62	345.07	367.04	345.43	345.58	360.93	367.62	345.07	367.04
	400	405.19	415.27	408.97	402.74	418.5	414.09	396.02	403.22	408.97	402.74	418.5	414.09	396.02	403.23	408.97	402.74
	450	438.56	454.54	448.3	444.38		456.9	436.97	444.77	448.30	444.38	465	456.90	436.97	444.77	448.30	444.38
	500	520.7	500.37	494.18			507.5	485.36	493.87	494.18	493.59	520.8	507.5	485.36	493.87	494.18	493.59

RH • RV Series - *Helical units - Actual ratios*

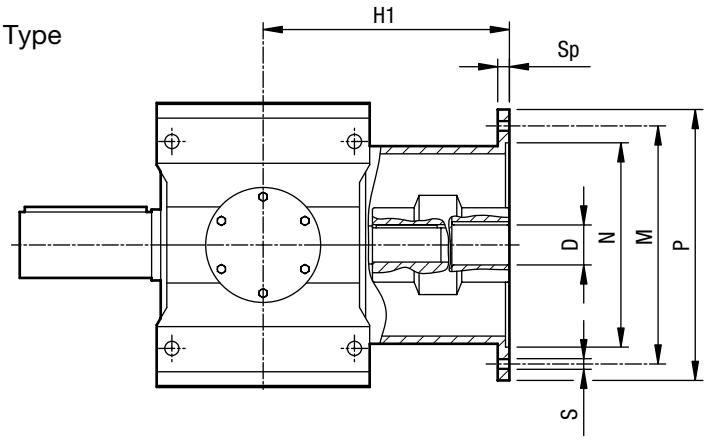
		Size															
	i_N	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RHB RVB	5	5.078	5.078	5.177	5.177	5.132	4.409	5.078	5.078	5.143	5.129	5.063					
	5.6	5.436	5.436	5.541	5.541	5.476	5.576	5.436	5.436	5.504	5.489	5.775					
	6.3	6.273	6.273	6.389	6.389	6.273	6.383	6.273	6.273	6.346	6.329	6.188					
	7.1	7.318	7.318	6.888	6.888	7.257	6.854	7.318	7.318	6.842	7.379	7.158					
	8	7.945	7.945	8.085	8.085	7.841	7.972	7.945	7.945	8.031	8.01	7.734					
	9	8.662	8.662	8.812	8.812	9.26	8.642	8.662	8.662	8.753	8.73	9.134					
	10	10.455	10.455	9.65	9.65	10.133	10.294	10.455	10.455	9.586	9.56	9.995					
	11.2	11.595	11.595	11.785	11.785	11.152	11.326	11.595	11.595	11.706	11.675	11					
	12.5	12.16	12.16	12.373	12.373	12	12.2	12.16	12.16	12.373	12.373	12					
	14	14.523	14.523	13.486	13.486	14.171	14.4	14.523	14.523	14.769	13.486	14.171					
	16	16	16	16.267	16.267	15.508	15.754	16	16	16.267	16.267	15.508					
	18	17.745	17.745	18.036	18.036	17.067	17.333	17.745	17.745	18.036	18.036	17.067					
RHC RVC	20	19.41	19.842	19.72	19.739	19.842	20.61	20.787	19.842	19.72	19.739	19.842	20.473	20.593	19.572		
	22.5	22.3	22.775	22.517	22.678	22.906	22.111	22.3	22.775	22.517	22.678	22.906	21.963	22.093	22.465		
	25	25.833	24.473	24.126	24.38	24.693	25.614	25.833	24.473	24.126	24.38	24.693	25.442	25.592	24.14		
	28	27.91	28.469	27.879	28.383	28.937	27.674	27.91	28.469	27.879	28.383	28.937	27.489	27.65	28.082		
	31.5	32.897	30.841	32.57	30.76	31.483	32.618	32.897	30.841	32.57	30.76	31.483	32.4	32.59	30.422		
	35.5	35.925	36.602	35.385	36.533	34.393	35.62	35.925	36.602	35.385	36.533	34.393	35.382	35.59	36.105		
	40	39.418	40.148	38.601	40.086	41.669	39.084	39.418	40.148	38.601	40.086	41.669	38.822	39.051	39.602		
	45	43.494	44.284	42.313	44.231	46.299	43.125	43.494	44.284	42.313	44.231	46.299	42.837	43.088	43.683		
	50	50.347	49.015	49.846	49.129	48.183	49.92	50.347	51.315	54.154	51.2	52.637	49.92	50.347	51.315		
	56	54.98	58.092	54.154	55.912	57.776	54.514	54.98	56.018	59.077	55.912	57.776	54.514	54.98	56.018		
	63	60.327	63.678	64.757	61.349	63.771	66	60.327	61.444	64.757	61.349	63.771	66	66.564	61.444		
	71	73.936	70.195	71.385	75.189	70.857	73.309	73.936	67.774	71.385	67.692	70.857	73.309	73.936	67.774		
	80		77.897		84.185	79.36	82.08	82.782	75.256	79.217	75.189	79.36			75.256		
	90																
	100																
RHD RVD	80	77.926		78.361									82.656	77.926		77.837	78.508
	90	88.964	88.569	89.231	90.472	87.126	88.125	88.964	88.569	89.231	90.472	87.126	88.125	88.964	88.569	88.634	89.629
	100	102.21	101.85	102.17	103.94	100.01	100.625	102.21	101.85	102.17	103.94	100.01	100.63	102.21	101.85	101.49	102.974
	112	109.88	109.55	109.61	111.74	115.75	115.757	109.88	109.55	109.61	111.74	107.46	115.76	109.88	109.55	108.88	110.7
	125	127.92	127.64	126.97	120.41	125.01	124.583	127.92	127.64	126.97	120.41	125.01	124.58	127.92	127.64	126.12	128.88
	140	138.64	138.39	137.19	140.99	135.42	145.547	138.64	138.39	137.19	140.99	135.42	145.55	138.64	138.39	136.27	139.67
	160	164.65	164.49	161.7	153.33	160.72	158.125	164.654	164.48	161.7	153.33	160.72	158.13	164.65	164.49	160.62	165.89
	180	180.67	180.54	176.58	183.73	176.29	172.5	180.67	180.54	176.58	183.73	176.29	172.5	180.67	180.54	175.4	182.02
	200	199.35	199.28	193.75	202.72	194.46	208.438	199.35	199.28	193.75	202.72	194.45	208.44	199.35	199.28	192.45	200.84
	225	230.76	230.43	227.54	234.67	225.33	222.75	230.76	221.42	219.69	234.67	225.33	222.75	230.76	230.43	227.54	234.67
	250	251.99	251.73	247.47	256.26	245.98	242	251.99	251.73	260.92	256.26	245.98	242	251.99	251.73	247.47	256.26
	280	276.5	276.31	270.24	281.18	269.8	289.385	276.5	276.31	286.3	281.18	269.8	289.4	276.5	276.31	270.24	281.18
	315	305.09	304.99	327.18	310.26	297.6	319	305.09	304.98	315.9	310.26	330.45	319	305.09	304.99	327.18	310.26
	355	338.87	338.87	363.41	344.62	335.78	354	338,871	379.54	350.88	350.88	369.87			338.87		
	400						379,415										

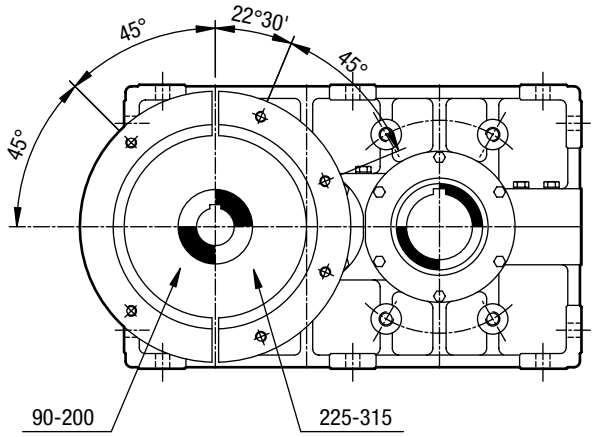
MOTORIZED GEAR UNITS

Helical unit PB series

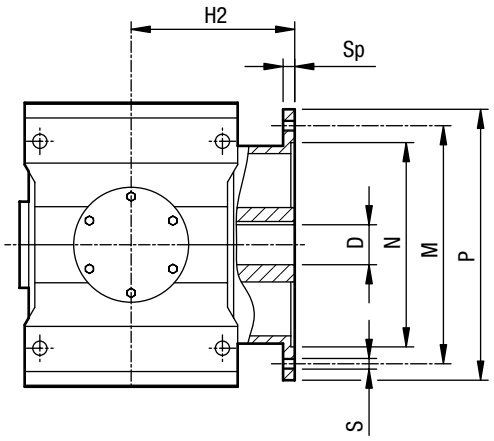


BC Type





PAM Type



Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
10	90	24	165	130	200	M10	12	224	130
	100-112	28	215	180	250	M12	14	234	140
	132	38	265	230	300	M12	16	254	160
	160	42	300	250	350	M16	18	284	190
	180	48	300	250	350	M16	18	284	
20	100-112	28	215	180	250	M12	14	264	145
	132	38	265	230	300	M12	16	284	165
	160	42	300	250	350	M16	18	314	195
	180	48	300	250	350	M16	18	314	195
	200	55	350	300	400	M16	20	314	
30	100-112	28	215	180	250	M12	14	279	160
	132	38	265	230	300	M12	16	299	180
	160	42	300	250	350	M16	18	329	210
	180	48	300	250	350	M16	18	329	210
	200	55	350	300	400	M16	20	329	210
	225	60	400	350	450	M16	20	359	
40	132	38	265	230	300	M12	16	334	180
	160	42	300	250	350	M16	18	364	210
	180	48	300	250	350	M16	18	364	210
	200	55	350	300	400	M16	20	364	210
	225	60	400	350	450	M16	20	394	240
	250	65	500	450	550	M16	20	394	
50	132	38	265	230	300	M12	16	354	200
	160	42	300	250	350	M16	18	384	230
	180	48	300	250	350	M16	18	384	230
	200	55	350	300	400	M16	20	384	230
	225	60	400	350	450	M16	20	414	260
	250	65	500	450	550	M16	20	414	260
	280	75	500	450	550	M16	20	414	

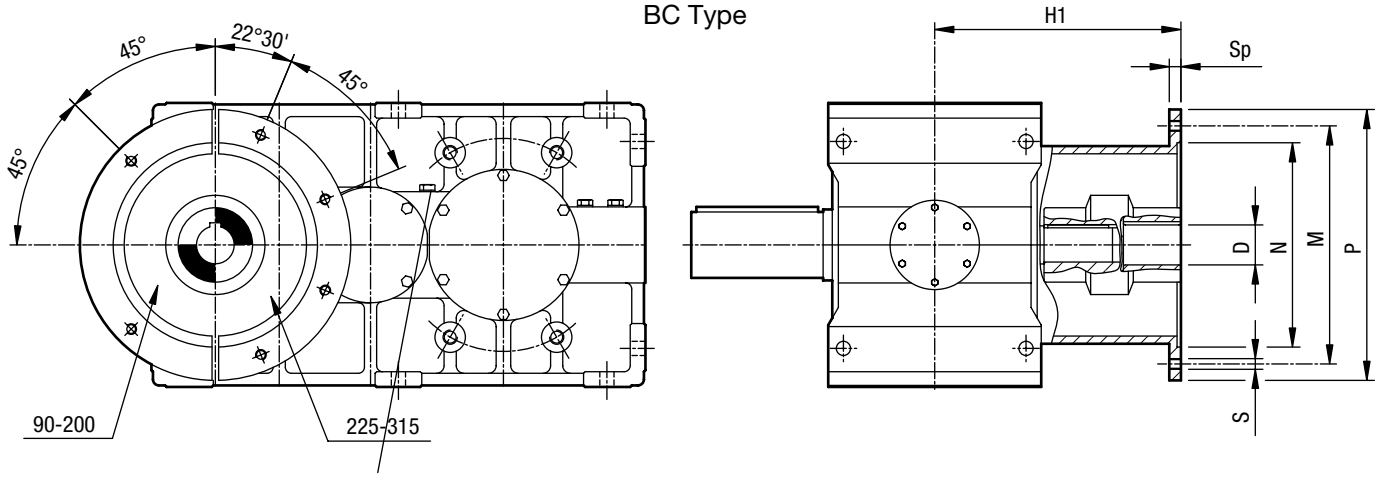
Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
60	160	42	300	250	350	M16	18	414	220
	180	48	300	250	350	M16	18	414	220
	200	55	350	300	400	M16	20	414	220
	225	60	400	350	450	M16	20	444	250
	250	65	500	450	550	M16	20	444	250
	280	75	500	450	550	M16	20	444	250
70	160	42	300	250	350	M16	18	479	245
	180	48	300	250	350	M16	18	479	245
	200	55	350	300	400	M16	20	479	245
	225	60	400	350	450	M16	20	509	275
	250	65	500	450	550	M16	20	509	275
	280	75	500	450	550	M16	20	509	275
80	200	55	350	300	400	M16	20	514	275
	225	60	400	350	450	M16	20	544	305
	250	65	500	450	550	M16	20	544	305
	280	75	500	450	550	M16	20	544	305
	315	80	600	550	660	M20	24	574	335
90	200	55	350	300	400	M16	20	564	320
	225	60	400	350	450	M16	20	594	350
	250	65	500	450	550	M16	20	594	350
	280	75	500	450	550	M16	20	594	350
	315	80	600	550	660	M20	24	624	380

All dimensions refer to IEC frame size motors

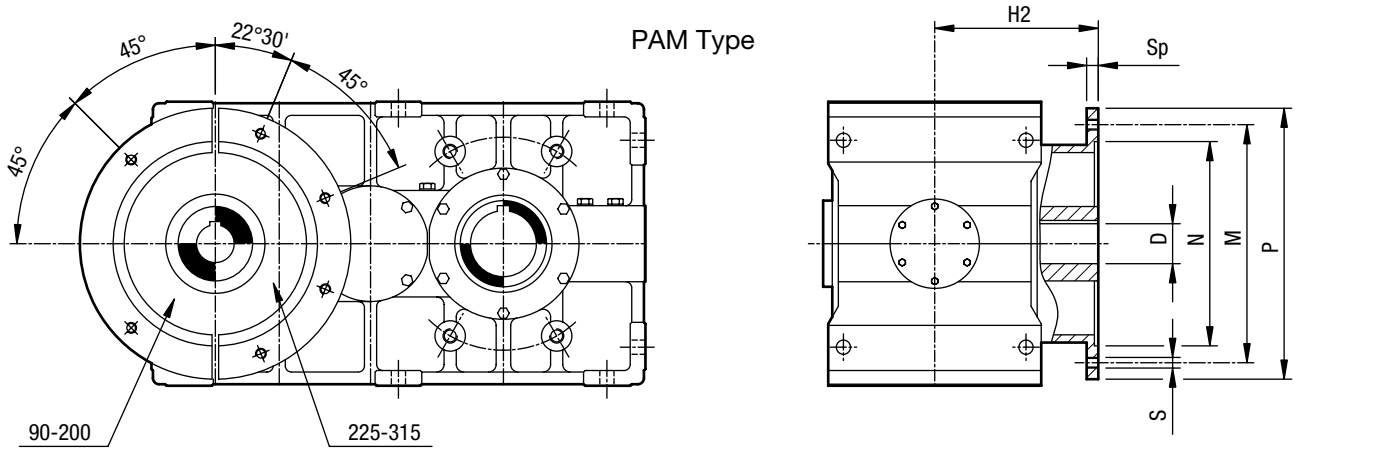
MOTORIZED GEAR UNITS

Helical unit PC series

BC Type



PAM Type



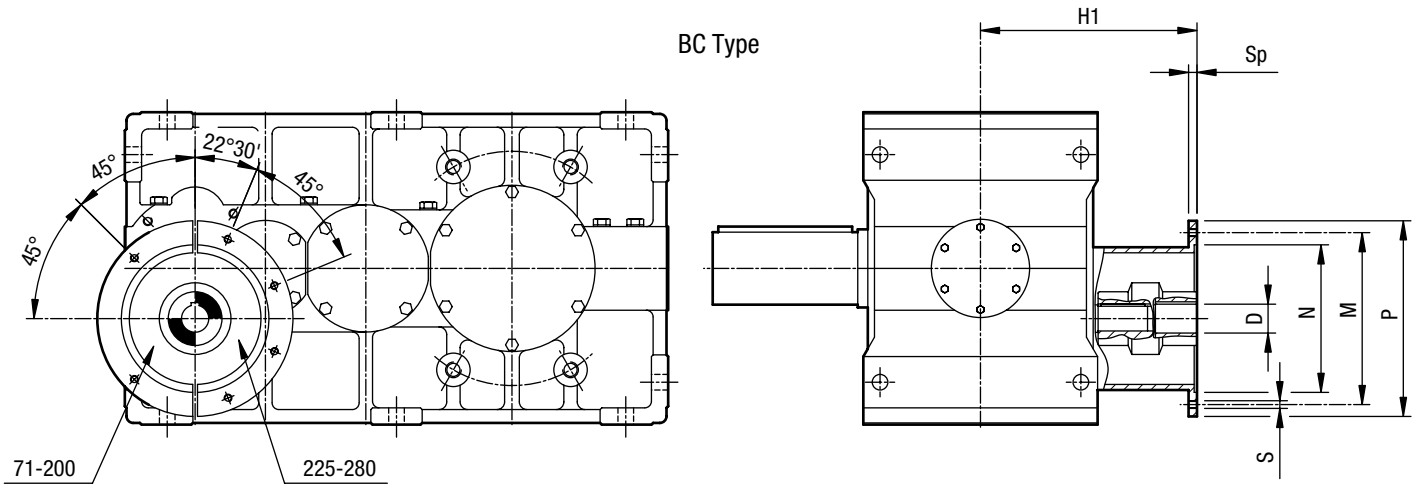
Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
10	90	24	165	130	200	M10	12	219	125
	100-112	28	215	180	250	M12	14	229	135
	132	38	265	230	300	M12	16	249	
	160	42	300	250	350	M16	18	279	
	180	48	300	250	350	M16	18	279	
20	100-112	28	215	180	250	M12	14	249	140
	132	38	265	230	300	M12	16	269	
	160	42	300	250	350	M16	18	299	
	180	48	300	250	350	M16	18	299	
	200	55	350	300	400	M16	20	299	
30	100-112	28	215	180	250	M12	14	264	155
	132	38	265	230	300	M12	16	284	175
	160	42	300	250	350	M16	18	314	
	180	48	300	250	350	M16	18	314	
	200	55	350	300	400	M16	20	314	
	225	60	400	350	450	M16	20	344	
40	132	38	265	230	300	M12	16	229	175
	160	42	300	250	350	M16	18	329	205
	180	48	300	250	350	M16	18	329	
	200	55	350	300	400	M16	20	329	
	225	60	400	350	450	M16	20	359	
	250	65	500	450	550	M16	20	359	
50	132	38	265	230	300	M12	16	319	195
	160	42	300	250	350	M16	18	349	225
	180	48	300	250	350	M16	18	349	225
	200	55	350	300	400	M16	20	349	
	225	60	400	350	450	M16	20	379	
	250	65	500	450	550	M16	20	379	
	280	75	500	450	550	M16	20	379	

Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
60	132	38	265	230	300	M12	16	344	215
	160	42	300	250	350	M16	18	374	245
	180	48	300	250	350	M16	18	374	245
	200	55	350	300	400	M16	20	374	245
	225	60	400	350	450	M16	20	404	
	250	65	500	450	550	M16	20	404	
	280	75	500	450	550	M16	20	404	
70	160	42	300	250	350	M16	18	429	245
	180	48	300	250	350	M16	18	429	245
	200	55	350	300	400	M16	20	429	245
	225	60	400	350	450	M16	20	459	275
	250	65	500	450	550	M16	20	459	
	280	75	500	450	550	M16	20	459	
80	180	48	300	250	350	M16	18	464	270
	200	55	350	300	400	M16	20	464	270
	225	60	400	350	450	M16	20	494	300
	250	65	500	450	550	M16	20	494	300
	280	75	500	450	550	M16	20	494	
90	200	55	350	300	400	M16	20	504	315
	225	60	400	350	450	M16	20	534	345
	250	65	500	450	550	M16	20	534	345
	280	75	500	450	550	M16	20	534	345
	315	80	600	550	660	M20	24	564	

All dimensions refer to IEC frame size motors

MOTORIZED GEAR UNITS

Helical unit PD series



Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1
10	71	14	130	110	160	M8	12	184
	80	19	165	130	200	M10	12	194
	90	24	165	130	200	M10	12	204
	100-112	28	215	180	250	M12	14	214
	132	38	265	230	300	M12	16	234
20	80	19	165	130	200	M10	12	214
	90	24	165	130	200	M10	12	224
	100-112	28	215	180	250	M12	14	234
	132	38	265	230	300	M12	16	254
30	80	19	165	130	200	M10	12	239
	90	24	165	130	200	M10	12	249
	100-112	28	215	180	250	M12	14	259
	132	38	265	230	300	M12	16	279
	160	42	300	250	350	M16	18	309
40	90	24	165	130	200	M10	12	264
	100-112	28	215	180	250	M12	14	274
	132	38	265	230	300	M12	16	294
	160	42	300	250	350	M16	18	324
50	100-112	28	215	180	250	M12	14	284
	132	38	265	230	300	M12	16	304
	160	42	300	250	350	M16	18	334
	180	48	300	250	350	M16	18	334

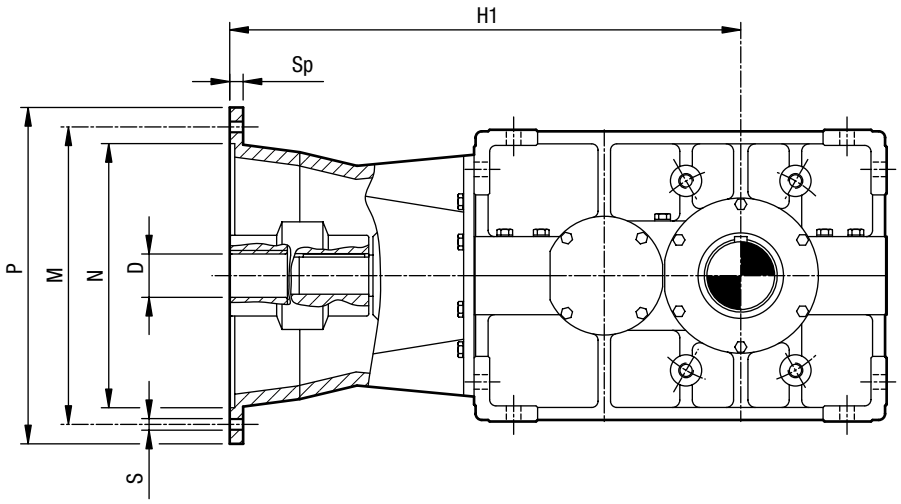
All dimensions refer to IEC frame size motors

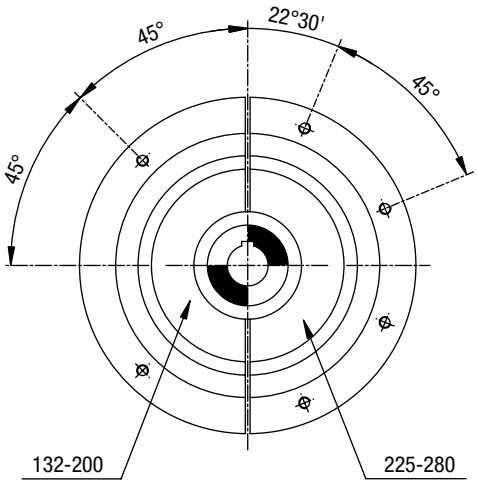
Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1
60	100-112	28	215	180	250	M12	14	309
	132	38	265	230	300	M12	16	329
	160	42	300	250	350	M16	18	359
	180	48	300	250	350	M16	18	359
	200	55	350	300	400	M16	20	359
70	100-112	28	215	180	250	M12	14	344
	132	38	265	230	300	M12	16	364
	160	42	300	250	350	M16	18	394
	180	48	300	250	350	M16	18	394
	200	55	350	300	400	M16	20	394
	225	60	400	350	450	M16	20	424
80	132	38	265	230	300	M12	16	399
	160	42	300	250	350	M16	18	429
	180	48	300	250	350	M16	18	429
	200	55	350	300	400	M16	20	429
	225	60	400	350	450	M16	20	459
	250	65	500	450	550	M16	20	459
90	132	38	265	230	300	M12	16	434
	160	42	300	250	350	M16	18	464
	180	48	300	250	350	M16	18	464
	200	55	350	300	400	M16	20	464
	225	60	400	350	450	M16	20	494
	250	65	500	450	550	M16	20	494
	280	75	500	450	550	M16	20	494

MOTORIZED GEAR UNITS

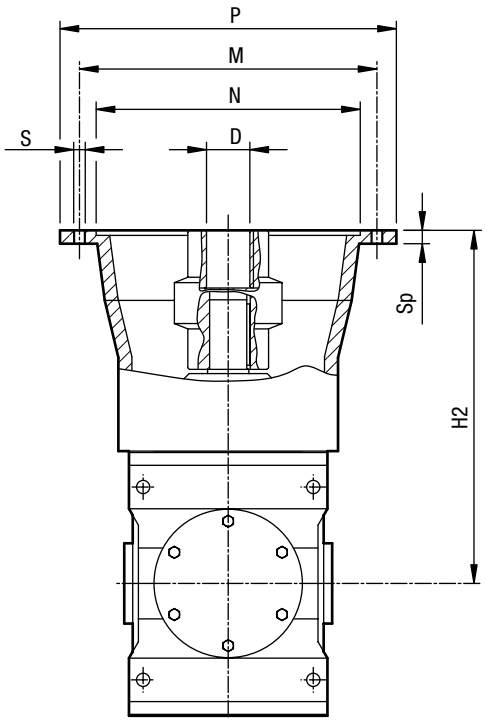
Bevel-helical units RHB/RVB series

RHB





RVB



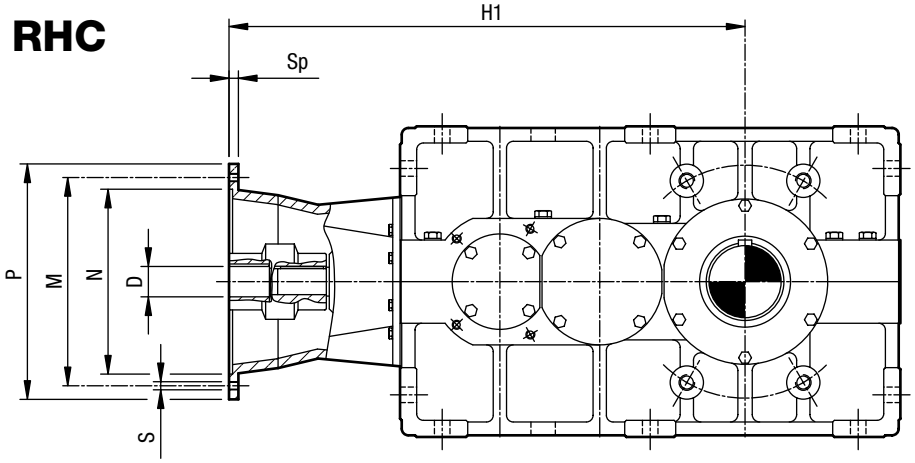
Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
10	132	38	265	230	300	M12	16	510	379
	160	42	300	250	350	M16	18	540	409
	180	48	300	250	350	M16	18	540	409
	200	55	350	300	400	M16	20	540	409
20	132	38	265	230	300	M12	16	564	414
	160	42	300	250	350	M16	18	594	444
	180	48	300	250	350	M16	18	594	444
	200	55	350	300	400	M16	20	594	444
	225	60	400	350	450	M16	20	624	474
30	160	42	300	250	350	M16	18	654	484
	180	48	300	250	350	M16	18	654	484
	200	55	350	300	400	M16	20	654	484
	225	60	400	350	450	M16	20	684	514
	250	65	500	450	550	M16	20	684	514
40	160	42	300	250	350	M16	18	719	529
	180	48	300	250	350	M16	18	719	529
	200	55	350	300	400	M16	20	719	529
	225	60	400	350	450	M16	20	749	559
	250	65	500	450	550	M16	20	749	559
50	160	42	300	250	350	M16	18	795	579
	180	48	300	250	350	M16	18	795	579
	200	55	350	300	400	M16	20	795	579
	225	60	400	350	450	M16	20	825	609
	250	65	500	450	550	M16	20	825	609
	280	75	500	450	550	M16	20	825	609
60	200	55	350	300	400	M16	20	874	634
	225	60	400	350	450	M16	20	904	664
	250	65	500	450	550	M16	20	904	664
	280	75	500	450	550	M16	20	904	664
70	200	55	350	300	400	M16	20	966	704
	225	60	400	350	450	M16	20	996	734
	250	65	500	450	550	M16	20	996	734
	280	75	500	450	550	M16	20	996	734
80	200	55	350	300	400	M16	20	1074	774
	225	60	400	350	450	M16	20	1104	804
	250	65	500	450	550	M16	20	1104	804
	280	75	500	450	550	M16	20	1104	804
90	200	55	350	300	400	M16	20	1194	854
	225	60	400	350	450	M16	20	1224	884
	250	65	500	450	550	M16	20	1224	884
	280	75	500	450	550	M16	20	1224	884

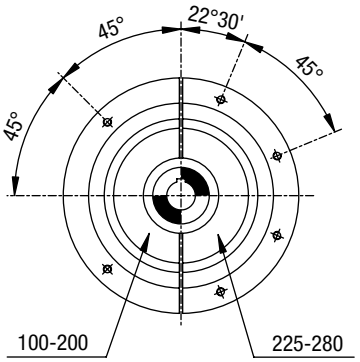
All dimensions refer to IEC frame size motors

MOTORIZED GEAR UNITS

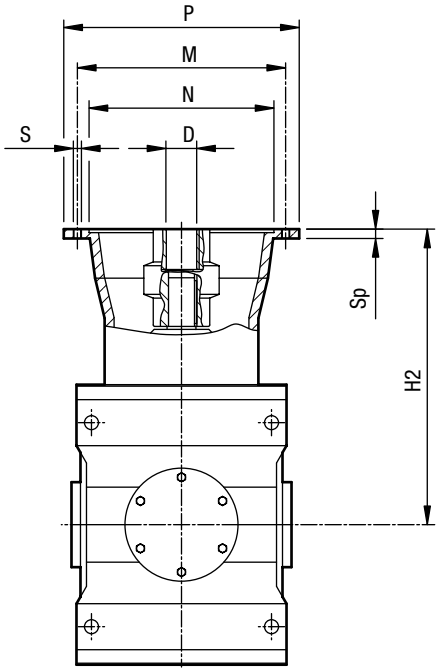
Bevel-helical units RHC/RVC series

RHC





RVC



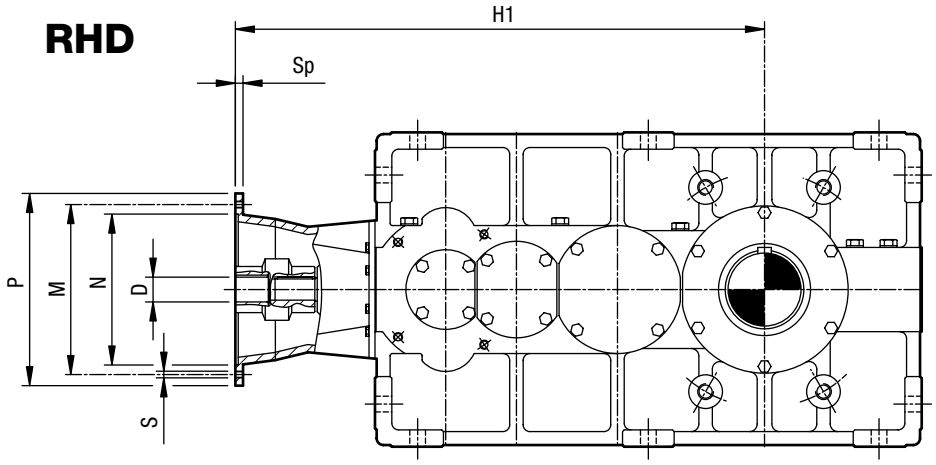
Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
10	100-112	28	215	180	250	M12	14	495	274
	132	38	265	230	300	M12	16	515	294
	160	42	300	250	350	M16	18	545	324
	180	48	300	250	350	M16	18	545	324
20	100-112	28	215	180	250	M12	14	549	299
	132	38	265	230	300	M12	16	569	319
	160	42	300	250	350	M16	18	599	349
	180	48	300	250	350	M16	18	599	349
	200	55	350	300	400	M16	20	599	349
30	132	38	265	230	300	M12	16	631	349
	160	42	300	250	350	M16	18	661	379
	180	48	300	250	350	M16	18	661	379
	200	55	350	300	400	M16	20	661	379
	225	60	400	350	450	M16	20	691	409
40	132	38	265	230	300	M12	16	694	379
	160	42	300	250	350	M16	18	724	409
	180	48	300	250	350	M16	18	724	409
	200	55	350	300	400	M16	20	724	409
	225	60	400	350	450	M16	20	754	439
	250	65	500	450	550	M16	20	754	439
50	160	42	300	250	350	M16	18	800	444
	180	48	300	250	350	M16	18	800	444
	200	55	350	300	400	M16	20	800	444
	225	60	400	350	450	M16	20	830	474
	250	65	500	450	550	M16	20	830	474
	280	75	500	450	550	M16	20	830	474
60	180	48	300	250	350	M16	18	884	484
	200	55	350	300	400	M16	20	884	484
	225	60	400	350	450	M16	20	914	514
	250	65	500	450	550	M16	20	914	514
	280	75	500	450	550	M16	20	914	514
70	200	55	350	300	400	M16	20	971	529
	225	60	400	350	450	M16	20	1001	559
	250	65	500	450	550	M16	20	1001	559
	280	75	500	450	550	M16	20	1001	559
80	225	60	400	350	450	M16	20	1109	609
	250	65	500	450	550	M16	20	1109	609
	280	75	500	450	550	M16	20	1109	609
90	250	65	500	450	550	M16	20	1229	664
	280	75	500	450	550	M16	20	1229	664

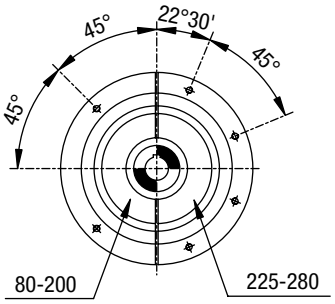
All dimensions refer to IEC frame size motors

MOTORIZED GEAR UNITS

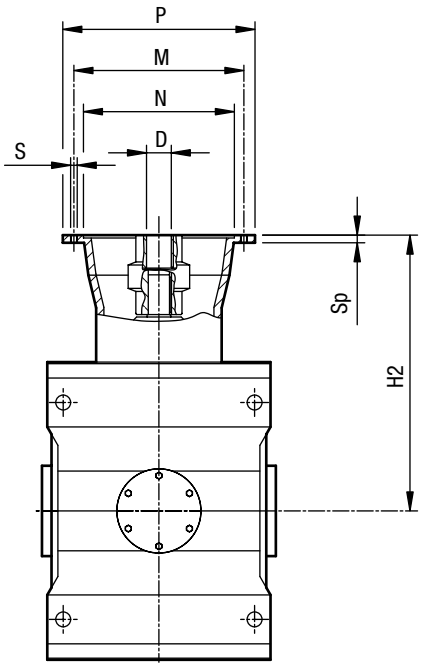
Bevel-helical units RHD/RVD series

RHD





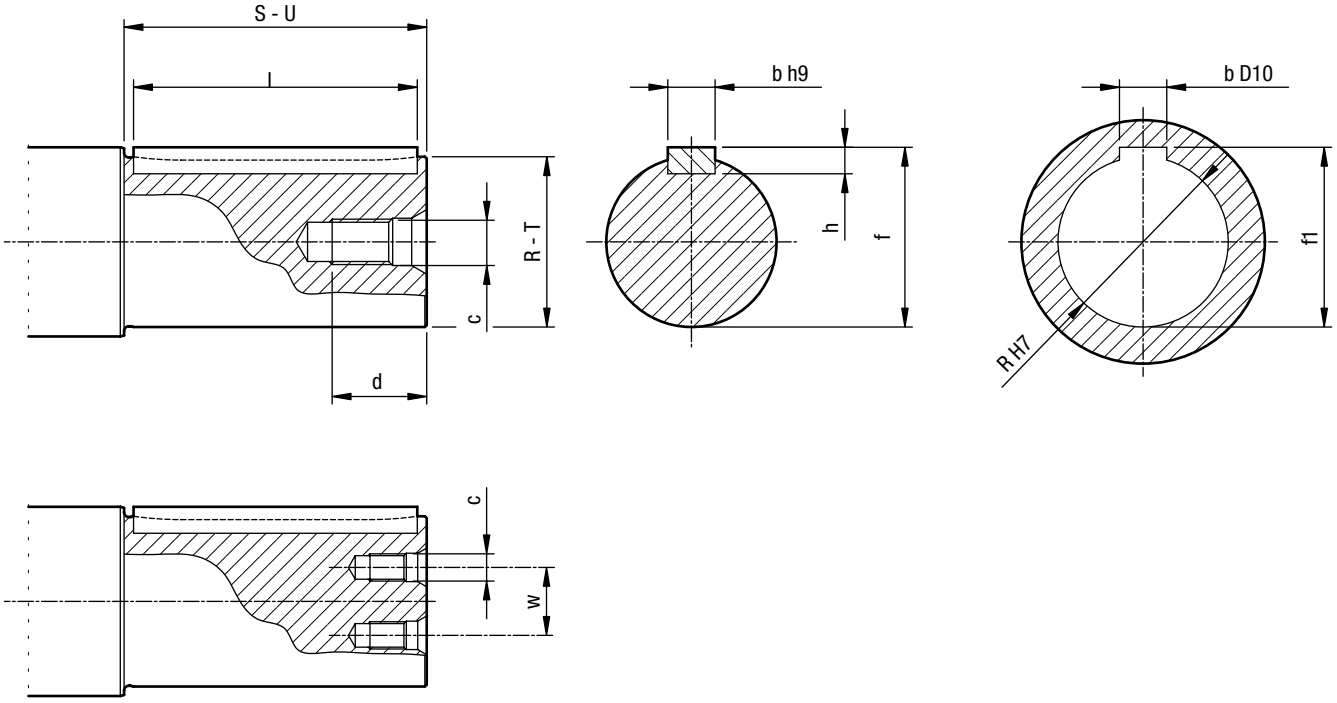
RVD



Unit Size	Motor IEC	D H7	M	N	P	S	Sp	H1	H2
10	80	19	165	130	200	M10	12	475	239
	90	24	165	130	200	M10	12	485	249
	100-112	28	215	180	250	M12	14	495	259
20	90	24	165	130	200	M10	12	539	274
	100-112	28	215	180	250	M12	14	549	284
	132	38	265	230	300	M12	16	569	304
30	90	24	165	130	200	M10	12	601	299
	100-112	28	215	180	250	M12	14	611	309
	132	38	265	230	300	M12	16	631	329
	160	42	300	250	350	M16	18	661	359
40	100-112	28	215	180	250	M12	14	679	339
	132	38	265	230	300	M12	16	699	359
	160	42	300	250	350	M16	18	729	389
50	100-112	28	215	180	250	M12	14	755	369
	132	38	265	230	300	M12	16	775	389
	160	42	300	250	350	M16	18	805	419
	180	48	300	250	350	M16	18	805	419
60	100-112	28	215	180	250	M12	14	841	409
	132	38	265	230	300	M12	16	861	429
	160	42	300	250	350	M16	18	891	459
	180	48	300	250	350	M16	18	891	459
	200	55	350	300	400	M16	20	891	459
70	132	38	265	230	300	M12	16	946	469
	160	42	300	250	350	M16	18	976	499
	180	48	300	250	350	M16	18	976	499
	200	55	350	300	400	M16	20	976	499
	225	60	400	350	450	M16	20	1006	529
80	132	38	265	230	300	M12	16	1054	519
	160	42	300	250	350	M16	18	1084	549
	180	48	300	250	350	M16	18	1084	549
	200	55	350	300	400	M16	20	1084	549
	225	60	400	350	450	M16	20	1114	579
	250	65	500	450	550	M16	20	1114	579
90	160	42	300	250	350	M16	18	1209	604
	180	48	300	250	350	M16	18	1209	604
	200	55	350	300	400	M16	20	1209	604
	225	60	400	350	450	M16	20	1239	634
	250	65	500	450	550	M16	20	1239	634
	280	75	500	450	550	M16	20	1239	634

All dimensions refer to IEC frame size motors

SHAFT ENDING

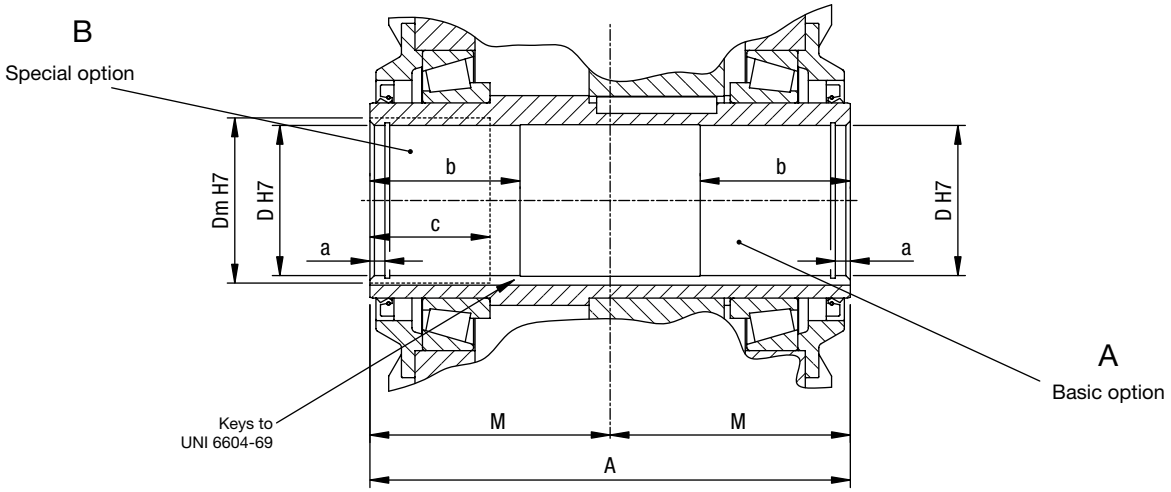


Tapped holes on top according to DIN 332
Keys according to UNI 6604-69

R-T	S-U a11	c	d	w	Key			f	f1
					b	h	l		
15 j6	30	M6	16		6	6	25	17,5	
18 j6	35	M6	16		6	6	30	20,5	
20 j6	40	M6	16		6	6	35	22,5	
22 j6	45	M6	16		6	6	40	24,5	
24 j6	50	M8	19		8	7	45	27	
28 j6	55	M8	19		8	7	50	31	
32 k6	65	M10	22		10	8	60	35	
35 k6	70	M10	22		10	8	60	38	
40 k6	80	M10	22		12	8	70	43	
45 k6	90	M10	22		14	9	80	48,5	
50 k6	100	M12	28		14	9	90	53,5	
55 m6	110	M12	28		16	10	100	59	
60 m6	120	M12	28		18	11	110	64	
65 m6	110	M16	36		18	11	100	69	69,4
70 m6	140	M16	36		20	12	125	74,5	
75 m6	150	M16	36		20	12	125	79,5	
80 m6	140	M16	36		22	14	125	85	
80 m6	160	M16	36		22	14	140	85	85,4
85 m6	170	M16	36		22	14	140	90	
90 m6	160	M16	36		25	14	140	95	95,4
90 m6	180	M16	36		25	14	160	95	
100 m6	180	M20	42		28	16	160	106	106,4
100 m6	200	M20	42		28	16	180	106	
110 m6	200	M20	42		28	16	180	116	116,4
110 m6	22	M20	42		28	16	200	116	
120 m6	210	M20	42		32	18	180	127	127,4
130 m6	260	M20	42		32	18	220	137	
140 m6	250	M24	50		36	20	220	148	148,4
140 m6	280	M24	50		36	20	250	148	
150 m6	300	M24	50		36	20	280	158	
160 m6	280	M24	50		40	22	250	169	169,4
160 m6	320	M24	50		40	22	280	169	
170 m6	300	M24	50		40	22	280	179	179,4
180 m6	360	M24	50		45	25	320	190	
190 m6	380	M30	64		45	25	360	200	
200 m6	350	M30	64		45	25	320	210	210,4
220 m6	390	M30	64		50	28	360	231	231,4
240 m6	410	2 off M30	64	150	56	32	360	252	
270 m6	470	2 off M30	64	150	63	32	400	282	
300 m6	500	2 off M30	64	180	70	36	450	314	
340 m6	550	2 off M30	64	180	80	40	500	355	
380 m6	630	2 off M30	64	210	90	45	550	397	

SHAFT ENDING

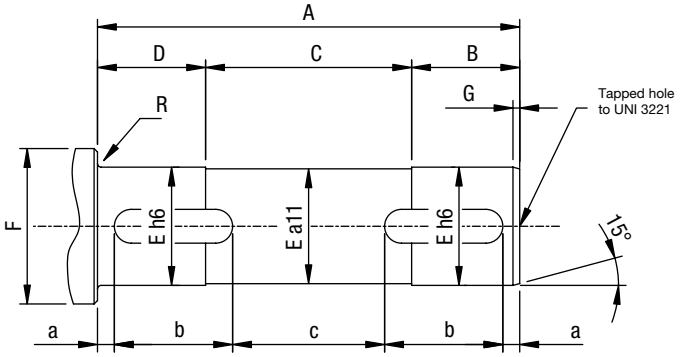
Hollow shaft with keyway



Size	10	20	30	40	50	60	70	80	90	100	110
A	230	270	290	320	340	380	450	500	560	620	750
D	65	80	90	100	110	120	140	160	170	200	220
Dm	70	90	100	110	120	130	155	175	185	215	235
M	115	135	145	160	170	190	225	250	280	310	375
a	7	8	9	10	11	12	14	16	18	20	22
b	65	80	90	100	110	120	140	160	170	200	220
c	56	70	80	90	100	110	125	140	160	180	200

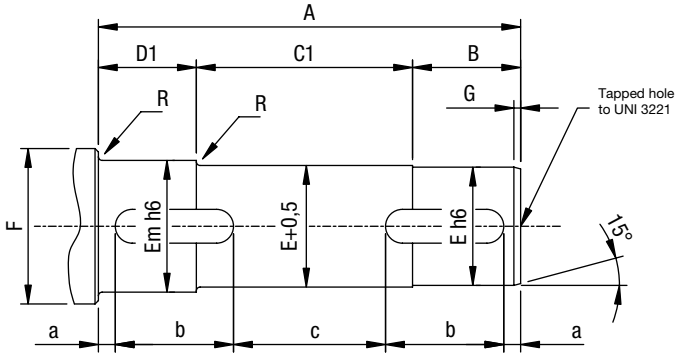
Driven machine shaft end

Option A



Keys dimensioned on E to UNI 6604

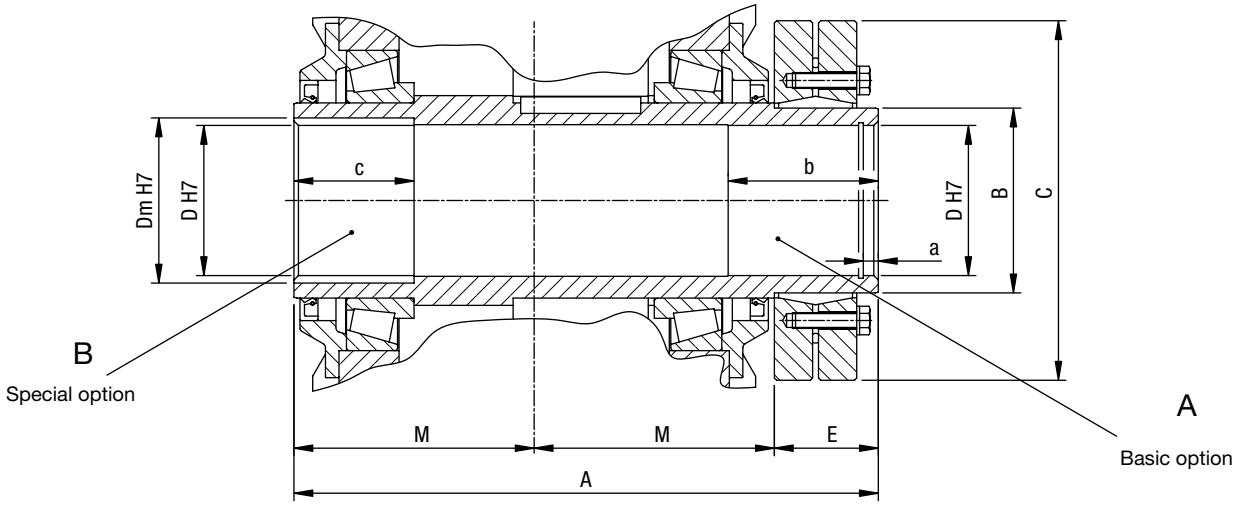
Option B



Size	10	20	30	40	50	60	70	80	90	100	110
A	212	250	265	295	310	350	415	460	515	570	695
B	50	65	70	80	85	95	110	125	130	155	170
C	97	105	105	115	115	135	165	175	215	215	305
C1	108	117	117	127	127	147	182	197	227	237	327
D	65	80	90	100	110	120	140	160	170	200	220
D1	54	68	78	88	98	108	123	138	158	178	198
E	65	80	90	100	110	120	140	160	170	200	220
Em	70	90	100	110	120	130	155	175	185	215	235
F	83	97	107	122	135	145	175	195	205	235	255
G	3	3,5	4	4,5	5	5,5	6	7	8	9	10
R	2	2,2	2,5	2,8	3	3,5	4	4,5	5	5,5	6
a	5	5	5	5	8	8	8	8	10	10	10
b	60	80	90	100	110	110	125	150	160	180	200
c	82	80	75	85	74	114	149	144	175	190	275

SHAFT ENDING

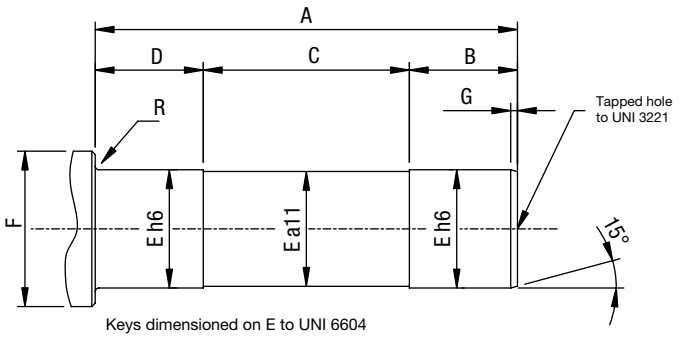
Hollow shaft with shrink disc



Size	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
A	278	333	366	396	429	476	564	614	694	770	914	1015	1150	1215	1365	1520
B	80	100	120	130	155	165	185	200	220	260	280	300	340	380	420	460
C	145	170	215	215	265	290	330	350	370	430	460	485	570	645	690	770
D	65	80	90	100	110	120	140	160	170	200	220	240	270	300	340	380
Dm	70	90	100	110	120	130	155	175	185	215	235	260	290	320	360	400
E	48	63	76	76	89	96	114	114	134	150	164	175	190	205	235	260
M	115	135	145	160	170	190	225	250	280	310	375	420	480	505	565	630
a	7	8	9	10	11	12	14	16	18	20	22	25	28	31	35	40
b	65	80	90	100	110	120	140	160	170	200	220	240	270	300	340	380
c	56	70	80	90	100	110	125	140	160	180	200	225	250	280	310	350

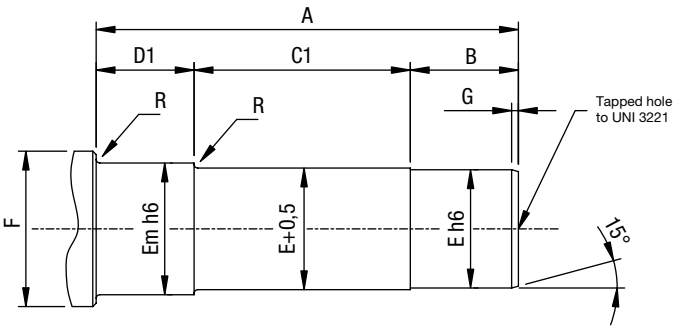
Driven machine shaft end

Option A



Keys dimensioned on E to UNI 6604

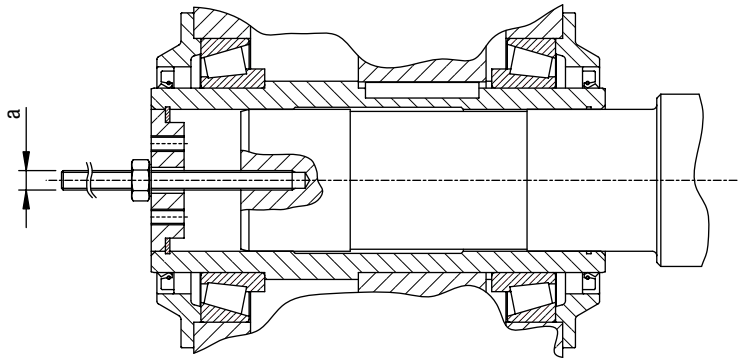
Option B



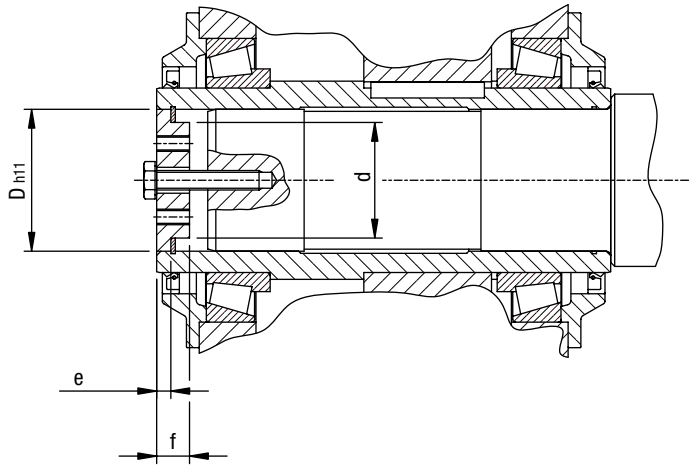
Size	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
A	260	313	341	371	399	446	529	574	649	720	859	955	1085	1140	1280	1425
B	50	65	70	80	85	95	110	125	130	155	170	185	210	230	260	290
C	145	168	181	191	204	231	279	289	349	365	469	530	605	610	680	755
C1	156	180	193	203	216	243	296	311	361	387	491	548	628	633	713	788
D	65	80	90	100	110	120	140	160	170	200	220	240	270	300	340	380
D1	54	68	78	88	98	108	123	138	158	178	198	222	247	277	307	347
E	65	80	90	100	110	120	140	160	170	200	220	240	270	300	340	380
Em	70	90	100	110	120	130	155	175	185	215	235	260	290	320	360	400
F	83	97	107	122	135	145	175	195	205	235	255	290	320	350	390	430
G	3	3,5	4	4,5	5	5,5	6	7	8	9	10	11	12	14	16	18
R	2	2,2	2,5	2,8	3	3,5	4	4,5	5	5,5	6	6,5	7	8	9	10

INSTALLATION

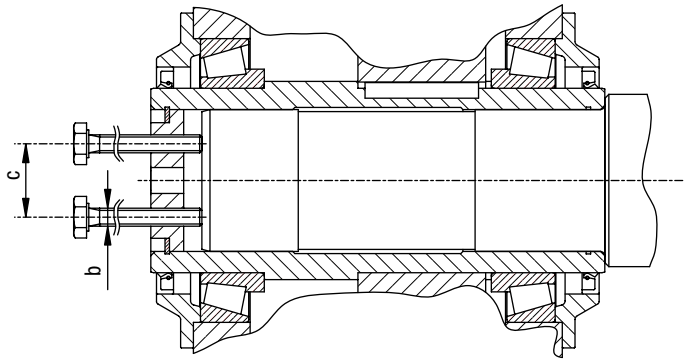
Mounting



Fixing



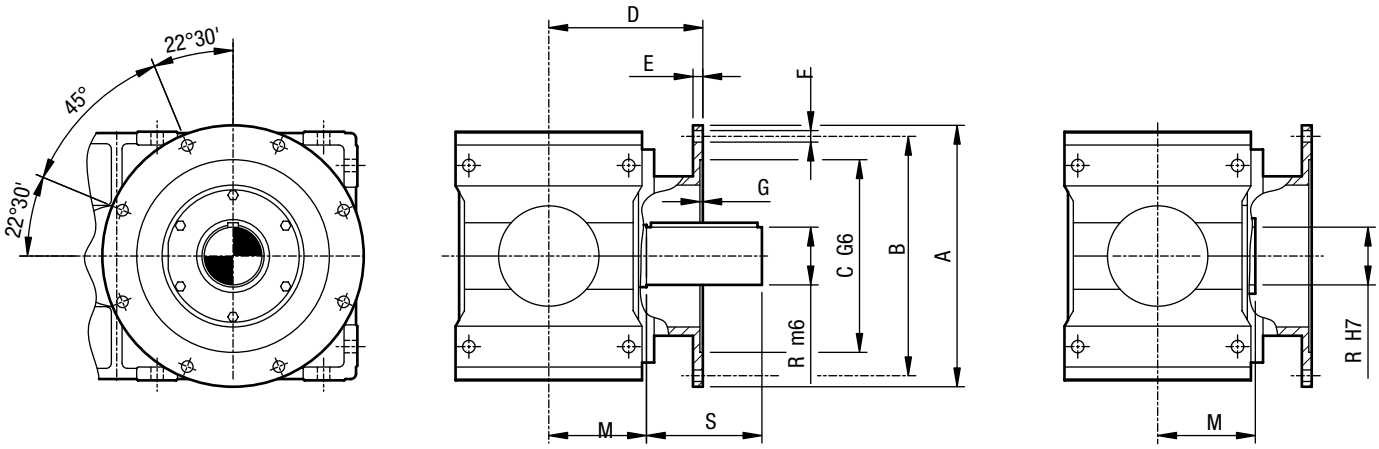
Removing



Size	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
a	M16	M16	M16	M20	M20	M20	M24	M24	M24	M30	M30	M30	M30	M36	M36	M36
b	M10	M12	M14	M14	M16	M16	M18	M18	M20	M20	M24	M24	M24	M24	M30	M30
c	37	48	55	60	65	75	95	105	115	140	155	165	190	210	235	260
Ø D	65	80	90	100	110	120	140	160	170	200	220	240	270	300	340	380
Ø d	52	66	74	82	90	100	120	136	148	172	190	205	230	255	290	320
e	7	8	9	10	11	12	14	16	18	20	22	25	28	32	35	40
f	16	18	20	22	25	28	32	36	40	45	50	55	60	70	80	90
Circlip	I 65	I 80	I 90	I 100	I 110	I 120	I 140	I 160	I 170	I 200	I 220	I 240	I 270	I 300	I 340	I 380

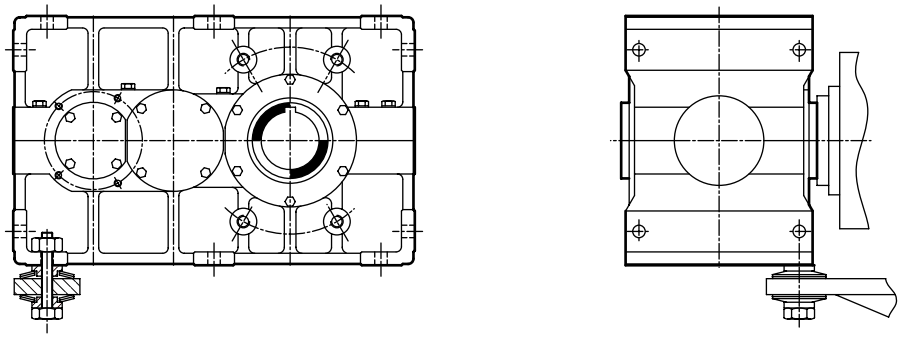
OUTPUT FLANGES

Flanged gearbox output casing normally allows direct assembly to the driven machine. Special designs, as well as B5 standard patterns (see dimensional data sheet), are available.



Size	Ø A	Ø B	Ø C	D	E	Ø F	G	M	Ø R	S
10	300	265	230	170	14	18	5	115	65	110
20	300	265	230	185	14	20	5	135	80	140
30	350	300	250	210	16	22	6	145	90	160
40	400	350	300	225	16	22	6	160	100	180
50	450	400	350	245	16	24	6	170	110	200
60	550	500	450	270	18	27	7	190	120	210
70	550	500	450	300	20	30	7	225	140	250
80	660	600	550	350	22	33	7	250	16	280
90	660	600	550	390	22	36	7	280	170	300
100	ON REQUEST									
110	ON REQUEST									

SHAFT-MOUNTED APPLICATIONS



All units can be supplied with elastic constraint, semi-flexible and rigid reaction arrangement.

OVERHUNG LOADS

Whenever transmission components, generating radial loads, are fitted on input and output shafts, it is necessary to check that the values of such loads are compatible with the gearbox capacity.
In the table below, maximum admissible overhung loads on high speed shaft Fr1 and on the low speed shaft Fr2 are shown, having as reference the load operating at the middle of the shaft ends (dimensions U and S of relevant dimensional tables).

a) if acting at 0.25 U or S from the gearbox side, multiply such values by 2.
b) if acting at 0.75 U or S from the gearbox side, multiply such values by 0.67.

When overhung load is less than 20% of admissible load shown in the table, no check is required.

Along with overhung load, a **thrust load** of 20% of overhung load is acceptable. For higher value, please refer to us.

Roughly overhung loads can be obtained by using the following formula :

$$\mathbf{Fr = k \cdot \frac{T}{D}}$$

T (Nm) : torque
D (mm) : pitch circle diameter of the driving or driven component
Where k :

1. 2000 for chain drive
2. 2100 for gear drive
3. 3000 for cog belt drive
4. 5000 for V-belt drive

MASS MOMENTS OF INERTIA

The mass moments of inertia J_1 refer to the high speed shaft of a standard gearbox without fan.
The mass moments of inertia J_2 refer to the low speed shaft and are given by the following formula :

$$\mathbf{J_2 = J_1 \cdot i_r^2}$$

i_r : actual ratio

HELICAL GEAR UNITS

Overhung loads Fr_1, Fr_2 - Mass Moment of Inertia J_1

			Size															
	i_N		10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	1.12	Fr_1 N								on request								
		Fr_2 N	14400	22000	28800	35500	42700	49400	69800	85700	112900	147800	156400					
		J_1 kgm²	0,0300	0,0530	0,0941	0,1667	0,2969	0,5232	0,8987	1,6120	2,8570	4,9945	8,8947					
	1.25	Fr_1 N								on request								
		Fr_2 N	13900	21400	27500	34600	42000	47800	68900	83200	109000	145800	153900					
		J_1 kgm²	0,0270	0,0477	0,0847	0,1502	0,2675	0,4714	0,8097	1,4523	2,5739	4,4996	8,0131					
	1.4	Fr_1 N								on request								
		Fr_2 N	13600	20900	26600	33500	41500	47400	67900	80300	106100	143300	150300					
		J_1 kgm²	0,0243	0,0430	0,0763	0,1353	0,2410	0,4246	0,7295	1,3084	2,3188	4,0537	7,2191					
	1.6	Fr_1 N								on request								
		Fr_2 N	13500	20800	25500	33100	40600	46000	66500	77100	104400	141300	149100					
		J_1 kgm²	0,0217	0,0383	0,0682	0,1208	0,2151	0,3792	0,6512	1,1682	2,0704	3,6194	6,4458					
	1.8	Fr_1 N								on request								
		Fr_2 N	12600	19600	24900	32600	39800	45100	65500	75300	102200	139500	147800					
		J_1 kgm²	0,0194	0,0343	0,0608	0,1078	0,1921	0,3385	0,5815	1,0430	1,8486	3,2316	5,7552					
	2	Fr_1 N	5200	6700	9200	13500	14500	22100	27900	34000	46300	55500	67900					
		Fr_2 N	12400	19200	24100	31700	39200	44100	64300	71500	100000	137300	146600					
		J_1 kgm²	0,0173	0,0306	0,0543	0,0963	0,1716	0,3023	0,5192	0,9313	1,6505	2,8853	5,1385					
	2.25	Fr_1 N	5500	7000	9500	14000	15100	23100	29000	35400	48200	57800	70300					
		Fr_2 N	11800	18200	23400	31000	38300	42900	63100	67700	98100	135200	145400					
		J_1 kgm²	0,0154	0,0273	0,0484	0,0858	0,1527	0,2691	0,4622	0,8292	1,4695	2,5690	4,5751					
	2.5	Fr_1 N	4400	5700	8100	11600	12600	19900	26800	31300	40100	46300	60500					
		Fr_2 N	10400	16100	21600	30100	36400	38800	56700	66000	87500	125400	144200					
		J_1 kgm²	0,0138	0,0245	0,0433	0,0770	0,1370	0,2413	0,4146	0,7437	1,3180	2,3041	4,1034					
	2.8	Fr_1 N	4600	5900	8300	12000	13100	20700	27800	32500	41600	48100	62800					
		Fr_2 N	10400	16100	21600	30100	36400	38800	56700	66000	87500	125400	144200					
		J_1 kgm²	0,0123	0,0217	0,0384	0,0681	0,1081	0,2136	0,3670	0,6582	1,1665	2,0393	3,6317					
	3.15	Fr_1 N	4800	6100	8600	12500	13600	21500	28800	33800	43200	49900	64000					
		Fr_2 N	10400	16100	21600	30100	36400	38800	56700	66000	87500	125400	144200					
		J_1 kgm²	0,0109	0,0194	0,0344	0,0610	0,1087	0,1914	0,3288	0,5898	1,0453	1,8274	3,2545					
	3.55	Fr_1 N	4900	6300	8900	13000	14100	22300	29800	35000	44800	51700	65000					
		Fr_2 N	10400	16100	21600	30100	36400	38800	56700	66000	87500	125400	144200					
		J_1 kgm²	0,0095	0,0169	0,0299	0,0530	0,0945	0,1665	0,2863	0,5129	0,9090	1,5891	2,8300					
	4	Fr_1 N	5100	6400	9100	13500	14600	23100	30800	36200	46400	53500	66000					
		Fr_2 N	8800	14200	19400	24500	35000	37600	53400	53300	79400	118300	125800					
		J_1 kgm²	0,0082	0,0146	0,0260	0,0460	0,0819	0,1443	0,2479	0,4445	0,7878	1,3772	2,4527					
	4.5	Fr_1 N	5200	6700	9500	13800	15100	23800	31900	37400	48000	55300	66500					
		Fr_2 N	10400	16100	21800	27200	30400	33400	48100	59800	82800	110300	123400					
		J_1 kgm²	0,0072	0,0127	0,0225	0,0398	0,0708	0,1248	0,2145	0,3846	0,6817	1,1918	2,1224					
	5	Fr_1 N	5400	6900	9800	14300	15600	24600	32900	38700	49600	57100	68200					
		Fr_2 N	11700	18000	24500	30000	35000	38200	55700	67300	93000	121200	128300					
		J_1 kgm²	0,0062	0,0110	0,0195	0,0345	0,0614	0,1082	0,1858	0,3334	0,5908	1,0328	1,8394					
	5.6	Fr_1 N	5600	7100	10000	14800	16100	25400	33900	39900	51200	58900	69400					
		Fr_2 N	13000	20000	26700	32300	38100	42900	61300	74800	101100	130300	142900					
		J_1 kgm²	0,0054	0,0096	0,0170	0,0300	0,0536	0,0944	0,1621	0,2906	0,5151	0,9005	1,6037					
PB	6.3	Fr_1 N	4400	5600	6800	9100	9900	11500	18500	20600	29300	34400	43100	53800	61200	63900	67000	71100
		Fr_2 N	10100	15700	22800	23300	28400	36900	48700	59800	82200	108200	123400	128200	142200	154600	163300	183300
		J_1 kgm²	0,0118	0,0211	0,0376	0,0665	0,1187	0,2135	0,3738	0,6661	1,1922	2,1014	3,7540	6,7507	11,819	21,063	37,693	66,430
	7.1	Fr_1 N	4500	5800	7000	9300	10300	12000	18800	21500	30200	35500	44600	55500	63100	65900	69100	73200
		Fr_2 N	12700	19700	22800	29200	32800	43000	57100	67500	97100	128400	147700	153400	170100	185000	195400	219300
		J_1 kgm²	0,0103	0,0184	0,0330	0,0582	0,1040	0,1870	0,3274	0,5836	1,0444	1,8407	3,2884	5,9133	10,353	18,450	33,018	58,190
	8	Fr_1 N	4600	6000	7100	9500	10700	12500	19200	22300	31200	36600	46100	57100	65000	67900	71100	75400
		Fr_2 N	12700	19700	22500	29200	31000	40200	52900	65300	90900	120700	140000	145000	160800	174900	184700	207300
		J_1 kgm²	0,0091	0,0161	0,0289	0,0510	0,0911	0,1638	0,2868	0,5111	0,9149	1,6125	2,8805	5,1799	9,0692	16,162	28,923	50,973
	9	Fr_1 N	4700	6200	7300	9700	11100	13000	19500	23200	32100	37700	47300	58800	66900	69800	73200	77600
		Fr_2 N	12100	19200	22500	28200	30400	37400	47700	58200	84800	114400	130700	135100	149800	162900	172000	193200
		J_1 kgm²	0,0079	0,0140	0,0250	0,0443	0,0791	0,1421	0,2488	0,4435	0,7936	1,3989	2,4990	4,4940	7,8682	14,022	25,092	44,223
	10	Fr_1 N	4800	6300	7200	9900	11500	13500	19900	24100	33100	38800	49100	60500	68800	71800	75300	79800
		Fr_2 N	12100	19200	22500	28200	30400	36600	45900	56700	84800	114400	123500	128100	136500	148500	156800	176000
		J_1 kgm²	0,0068	0,0120	0,0214	0,0379	0,0677	0,1216	0,2129	0,3794	0,6790	1,1967	2,1378	3,8443	6,7307	11,995	21,465	37,830
	11.2	Fr_1 N	4900	6581	7700	10100	11900	14000	20200	24900	34100	39900	50600	62100	70600	73800	77300	82000
		Fr_2 N	12100	19200	21900	28200	30400	36600	45900	56700	84800	114400	123500	125100	127100	138200	145900	163800
		J_1 kgm²	0,0058	0,0102	0,0182	0,0322	0,0577	0,1035	0,1812	0,3229	0,5779	1,0186	1,8196	3,2720	5,7288	10,209	18,270	32,198
	12.5	Fr_1 N	4200	5900	7200	8000	9800	11800	16200	20600	28800	36400	44200	49000	53200	61500	61700	70900
		Fr_2 N	11500	18500	21900	27200	29800	35700	44700	54600	83500	110000	120000	121200	123300	134000	141600	159000
		J_1 kgm²	0,0048	0,0085	0,0152	0,0269	0,0480	0,0864	0,1512	0,2696	0,4824	0,8502	1,5189	2,7315	4,7824	8,5226	15,251	26,879
	14	Fr_1 N	4300	6000	7300	8300	10100	12200	16500	21300	29600	37400	45500	50300	54600	63100	63300	72700
		Fr_2 N	11500	18500	21900	27200	29800	35700	44700	54600	83500	110000	120800	121200	123300	134100	141600	159000
		J_1 kgm²	0,0041	0,0073	0,0130	0,0234	0,0410	0,0739	0,1294	0,2305	0,4126	0,7272	1,2992	2,3363	4,0904	7,2895	13,045	22,990
	16	Fr_1 N	4400	6200	7500	8500	10400	12200	16700	22000	30400	38400	46800	51600	55900	64700	64900	74500
		Fr_2 N	11500	18500	24300	27200	29800	35700	44600	54600	83500	110000	120800	121200	123300	134100	141600	159000
		J_1 kgm²	0,0035	0,0063	0,0113	0,0199	0,0356	0,0639	0,1119	0,1995	0,3571	0,6293	1,1243	2,0217	3,5397	6,3080	11,288	19,895
	18	Fr_1 N	4500	6400	7600	8700	10800	13000	17000	22700	31200	39300	48100	52900	57300	66200	66500	76400
		Fr_2 N	12800	20500	24300	31000	33200	39400	48900	59100	93100	123900	135700	136200	139100	151200	159700	179300
		J_1 kgm²	0,0032	0,0055	0,0099	0,0172	0,0312	0,0561	0,0982	0,1750	0,3132	0,5521	0,9863	1,7735	3,1051	5,5336	9,903	17,452
	20	Fr_1 N	4500	6400	7800	9000	11100	13400	17300	23300	32000	40300	49300	54100	58700	67800	68100	78200
		Fr_2 N	12800	20500	23200	31000	33200	39400	48900	59100	93100	123900	135700	136200	139100	151200	159700	179300
		J_1 kgm²	0,0028	0,0049	0,0088	0,0155	0,0277	0,0499	0,0873	0,1555	0,2784	0,4906	0,8764	1,5759	2,7592	4,9171	8,7993	15,508
	22.5	Fr_1 N			8000			13800	17700	24000	32700	41400	50700	55500	60200	69600		80200
		Fr_2 N			20700			38200	47300	53500	92000	117800	131200	132100	133000	144600		171500
		J_1 kgm²			0,0076			0,0430	0,0753	0,1341	0,2401	0,4232	0,7560	1,3594	2,3801	4,2415		13,377
	25	Fr_1 N											51300					
		Fr_2 N											132600					
		J_1 kgm²											0,6853					

HELICAL GEAR UNITS

Overhung loads Fr_1, Fr_2 - Mass Moment of Inertia J_1

PC

i_N			Size 10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
22.5	Fr_1	N	2000	2700		6100	8300										81500	
	Fr_2	N	13000	18200		42200	52800										382500	
	J_1	kgm²	0,0007	0,0017		0,0055	0,0103										3,0326	
25	Fr_1	N	2000	2700	5400	6100	8300	9700	12600	15200	17500	27500		40800	47200	58300	81600	103600
	Fr_2	N	13000	18200	23600	42200	52800	57800	70500	85500	93500	166600		229000	270000	299000	382500	499400
	J_1	kgm²	0,0007	0,0016	0,0026	0,0053	0,0097	0,0156	0,0263	0,0477	0,0910	0,1527		0,4993	0,9019	1,6085	2,8761	5,0752
28	Fr_1	N	2100	2800	5500	6200	8400	9800	12600	15300	17600	27700	33700	40800	47300	58400	81800	103800
	Fr_2	N	13000	18200	23600	42200	52800	57800	70500	85600	93500	166600	206800	229000	270000	299900	382500	499400
	J_1	kgm²	0,0007	0,0015	0,0025	0,0050	0,0086	0,0150	0,0257	0,0473	0,0860	0,1517	0,2704	0,4815	0,8463	1,5094	2,6989	4,7624
31.5	Fr_1	N	2100	2800	5500	6200	8400	9800	12600	15400	17800	27900	33800	40900	47400	58500	81900	104000
	Fr_2	N	13000	18200	23600	42200	52800	57800	70500	85600	93500	166600	206800	229000	270000	299900	382500	499400
	J_1	kgm²	0,0007	0,0014	0,0024	0,0046	0,0081	0,0142	0,0245	0,0447	0,0809	0,1428	0,2547	0,4534	0,7970	1,4213	2,5415	4,4847
35.5	Fr_1	N	2100	2800	5500	6200	8400	9900	12700	15400	17900	28000	33900	41000	47500	58600	82000	104100
	Fr_2	N	12400	17700	22500	40000	50600	55600	67200	82200	88100	161100	200200	223600	259200	294600	371800	488500
	J_1	kgm²	0,0007	0,0013	0,0024	0,0043	0,0076	0,0134	0,0237	0,0422	0,0761	0,1345	0,2399	0,4269	0,7505	1,3384	2,3933	4,2231
40	Fr_1	N	2100	2800	5500	6200	8400	9900	12700	15500	17900	28000	34000	41000	47600	58700	82100	104300
	Fr_2	N	12400	17700	22500	40000	50600	55600	67200	82200	88100	161100	200200	223600	259200	294600	371800	488500
	J_1	kgm²	0,0007	0,0012	0,0023	0,0040	0,0071	0,0127	0,0223	0,0399	0,0716	0,1266	0,2260	0,4020	0,7067	1,2604	2,2536	3,9768
45	Fr_1	N	2200	2900	5600	6300	8500	9900	12700	15500	18000	28100	34100	41200	47700	58900	82400	104600
	Fr_2	N	12400	17700	22500	40000	50600	55600	67200	82200	88100	161100	200200	223600	259200	294600	371800	488500
	J_1	kgm²	0,0006	0,0012	0,0022	0,0038	0,0068	0,0119	0,0210	0,0377	0,0674	0,1192	0,2129	0,3786	0,6655	1,1869	2,1223	3,7451
50	Fr_1	N	2200	2900	5600	6300	8500	10000	12800	15600	18000	28200	34200	41300	47800	59000	82500	104800
	Fr_2	N	11900	17100	21300	37700	48400	53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0006	0,0011	0,0020	0,0036	0,0063	0,0113	0,0198	0,0354	0,0635	0,1123	0,2005	0,3566	0,6267	1,1176	1,9984	3,5264
56	Fr_1	N	2200	2900	5600	6300	8500	10000	12800	15600	18100	28300	34300	41400	47900	59100	82600	104900
	Fr_2	N	11900	17100	21300	37700	48400	53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0005	0,0010	0,0019	0,0034	0,0059	0,0106	0,0187	0,0334	0,0597	0,1056	0,1885	0,3353	0,5894	1,0512	1,8796	3,3167
63	Fr_1	N	2200	2900	5600	6300	8500	10000	12800	15700	18200	28400	34400	41500	48000	59100	82800	105100
	Fr_2	N	11900	17100	21300	37700	48400	53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0005	0,0010	0,0018	0,0032	0,0056	0,0101	0,0177	0,0315	0,0564	0,0998	0,1783	0,3170	0,5570	0,9933	1,7761	3,1341
71	Fr_1	N	2300	3000	5600	6300	8600	10100	12900	15700	18200	28500	34500	41600	48200	59300	83000	105400
	Fr_2	N	11900	17100	21300	37700	48400	53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0005	0,0009	0,0017	0,0030	0,0054	0,0095	0,0166	0,0298	0,0533	0,0943	0,1684	0,2995	0,5265	0,9389	1,6789	2,9626
80	Fr_1	N	2300	3000	5600	6300	8600	10100	12900	15800	18300	28600	34500	41700	48300	59400	83200	105600
	Fr_2	N	11900	17100	21300	37700	48400	53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0004	0,0009	0,0016	0,0029	0,0051	0,0091	0,0160	0,0285	0,0511	0,0904	0,1613	0,2869	0,5043	0,8993	1,6081	2,8376
90	Fr_1	N	2300	3000	5600	6300	8600	10200	13000	15800	18400	28700	34600	41800	48400	59500	83300	105700
	Fr_2	N	11900	17100	21300	37700	48400	53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0004	0,0008	0,0016	0,0027	0,0049	0,0087	0,0153	0,0275	0,0492	0,0871	0,1555	0,2766	0,4861	0,8670	1,5503	2,7356
100	Fr_1	N	2300	3000	5600	6300		10200	13000	15900	18400	28700	34700	41900	48500	59400	83400	105900
	Fr_2	N	11900	17100	21300	37700		53400	64900	79900	85000	157700	195800	218100	253800	291400	371800	477700
	J_1	kgm²	0,0004	0,0008	0,0015	0,0027		0,0085	0,0150	0,0267	0,0478	0,0847	0,1512	0,2689	0,4725	0,8426	1,5067	2,6587

PD

100	Fr_1	N					8800											
	Fr_2	N					62700											
	J_1	kgm²					0,0028											
112	Fr_1	N	1900	3200	5700	6400	8800	9800	12400	15600	17500	23800	28400	31600	43600	56400	73700	92200
	Fr_2	N	18600	27500	39800	48300	62700	76700	94400	108500	164600	197900	224500	243900	266700	323300	370100	390800
	J_1	kgm²	0,0003	0,0005	0,0009	0,0016	0,0028	0,0049	0,0086	0,0152	0,0258	0,0488	0,0862	0,1566	0,2699	0,4856	0,8777	1,5630
115	Fr_1	N	1900	3200	5700	6400	8800	9800	12400	15600	17500	23800	28400	31600	43600	56400	73700	92200
	Fr_2	N	18600	27500	39800	48300	62700	76700	94400	108500	164600	197900	224500	243900	266700	323300	370100	390800
	J_1	kgm²	0,0003	0,0005	0,0009	0,0016	0,0028	0,0049	0,0086	0,0152	0,0258	0,0488	0,0862	0,1566	0,2699	0,4856	0,8777	1,5630
140	Fr_1	N	1900	3200	5700	6400	8800	9800	12400	15600	17500	23800	28400	31600	43600	56400	73700	92200
	Fr_2	N	18600	27500	39800	48300	62700	76700	94400	108500	164600	197900	224500	243900	266700	323300	370100	390800
	J_1	kgm²	0,0003	0,0005	0,0009	0,0016	0,0028	0,0049	0,0086	0,0152	0,0258	0,0488	0,0862	0,1566	0,2699	0,4856	0,8777	1,5630
160	Fr_1	N	1900	3200	5700	6400	8800	9800	12400	15600	17500	23800	28400	31600	43600	56400	73700	92200
	Fr_2	N	18600	27500	39800	48300	62700	76700	94400	108500	164600	197900	224500	243900	266700	323300	370100	390800
	J_1	kgm²	0,0003	0,0005	0,0009	0,0016	0,0028	0,0049	0,0086	0,0152	0,0258	0,0488	0,0862	0,1566	0,2699	0,4856	0,8777	1,5630
180	Fr_1	N	2000	3300	5800	6500	8900	10000	12500	15800	17700	24200	28800	32000	44200	57200	74800	93500
	Fr_2	N	18800	27800	40200	48900	63400	77600	95400	109800	166500	200200	227100	246700	269800	327100	374400	395400
	J_1	kgm²	0,0003	0,0005	0,0009	0,0016	0,0028	0,0049	0,0086	0,0152	0,0258	0,0488	0,0862	0,1566	0,2699	0,4856	0,8777	1,5630
200	Fr_1	N	2000	3300	5800	6500	8900	10000	12500	15800	17700	24200	28800	32000	44200	57200	74800	93500
	Fr_2	N	18800	27800	40200	48900	63400	77600	95400	109800	166500	200200	227100	246700	269800	327100	374400	395400
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
225	Fr_1	N	2000	3300	5800	6500	8900	10000	12500	15800	17700	24200	28800	32000	44200	57200	74800	93500
	Fr_2	N	18800	27800	40200	48900	63400	77600	95400	109800	166500	200200	227100	246700	269800	327100	374400	395400
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
250	Fr_1	N	2000	3300	5800	6500	8900	10000	12500	15800	17700	24200	28800	32000	44200	57200	74800	93500
	Fr_2	N	18800	27800	40200	48900	63400	77600	95400	109800	166500	200200	227100	246700	269800	327100	374400	395400
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
280	Fr_1	N	2100	3400	5900	6600	9000	10200	12700	16000	18000	24500	29100	32400	44800	58000	75800	94700
	Fr_2	N	19000	28100	40700	49500	64100	78500	96500	111100	168400	202500	229700	249600	272900	330800	378700	399900
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
315	Fr_1	N	2100	3400	5900	6600	9000	10200	12700	16000	18000	24500	29100	32400	44800	58000	75800	94700
	Fr_2	N	19000	28100	40700	49500	64100	78500	96500	111100	168400	202500	229700	249600	272900	330800	378700	399900
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
355	Fr_1	N	2100	3400	5900	6600	9000	10200	12700	16000	18000	24500	29100	32400	44800	58000	75800	94700
	Fr_2	N	19000	28100	40700	49500	64100	78500	96500	111100	168400	202500	229700	249600	272900	330800	378700	399900
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
400	Fr_1	N	2100	3400	5900	6600	9000	10200	12700	16000	18000	24500	29100	32400	44800	58000	75800	94700
	Fr_2	N	19000	28100	40700	49500	64100	78500	96500	111100	168400	202500	229700	249600	272900	330800	378700	399900
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
450	Fr_1	N	2200	3500	6000	6700	9100	10300	12900	16300	18200	24800	29500	32900	45400	58800	76800	96000
	Fr_2	N	19200	28400	41200	5000	64900	79400	97600	112300	170300	204800	232300	252400	276000	334600	383000	404500
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333
500	Fr_1	N	2200	3500	6000	6700	9100	10300	12900	16300	18200	24800	29500	32900	45400	58800	76800	96000
	Fr_2	N	19200	28400	41200	5000	64900	79400	97600	112300	170300	204800	232300	252400	276000	334600	383000	404500
	J_1	kgm²	0,0002	0,0004	0,0008	0,0014	0,0025	0,0042	0,0078	0,0141	0,0238	0,0466	0,0835	0,1522	0,2601	0,4763	0,8599	1,4333

BEVEL-HELICAL UNITS

Overhung loads Fr_1, Fr_2 - Mass Moment of Inertia J_1

RHB RVB

i_N			Size 10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
5	Fr_1	N	4100	5300	7800	9200	11500	12400	14300	22400	33100	42500	52000					
	Fr_2	N	14200	18600	24800	30600	37000	44700	60800	77800	102700	131000	144000					
	J_1	kgm²	0,0036	0,0062	0,0111	0,0199	0,0357	0,0634	0,1097	0,1990	0,3663	0,6611	1,1745					
5.6	Fr_1	N	4300	5500	8200	9700	12100	13000	15000	23600	34900	44800	54800					
	Fr_2	N	13300	17400	23500	29200	35300	42700	58200	74700	100300	128400	141000					
	J_1	kgm²	0,0035	0,0059	0,0106	0,0188	0,0339	0,0602	0,1042	0,1890	0,3480	0,6279	1,1154					
6.3	Fr_1	N	4500	5800	8600	10200	12800	13700	15800	24800	36600	47000	57500					
	Fr_2	N	12500	16800	22800	28200	33000	40200	56600	72600	97300	124700	137000					
	J_1	kgm²	0,0033	0,0056	0,0100	0,0179	0,0322	0,0572	0,0990	0,1795	0,3305	0,5962	1,0592					
7.1	Fr_1	N	4800	6100	9000	10700	13400	14300	16500	26000	38400	49300	60200					
	Fr_2	N	14100	18500	25700	31800	36600	48100	65400	83900	93200	142000	156100					
	J_1	kgm²	0,0031	0,0054	0,0096	0,0173	0,0311	0,0553	0,0956	0,1733	0,3192	0,5662	1,0059					
8	Fr_1	N	5000	6400	9400	11200	14000	15000	17300	27100	40100	51500	63000					
	Fr_2	N	10900	14200	32500	26500	34600	42200	60000	73300	107800	126800	139300					
	J_1	kgm²	0,0030	0,0051	0,0092	0,0163	0,0294	0,0522	0,0903	0,1638	0,3015	0,5467	0,9713					
9	Fr_1	N	5200	6700	9900	11700	14600	15600	18100	28300	41900	53800	65700					
	Fr_2	N	11100	14500	21600	22300	33200	40100	58100	71400	95400	131400	144300					
	J_1	kgm²	0,0029	0,0049	0,0087	0,0155	0,0278	0,0495	0,0856	0,1552	0,2859	0,5167	0,9179					
10	Fr_1	N	5400	6900	10300	12200	15200	16300	18800	29500	43600	56000	68500					
	Fr_2	N	11300	13200	20800	25100	30000	38800	56600	69900	86400	124900	137300					
	J_1	kgm²	0,0027	0,0046	0,0083	0,0148	0,0266	0,0473	0,0819	0,1486	0,2735	0,4897	0,8700					
11.2	Fr_1	N	5600	7200	10700	12700	15800	16900	19600	30700	45300	58200	71200					
	Fr_2	N	13000	15400	21900	28100	30900	34900	56400	69100	86100	123600	135800					
	J_1	kgm²	0,0026	0,0045	0,0080	0,0143	0,0258	0,0459	0,0793	0,1438	0,2648	0,4686	0,8325					
12.5	Fr_1	N	5400	6600	9900	11800	14900	16100	17400	27900	41900	55400	67200					
	Fr_2	N	16400	21400	31000	38200	44800	48400	69900	86200	84600	155300	170600					
	J_1	kgm²	0,0025	0,0042	0,0076	0,0135	0,0243	0,0431	0,0746	0,1352	0,2490	0,4536	0,8059					
14	Fr_1	N	5600	6800	10200	12300	15500	16700	18100	28900	43400	56400	69700					
	Fr_2	N	17900	23500	32900	40400	46000	53400	75500	96300	119300	166400	182800					
	J_1	kgm²	0,0023	0,0041	0,0074	0,0132	0,0237	0,0422	0,0730	0,1324	0,2438	0,4266	0,7578					
16	Fr_1	N	6200	7500	11300	13600	17100	18500	20000	32000	48100	62500	77200					
	Fr_2	N	16200	21400	28900	37300	44800	49300	65600	84400	126500	161000	176900					
	J_1	kgm²	0,0023	0,0039	0,0071	0,0127	0,0228	0,0407	0,0704	0,1276	0,2350	0,4176	0,7419					
18	Fr_1	N	6300	7700	11500	13800	17400	18800	20300	32500	48800	63500	78400					
	Fr_2	N	15600	20600	30300	36300	43500	45600	67700	82900	124300	163600	179700					
	J_1	kgm²	0,0022	0,0038	0,0070	0,0124	0,0214	0,0397	0,0688	0,1248	0,2298	0,4026	0,7152					

RHC RVC

20	Fr_1	N	2000	3600	6900	7400	9900	11700	14600	17100	19600	28800	33200	37600	42600	48200		
	Fr_2	N	11300	13700	21200	27500	29900	35700	43100	54000	79500	114400	129600	147000	171800	199900		
	J_1	kgm²	0,0025	0,0044	0,0073	0,0131	0,0238	0,0426	0,0744	0,1326	0,2375	0,4187	0,7474	1,3437	2,3522	4,1911		
22.5	Fr_1	N	2000	3600	6900	7400	9900	11800	14700	17200	19900	29000	33400	37800	42800	48500		
	Fr_2	N	11300	13700	21200	27500	29900	35700	43100	54000	79500	114400	129600	147000	171800	199900		
	J_1	kgm²	0,0024	0,0040	0,0069	0,0123	0,0222	0,0397	0,0694	0,1238	0,2216	0,3907	0,6976	1,2542	2,1956	3,9119		
25	Fr_1	N	2000	3600	6900	7400	10000	11900	14800	17400	20100	29200	33600	38000	43100	48800		
	Fr_2	N	10100	12200	20300	26000	28200	33700	40600	50900	75000	108000	122300	138700	162100	188600		
	J_1	kgm²	0,0021	0,0037	0,0064	0,0116	0,0207	0,0371	0,0648	0,1155	0,2068	0,3646	0,6511	1,1705	2,0491	3,6511		
28	Fr_1	N	2200	3700	7000	7500	10000	12100	14900	17600	20300	29400	33800	38200	43300	49000		
	Fr_2	N	10100	12200	20300	26000	28200	33700	40600	50900	75000	108000	122300	138700	162100	188600		
	J_1	kgm²	0,0019	0,0034	0,0061	0,0108	0,0193	0,0346	0,0605	0,1078	0,1930	0,3402	0,6077	1,0926	1,9127	3,4079		
31.5	Fr_1	N	2200	3700	7000	7500	10100	12200	15000	17800	20400	29700	34100	38500	43500	49300		
	Fr_2	N	10100	12200	20300	26000	28200	33600	40600	50900	75000	108000	122300	138700	162100	188600		
	J_1	kgm²	0,0018	0,0032	0,0057	0,0101	0,0179	0,0323	0,0565	0,1006	0,1801	0,3175	0,5671	1,0198	1,7853	3,1809		
35.5	Fr_1	N	2200	3700	7000	7500	10100	12300	15100	17900	20600	29700	34300	38700	43800	49600		
	Fr_2	N	9500	11700	19800	24500	26600	31800	38400	48100	70900	102000	115500	131000	153100	178100		
	J_1	kgm²	0,0017	0,0030	0,0053	0,0094	0,0167	0,0301	0,0530	0,0939	0,1681	0,2963	0,5293	0,9518	1,6662	2,9688		
40	Fr_1	N	2200	3700	7000	7500	10200	12400	15200	18100	20900	30100	34500	38900	44000	49900		
	Fr_2	N	9500	11700	19800	24500	26600	31800	38400	48100	70900	102000	115500	131000	153100	178100		
	J_1	kgm²	0,0016	0,0028	0,0049	0,0088	0,0156	0,0281	0,0492	0,0877	0,1569	0,2766	0,4941	0,8884	1,5551	2,7709		
45	Fr_1	N	2300	3800	7100	7700	10200	12500	15400	18200	21100	30300	34700	39100	44300	50200		
	Fr_2	N	9500	11700	19800	24500	26600	31800	38400	48100	70900	102000	115500	131000	153100	178100		
	J_1	kgm²	0,0015	0,0026	0,0047	0,0081	0,0146	0,0262	0,0460	0,0818	0,1465	0,2581	0,4611	0,8292	1,4515	2,5862		
50	Fr_1	N	1900	3100	5800	6400	8400	10300	12600	15200	17600	25300	28600	32200	36400	41300		
	Fr_2	N	7900	11300	19200	23600	25600	30700	37000	46300	68300	98300	111300	126300	147600	171700		
	J_1	kgm²	0,0014	0,0025	0,0043	0,0076	0,0136	0,0244	0,0428	0,0763	0,1365	0,2406	0,4298	0,7729	1,3530	2,4108		
56	Fr_1	N	1900	3100	5800	6400	8400	10400	12700	15300	17800	25500	28800	32400	36600	41500		
	Fr_2	N	7900	11300	19200	23600	25600	30700	37000	46300	68300	98300	111300	126300	147600	171700		
	J_1	kgm²	0,0012	0,0023	0,0040	0,0071	0,0126	0,0227	0,0397	0,0707	0,1266	0,2231	0,3986	0,7167	1,2547	2,2355		
63	Fr_1	N	1900	3100	5800	6400	8500	10500	12800	15500	18000	25700	28900	32500	36800	41700		
	Fr_2	N	7900	11300	19200	23600	25600	30700	37000	46300	68300	98300	111300	126300	147600	171500		
	J_1	kgm²	0,0011	0,0021	0,0037	0,0065	0,0116	0,0209	0,0366	0,0652	0,1167	0,2056	0,3673	0,6605	1,1562	2,0601		
71	Fr_1	N	2000	3200	5900	6400	8500	10600	12900	15600	18200	25900	29100	32700	37000	42000		
	Fr_2	N	7400	10800	18500	22600	24600	29400	35400	44400	65400	94100	106600	120900	141300	164400		
	J_1	kgm²	0,0011	0,0019	0,0033	0,0060	0,0106	0,0191	0,0334	0,0596	0,1067	0,1881	0,3360	0,6043	1,0579	1,8849		
80	Fr_1	N		3200		6400	8600	10700	13000	15800	18300	26000	29300			42200		
	Fr_2	N		10800		22600	24600	29400	35400	44400	65400	94100	106600			164400		
	J_1	kgm²		0,0018		0,0057	0,0134	0,0182	0,0319	0,0568	0,1018	0,1794	0,3205			1,7973		

BEVEL-HELICAL UNITS

Overhung loads Fr_1, Fr_2 - Mass Moment of Inertia J_1

RHD
RVD

			Size															
i_N			10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
80	Fr_1	N	1900		3200									27700	30200			
	Fr_2	N	4100		9600									68800	76500			
	J_1	kgm²	0,0001		0,0007									0,0988	0,1703			
90	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
100	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
112	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
125	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
140	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
160	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
180	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
200	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
225	Fr_1	N	1900	2400	3200	3900	5300	6400	11900	14900	17700	19300	23100	27700	30200	33600	34400	40500
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
250	Fr_1	N	1600	2200	2900	3600	4500	5600	10900	13400	16100	17700	19800	24200	27200	30500	31500	34700
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
280	Fr_1	N	1600	2200	2900	3600	4500	5600	10900	13400	16100	17700	19800	24200	27200	30500	31500	34700
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
315	Fr_1	N	1600	2200	2900	3600	4500	5600	10900	13400	16100	17700	19800	24200	27200	30500	31500	34700
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
355	Fr_1	N	1600	2200	2900	3600	4500	5600	10900	13400	16100	17700	19800	24200	27200	30500	31500	34700
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018
400	Fr_1	N	1600	2200	2900	3600	4500	5600	10900	13400	16100	17700	19800	24200	27200	30500	31500	34700
	Fr_2	N	4100	5200	9600	14400	20000	25700	31900	37600	46100	50400	60700	68800	76500	81800	93000	100000
	J_1	kgm²	0,0001	0,0005	0,0007	0,0009	0,0018	0,0029	0,0051	0,0096	0,0177	0,0311	0,0501	0,0988	0,1703	0,3111	0,5629	1,0018

WEIGHTS (kg)

Helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	72	120	164	237	324	450	616	915	1250	1490						
PB	81	138	166	250	390	540	753	955	1465	2040	2810	3750				
PC	96	165	228	309	438	591	814	1190	1520	1810	3280	4450	6100	8900		
PD	116	177	241	327	461	636	865	1298	1620	2400	3410	4690	6550	9650		

Bevel-helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	91	126	176	248	362	494	688	910	1320	1870						
RC	106	126	206	294	360	569	785	1110	1510	2180	3080	4210				
RD	110	159	225	312	436	618	873	1205	1626	2315	3350	4490	6350	8900		

LUBRICANT QUANTITIES (liters)

If not stated otherwise, all units are despatched without oil (a warning label is attached). The approximate quantity of oil required for horizontal mounting is given in the Table below. For mounting positions different from pos.1 (page 32) unit should be filled to the level marked on the level plug or on the dipstick. Do not overfill the unit as this can cause leakage and overheating.

Helical units

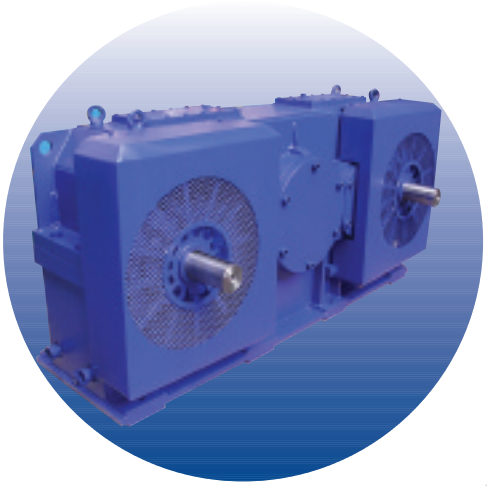
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	2,8	3,9	5,4	7,3	9,8	13,8	19	26	37	52	72					
PB	3,6	5	6,5	10	13	18	28	35	49	69	96	135	189	235	289	343
PC	4,5	6,3	8,1	13	17	26	36	52	73	102	145	208	297	407	537	692
PD	4,5	6,3	8,1	13	17	26	36	52	73	102	145	208	297	407	537	692

Bevel-helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	3,4	4,7	6,5	8,8	12	16,5	22,8	31	44,4	62	86,5					
RC	4,7	6,5	9	13	18	25	35	49	69	96	135	189	243	303		
RD	5,5	7,7	10,1	16,2	21	32,5	45	65	91	127	178	255	365	500	660	851

Universal HC Series

Universal mounting and Custom made Helical and Bevel - Helical gear units



THERMAL CAPACITY

Nominal thermal capacities P_{tN}

The tables below show the values of the thermal capacities under different cooling conditions, viz : natural cooling, fan cooling and coil cooling. Values apply to an ambient temperature of 20°C. For different ambient temperatures, the nominal thermal capacity Ptn can be obtained by multiplying the thermal capacity P_t for the selected type of cooling, by the ambient thermal factor f_a. Whenever a high heat dissipation level is required together with high operational reliability, it is recommended to consider the application of a water-oil or air-oil heat exchanger.

$$P_{tN} = P_t \times f_a$$

f_a ambient correction factor

Ambient temperature	w/o auxiliary cooling	Auxiliary cooling
10 °C	1,14	1,04
20 °C	1	1
30 °C	0,86	0,94
40 °C	0,72	0,89
50 °C	0,56	0,83

Thermal capacity (kW)

A - No auxiliary cooling

	n1	225	250	280	320	360	400	450	500	560	630
PB	1500	100	125	160	195	250	300	370	445		
PC	1500	80	105	130	165	210	265	335	420	530	670
PD	1500	63	80	100	130	160	205	260	325	410	520
	n1	**225**	**250**	**320**	**360**	**400**	**450**	**500**	**560**	**630**	
RC	1500	76	95	120	150	190	240	305	380		
RD	1500	60	75	90	115	142	190	240	295	370	470

P Series - "Universal" - Helical units - Nominal power rating (kW)

PB

	Size							
i_N	225	250	280	320	360	400	450	500
5	446	608	871	1286	1766	2421	3602	4904
5.6	441	602	861	1272	1747	2395	3562	4850
6.3	408	557	798	1178	1617	2217	3298	4491
7.1	377	514	736	1087	1493	2046	3044	4144
8	343	468	670	989	1359	1863	2771	3772
9	309	421	603	890	1223	1676	2493	3395
10	281	384	549	811	1114	1527	2272	3093
11.2	251	343	490	724	995	1364	2028	2762
12.5	230	315	450	665	913	1252	1862	2535
14	206	281	402	594	815	1118	1662	2263
16	180	246	352	519	713	978	1455	1980
18	160	218	313	462	634	869	1293	1760
20	144	197	281	415	571	782	1164	1584
22.5	119	162	232	343	471	646	960	1308
25	104	142	204	301	413	566	842	1147

n_1 = 1500 rpm

PC

	Size									
i_N	225	250	280	320	360	400	450	500	560	630
20	150	205	293	433	594	814	1211	1649	2341	3456
22.5	138	188	269	398	546	749	1114	1517	2152	3178
25	127	173	248	366	503	689	1025	1395	1980	2924
28	116	158	226	334	458	629	935	1273	1806	2667
31.5	105	143	205	303	416	571	849	1156	1640	2422
35.5	94	129	184	272	373	512	761	1036	1470	2171
40	84	115	165	244	335	459	682	929	1318	1947
45	76	103	148	219	300	412	613	834	1184	1748
50	69	94	135	199	273	374	557	758	1076	1589
56	62	84	120	178	244	334	497	677	961	1419
63	55	75	107	158	217	297	442	602	854	1261
71	49	66	95	140	192	264	392	534	758	1119
80	43	59	84	124	171	234	348	474	673	993
90	36	50	71	105	144	198	294	400	568	839
100	33	45	64	94	130	178	265	360	511	755
112	29	40	57	84	116	159	236	322	456	674
125	23	32	46	68	93	127	189	258	366	540

n_1 = 1500 rpm

P Series - "Universal" - Helical units - Nominal power rating (kW)

PD

	Size									
iN	**225**	**250**	**280**	**320**	**360**	**400**	**450**	**500**	**560**	**630**
100	33	45	64	95	130	179	266	362	514	759
112	29	40	57	85	116	160	237	323	459	677
125	28	38	54	80	110	151	224	305	433	639
140	25	34	48	71	98	134	200	272	386	571
160	22	30	42	62	86	118	175	238	338	499
180	19	26	38	56	76	105	156	212	301	444
200	17	24	34	50	69	94	140	191	270	399
225	15	21	30	44	61	84	124	169	240	355
250	14	19	27	40	55	75	112	152	216	319
280	12	17	24	36	49	67	100	136	193	285
325	11	15	21	31	42	58	86	117	166	246
355	10	13	19	28	39	53	79	107	152	225
400	9	12	17	25	34	47	70	95	135	200
450	7	10	14	21	29	40	59	80	114	169
500	7	9.0	13	19	26	36	53	72	103	152
560	6	8.0	11	17	23	32	47	65	92	135
630	4.7	6.4	9.1	13	19	25	38	51	73	108

n_1 = 1500 rpm

RH • RV Series - "Universal" - Helical units - Nominal power rating (kW)

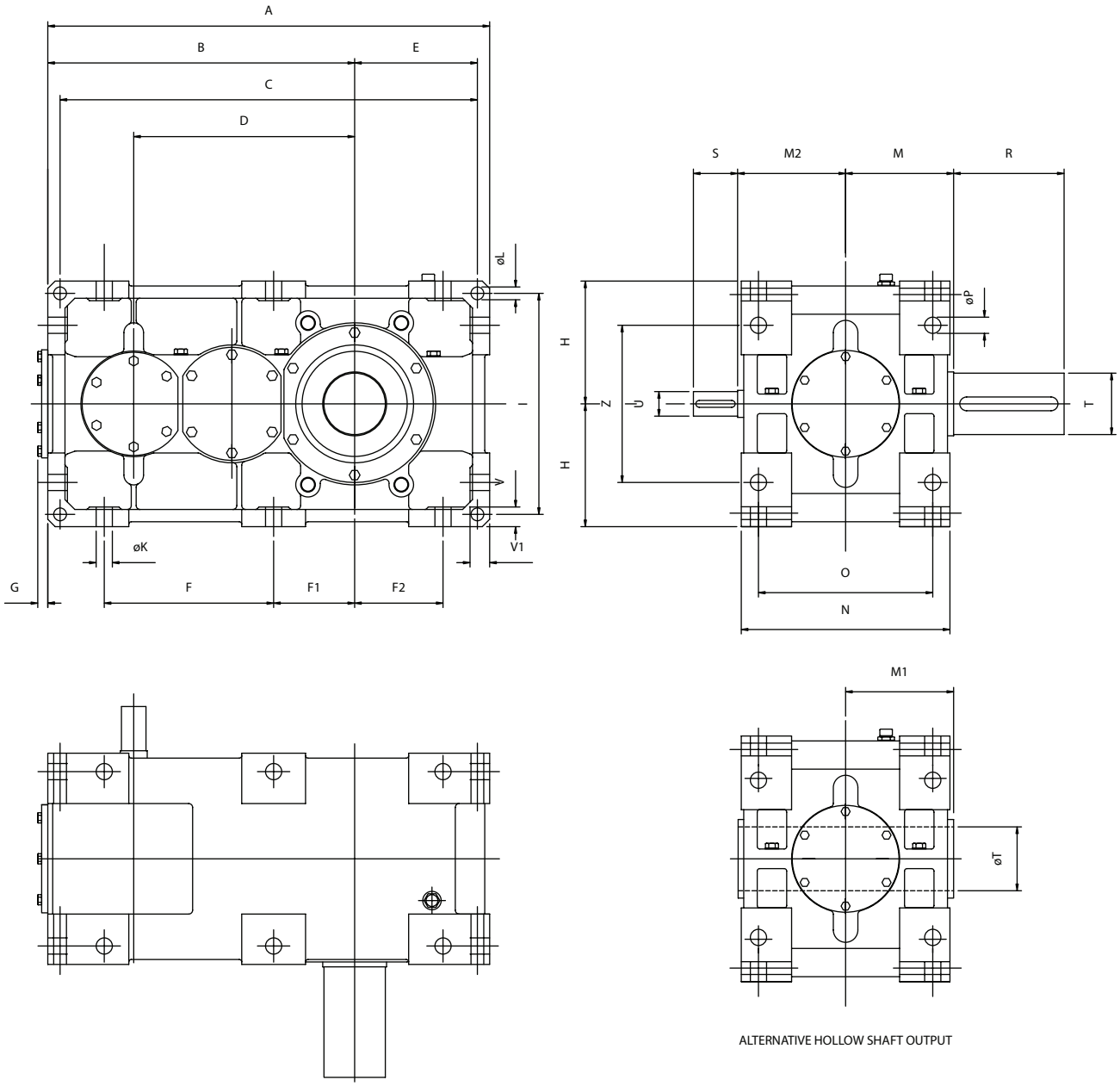
		Size								
	iN	225	250	280	320	360	400	450	500	560
RHC RVC	20	141	201	288	425	583	800	1190	1620	2299
	22.5	133	189	271	400	549	753	1120	1525	2164
	25	120	170	244	360	494	678	1008	1372	1947
	28	109	155	222	328	451	618	920	1252	1777
	31.5	100	143	204	301	414	568	844	1150	1631
	35.5	92	131	187	276	379	520	773	1052	1493
	40	83	118	169	250	343	471	700	953	1352
	45	74	105	150	222	305	418	622	847	1202
	50	66	95	135	200	275	376	560	762	1082
	56	59	84	121	178	245	336	500	681	966
	63	53	75	107	159	218	299	444	605	859
	71	44	63	91	134	184	252	375	510	724
	80	38	54	78	115	158	216	322	438	622
	90	34	48	69	102	140	192	286	390	553
	100	31	44	62	92	126	173	258	351	498
	112	24	34	48	71	98	134	200	272	386
	125	21	30	43	64	88	120	179	244	346

n_1 = 1500 rpm

		Size									
	iN	225	250	280	320	360	400	450	500	560	630
RHD RVD	112	30	42	61	90	123	169	251	342	485	717
	125	27	38	54	80	110	151	225	307	435	642
	140	24	34	49	72	99	135	201	274	388	573
	160	21	30	43	63	86	118	176	239	340	502
	180	19	26	38	56	77	105	156	213	302	446
	200	17	24	34	50	69	95	141	192	272	401
	225	15	21	30	45	61	84	125	170	242	357
	250	13	19	27	40	55	76	113	153	217	321
	280	12	17	24	36	49	68	101	137	194	287
	325	10	15	21	31	42	58	87	118	167	247
	355	9	13	19	28	39	53	79	108	153	226
	400	8	12	17	25	35	47	70	96	136	201
	450	7	10	14	21	29	40	59	81	115	169
	500	6	9.0	13	19	26	36	53	73	103	153
	560	6	8.1	12	17	23	32	48	65	92	136
	630	5	6.4	9	14	19	26	38	52	73	108

n_1 = 1500 rpm

PB Series - "Universal" - Helical units - Double Reduction

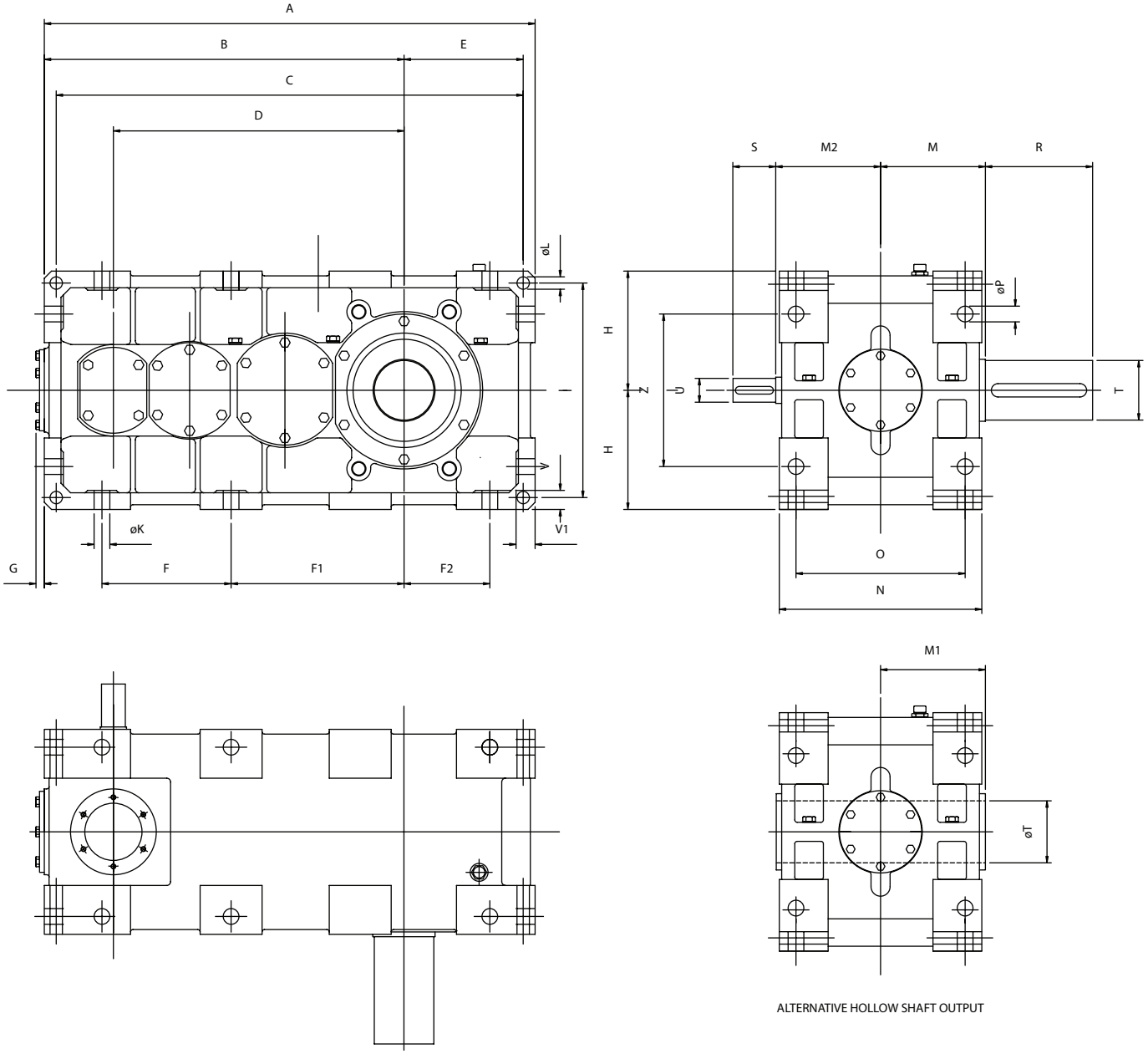


ALTERNATIVE HOLLOW SHAFT OUTPUT

Size

	A	B	C	D	E	F	F1	F2	G	H	I	K	L	N	O	P	V	V1	Z	U	S	M2	U	S	T	R	M	T	R	M1
225	810	565	764	405	222	308	148	160	26	225	400	30	24	380	315	30	36	36	280	60	120	195	50	90	110	200	195	100	180	195
250	900	625	850	450	250	345	165	180	26	250	450	33	26	430	355	33	40	40	320	65	130	220	55	100	125	225	220	110	200	220
280	1015	705	959	505	282	388	185	203	32	280	500	36	30	480	400	36	45	45	360	70	140	245	60	112	140	250	245	125	225	245
320	1145	795	1081	570	318	438	208	230	32	315	560	39	33	540	450	39	50	50	400	80	160	275	70	125	160	280	275	140	250	275
360	1280	890	1208	640	354	493	233	260	38	355	630	42	36	600	500	42	56	56	450	90	180	305	80	140	180	315	305	160	280	305
400	1440	1000	1360	720	400	550	260	290	38	400	710	45	39	680	560	45	63	63	500	100	200	345	90	160	200	355	345	180	315	345
450	1615	1125	1525	810	445	615	295	320	40	450	800	48	42	770	630	48	70	70	560	110	225	390	100	200	220	400	390	200	355	390
500	1805	1255	1705	900	500	688	328	360	40	500	900	52	45	860	710	52	80	80	630	125	250	435	110	225	250	450	435	220	400	435

PC Series - "Universal" - Helical units - Triple Reduction

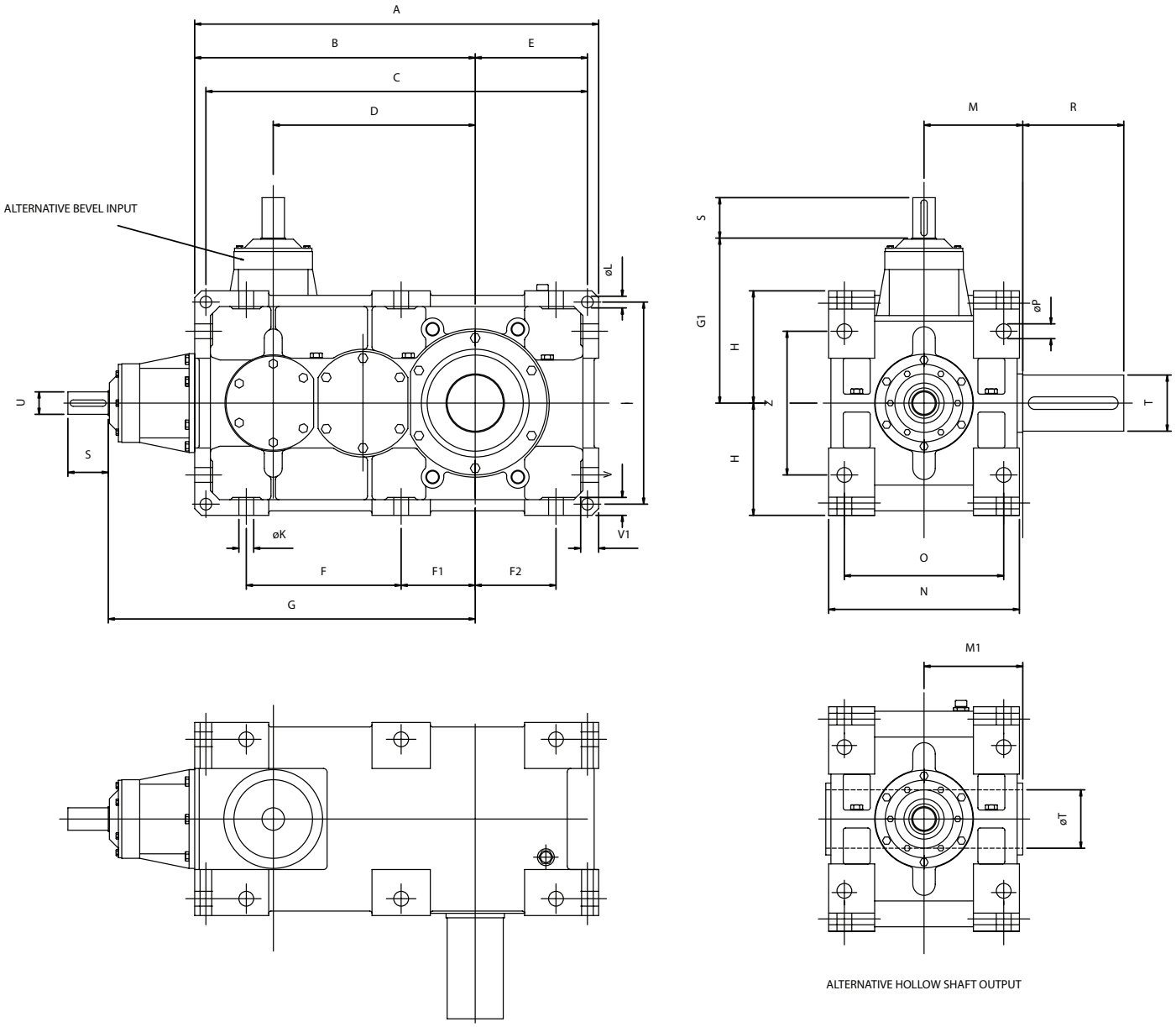


ALTERNATIVE HOLLOW SHAFT OUTPUT

Size

	A	B	C	D	E	F	F1	F2	G	H	I	K	L	N	O	P	V	V1	Z	U	S	M2	U	S	T	R	M	T	R	M1
225	915	670	869	545	222	242	324	160	22	225	400	30	24	380	315	30	36	36	280	50	100	195	40	70	100	200	195	100	180	220
250	1030	755	980	610	250	271	363	179	22	250	450	33	26	430	355	33	40	40	320	55	110	220	45	80	125	225	220	110	200	220
280	1155	845	1099	685	282	305	407	203	26	280	500	36	30	480	400	36	45	45	360	60	120	245	50	90	140	250	245	125	225	245
320	1295	945	1231	770	318	345	460	230	26	315	560	39	33	540	450	39	50	50	400	65	130	275	55	100	160	280	275	140	250	275
360	1455	1065	1383	865	354	388	516	260	32	355	630	42	36	600	500	42	56	56	450	70	140	305	60	112	180	315	305	160	280	305
400	1635	1195	1555	970	400	433	576	290	32	400	710	45	39	680	560	45	63	63	500	80	160	345	70	125	200	355	345	180	315	345
450	1830	1340	1740	1090	445	485	650	320	38	450	800	48	42	770	630	48	70	70	560	90	180	390	80	140	220	400	390	200	355	390
500	2050	1500	1950	1220	500	543	726	360	38	500	900	52	45	860	710	52	80	80	630	100	200	435	90	160	250	450	435	220	400	435
560	2305	1685	2195	1370	565	610	815	405	40	560	1000	56	48	970	800	56	90	90	710	110	220	490	100	180	280	500	490	250	450	490
630	2595	1895	2465	1540	635	688	916	460	40	630	1120	60	52	1090	900	60	100	100	800	125	250	550	110	200	320	560	550	280	500	550

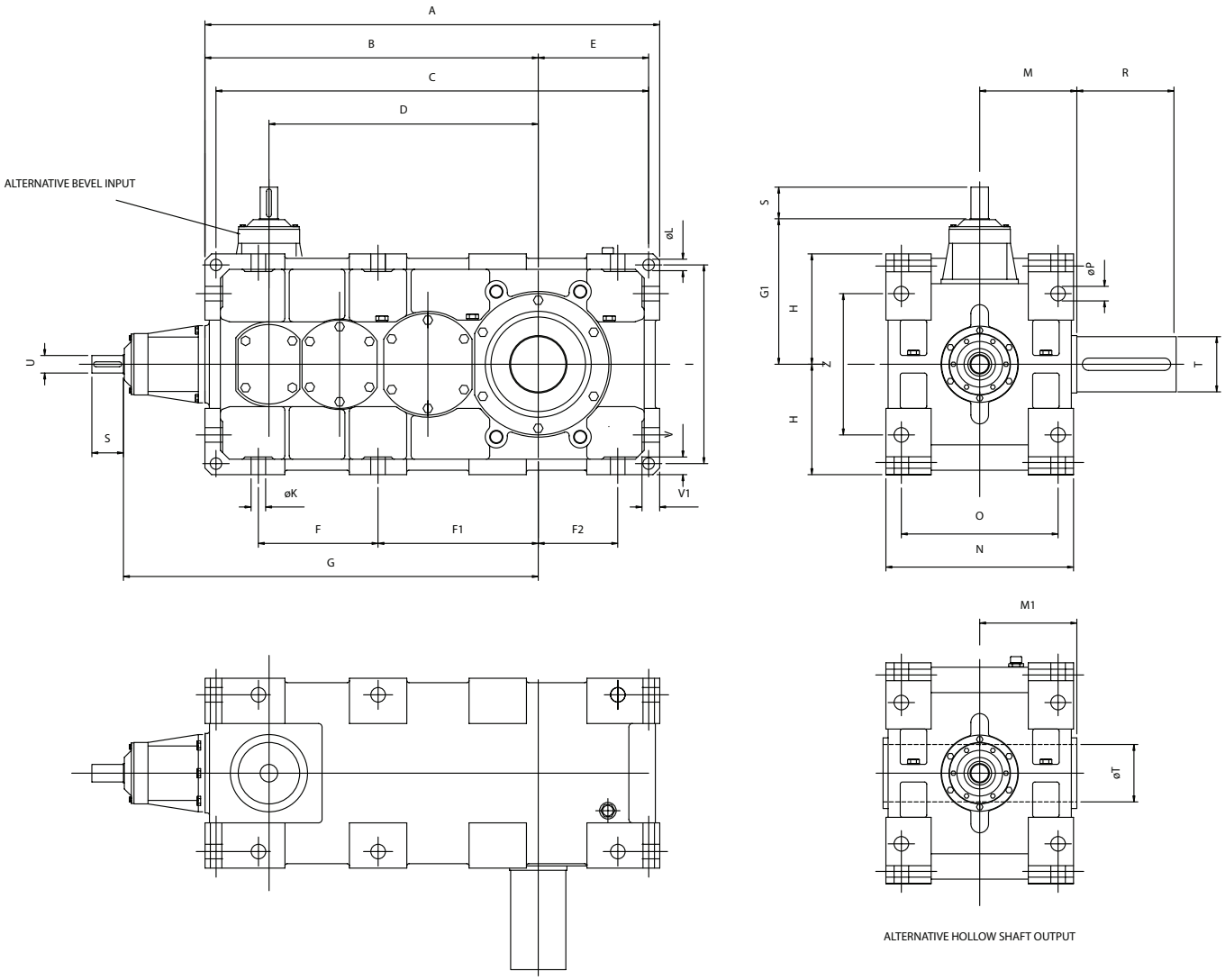
RHC • RVC Series - "Universal" - Helical units - Triple Reduction



Units

	A	B	C	D	E	F	F1	F2	H	I	K	L	N	O	P	V	V1	Z	U	S	G	G1	T	R	M	T	R	M1
225	810	565	764	405	222	308	148	160	225	400	30	24	380	315	30	36	36	280	40	70	720	315	110	200	195	100	180	195
250	900	625	850	450	250	345	165	180	250	450	33	26	430	355	33	40	40	320	45	80	805	355	125	225	220	110	200	220
280	1015	705	959	505	282	388	185	203	280	500	36	30	480	400	36	45	45	360	50	90	905	400	140	250	245	125	225	245
320	1145	795	1081	570	318	438	208	230	315	560	39	33	540	450	39	50	50	400	55	100	1020	450	160	280	275	140	250	275
360	1280	890	1208	640	354	493	233	260	355	630	42	36	600	500	42	56	56	450	60	112	1140	500	180	315	305	160	280	305
400	1440	1000	1360	720	400	550	260	290	400	710	45	39	680	560	45	63	63	500	70	125	1280	560	200	355	345	180	315	345
450	1615	1125	1525	810	445	615	295	320	450	800	48	42	770	630	48	70	70	560	80	140	1440	630	220	400	390	200	355	390
500	1805	1255	1705	900	500	688	328	360	500	900	52	45	860	710	52	80	80	630	90	160	1610	710	250	450	435	220	400	435

RHC • RVD Series - "Universal" - Helical units - Quadruple Reduction



Units

	A	B	C	D	E	F	F1	F2	H	I	K	L	N	O	P	V	V1	Z	U	S	G	G1	T	R	M	T	R	M1
225	915	670	869	545	222	242	324	160	225	400	30	24	380	315	30	36	36	280	32	56	795	250	110	200	195	100	180	195
250	1030	755	980	610	250	271	363	179	250	450	33	26	430	355	33	40	40	320	35	63	890	280	125	225	220	110	200	220
280	1155	845	1099	685	282	305	407	203	280	500	36	30	480	400	36	45	45	360	40	70	1000	315	140	250	245	125	225	245
320	1295	945	1231	770	318	345	460	230	315	560	39	33	540	450	39	50	50	400	45	80	1125	355	160	280	275	140	250	275
360	1455	1065	1383	865	354	388	516	260	355	630	42	36	600	500	42	56	56	450	50	90	1265	400	180	315	305	160	280	305
400	1635	1195	1555	970	400	433	576	290	400	710	45	39	680	560	45	63	63	500	55	100	1420	450	200	355	345	180	315	345
450	1830	1340	1740	1090	445	485	650	320	450	800	48	42	770	630	48	70	70	560	60	112	1590	500	220	400	390	200	355	390
500	2050	1500	1950	1220	500	543	726	360	500	900	52	45	860	710	52	80	80	630	70	125	1780	560	250	450	435	220	400	435
560	2305	1685	2195	1370	565	610	815	405	560	1000	56	48	970	800	56	90	90	710	80	140	2000	630	280	500	490	250	450	490
630	2595	1895	2465	1540	635	688	916	460	630	1120	60	52	1090	900	60	100	100	800	90	160	2250	710	320	560	550	280	500	550

WEIGHTS (kg)

Helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	72	120	164	237	324	450	616	915	1250	1490						
PB	81	138	166	250	390	540	753	955	1465	2040	2810	3750				
PC	96	165	228	309	438	591	814	1190	1520	1810	3280	4450	6100	8900		
PD	116	177	241	327	461	636	865	1298	1620	2400	3410	4690	6550	9650		

Bevel-helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	91	126	176	248	362	494	688	910	1320	1870						
RC	106	126	206	294	360	569	785	1110	1510	2180	3080	4210				
RD	110	159	225	312	436	618	873	1205	1626	2315	3350	4490	6350	8900		

LUBRICANT QUANTITIES (liters)

If not stated otherwise, all units are despatched without oil (a warning label is attached). The approximate quantity of oil required for horizontal mounting is given in the Table below. For mounting positions different from pos.1 (page 32) unit should be filled to the level marked on the level plug or on the dipstick. Do not overfill the unit as this can cause leakage and overheating.

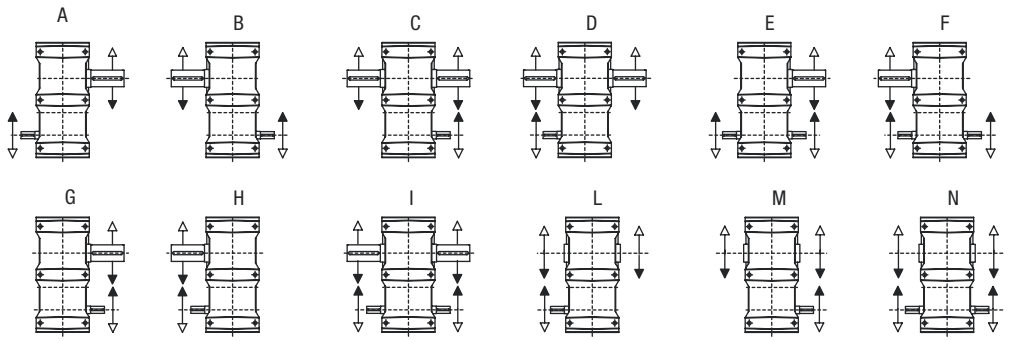
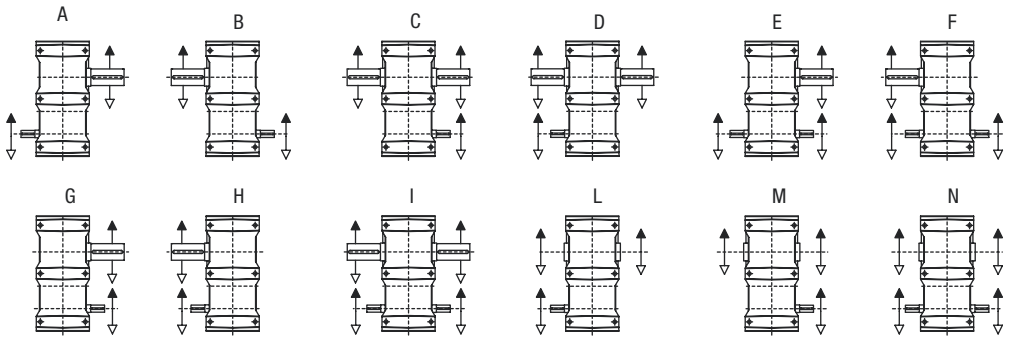
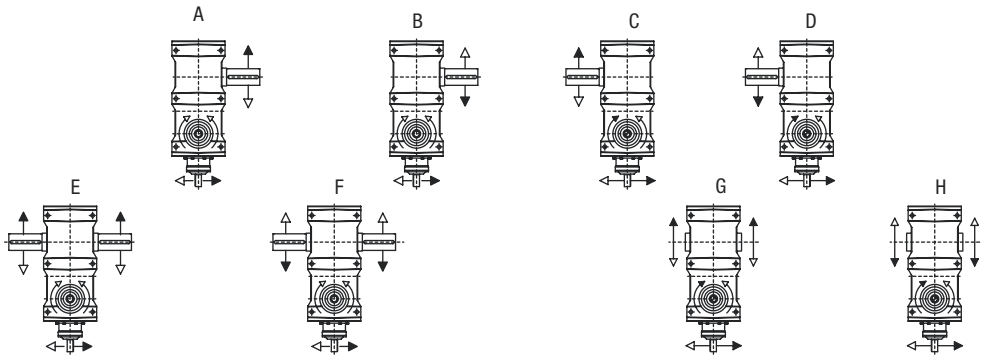
Helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
PA	2,8	3,9	5,4	7,3	9,8	13,8	19	26	37	52	72					
PB	3,6	5	6,5	10	13	18	28	35	49	69	96	135	189	235	289	343
PC	4,5	6,3	8,1	13	17	26	36	52	73	102	145	208	297	407	537	692
PD	4,5	6,3	8,1	13	17	26	36	52	73	102	145	208	297	407	537	692

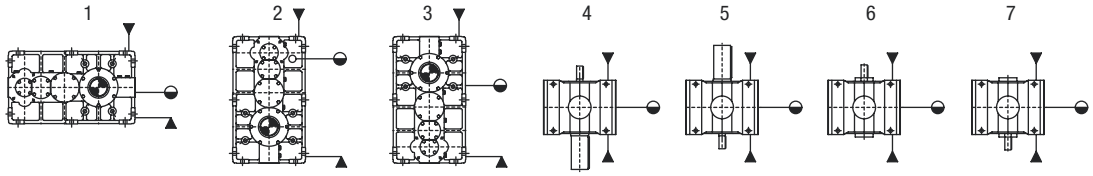
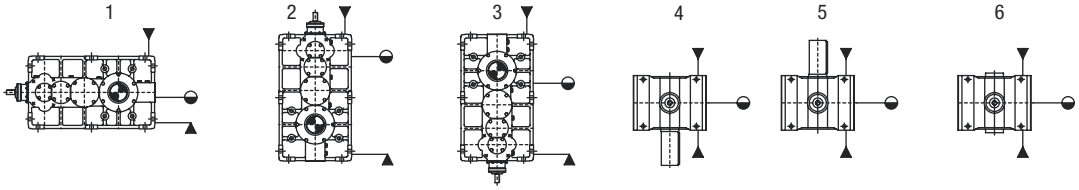
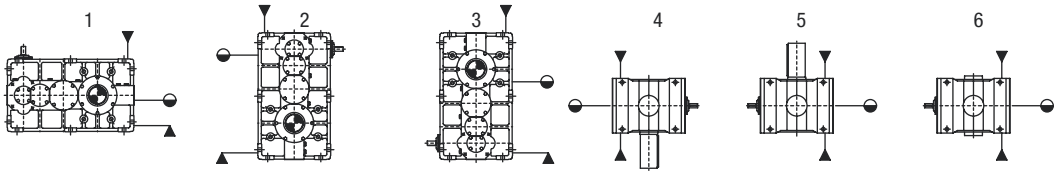
Bevel-helical units

	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
RB	3,4	4,7	6,5	8,8	12	16,5	22,8	31	44,4	62	86,5					
RC	4,7	6,5	9	13	18	25	35	49	69	96	135	189	243	303		
RD	5,5	7,7	10,1	16,2	21	32,5	45	65	91	127	178	255	365	500	660	851

SHAFT ARRANGEMENT

PA - PC	
PB - PD	
RH - RV	

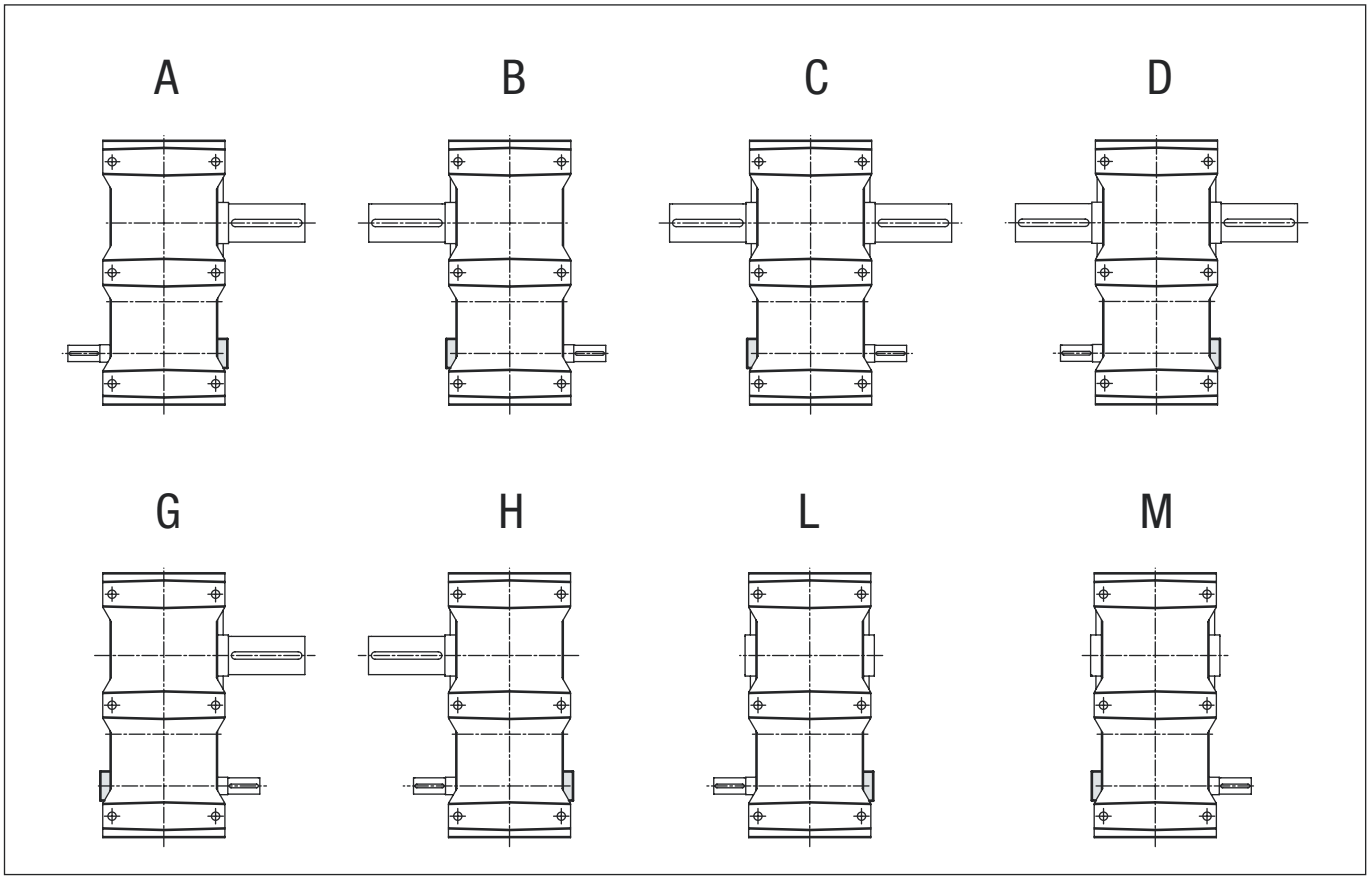
MOUNTING POSITION

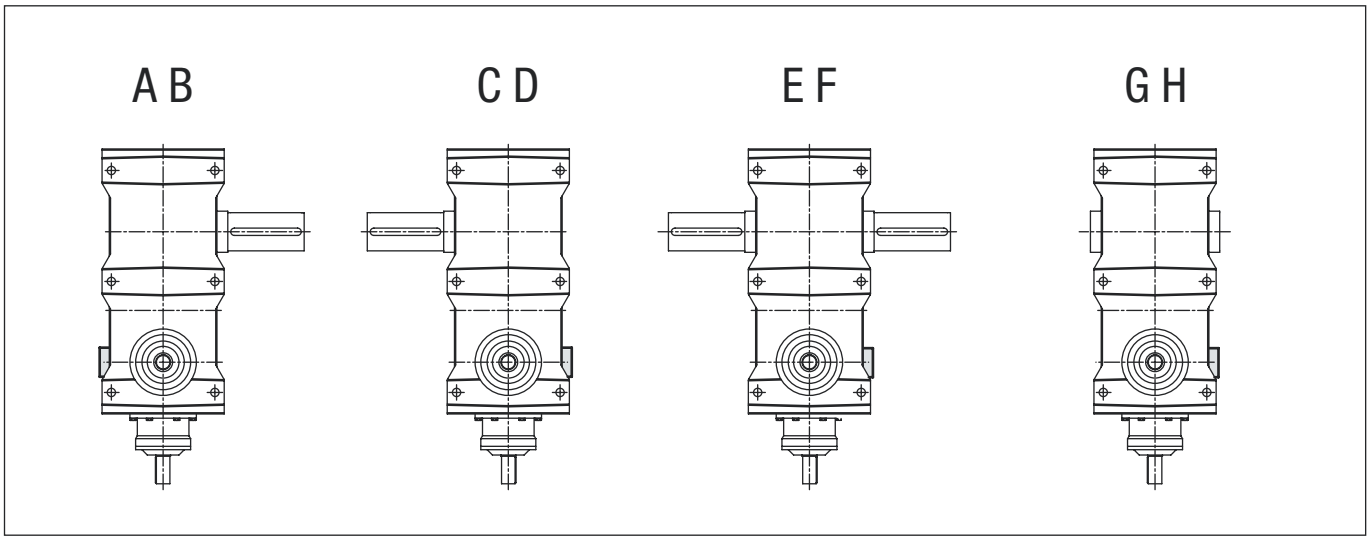
P	
RH	
RV	

▼ Breather plug ◒ Level plug ▲ Drain plug

BACKSTOP DEVICES

Holdbacks can be fitted to all gear units. They are located externally on helical pinion shaft as shown in the diagrams below.





LUBRICATION

ISO & AGMA Viscosity grade

Speed n_2 (min^{-1})	Standard	Ambient temperature range (°C)		
		from -10 to -15	from 0 to +30	from +10 to +50
Under 100	ISO - AGMA	VG 68 2 EP	VG 150 4 EP	VG 220 5 EP
Over 100	ISO - AGMA	VG 100 3 EP	VG 220 5 EP	VG 320 6 EP

Recommended Mineral Lubricants

ISO viscosity at 40°Celsius (cSt)	BP Energol	ESSO Spartan	MOBIL Mobilgear	SHELL Omala	TEXACO Meropa	TOTAL Carter	AGIP Blasia
VG 320	GR-XP 320	EP 320	632	320	320	EP 320	320
VG 220	GR-XP 220	EP 220	630	220	220	EP 220	220
VG 150	GR-XP 150	EP 150	629	150	150	EP 150	150
VG 100	GR-XP 100	EP 100	627	100	100	EP 100	100
VG 68	GR-XP 68	EP 68	626	68	68	EP 68	68

Recommended Synthetic Lubricants

ISO viscosity at 40°Celsius (cSt)	BP Enersyn	CASTROL Tribol	MOBIL SHC	KLUEBER EG4
VG 320	EPX 320	1510/320	632	320
VG 220	EPX 220	1510/220	630	220
VG 150	HTX 150	1510/150	629	150
VG 68			626	

Mineral oil : max running temperature 90°Celsius
Synthetic oil: max running temperature 100°Celsius (110°Celsius for short running).
Do not mix up different brands.

Oil change interval (h)

TYPE	Oil temperature		
	65°c	80°C	90°C
Mineral	8000	4000	2000
Synthetic	20000	15000	10000

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