KNGEAR

TECHNICAL SERIES

RUBBER & PLASTICS GEARBOXES

Reducers for extrusion, mixing
and heavy-duty process machinery

ENGLISH TECHNICAL EDITION

Product configurations, reference drawings & selection data

PRODUCT PORTFOLIO

Gearbox Families & Applications

ZLYJ / ZL(S)YJ

Extruder gear reducers

Single-screw extrusion and related processing lines; outline and shaft dimensions.

ZSYJ

Heavy-duty extrusion reducers

Larger gear reducer configurations with separate external dimension tables.

ML / YM

Internal mixer reducers

Reducer configurations for rubber mixing and kneading equipment; motor input diagrams included.

SK (XK)

Open-mill / mixing mill reducers

Two-output shaft machinery, with load distribution through the gear train.

XM

Internal mixing line reducers

Parallel twin-output arrangement for enclosed mixing applications.

Additional series

Special-purpose process gearing

Helical, bevel-helical, parallel-shaft and application-specific equipment reducers.

Engineering use: Drawing dimensions and configurations should be confirmed from the latest approved general arrangement drawing before manufacture or retrofit.

REFERENCE DATA | ORIGINAL NUMERIC VALUES

ZLYJ Series - Dimensional Reference

Outline envelope, foot mounting, input/output shafts and auxiliary connections.

Model	a	Overall / envelope					Foot mounting								Input shaft				
		A	B	H	F	h	n2–d4	m1	m2	m3	m4	m5	m6	m7	d1 (m6)	l1	L1	t1	b1
ZLYJ112	184	426	170	130	96	18	4–ϕ14	96	/	326	50	/	136	170	28	60	106	31	8
ZLYJ133	218	478	215	140	95	20	6–ϕ14	104	185	185	61	/	180	184	28	60	125	31	8
ZLYJ146	256	560	250	160	114	22	6–ϕ16	118	190	235	72	/	210	210	32	70	148	35	10
ZLYJ173	285	576	256	170	109.5	22	6–ϕ18	113.5	220	220	68	/	225	214	38	80	148	41	10
ZLYJ180	320	650	298	180	130	25	6–ϕ18	130	260	250	70	/	250	220	40	80	176	43	12
ZLYJ200	340	750	340	240	160	35	6–ϕ18	150	275	275	100	/	290	310	45	80	200	48.5	14
ZLYJ224	384	800	360	250	161	35	6–ϕ26	165	310	310	90	/	315	330	55	110	205	59	16
ZLYJ250	430	930	380	280	190	45	6–ϕ26	205	360	360	105	/	330	340	60	110	220	64	18
ZLYJ280	480	970	410	300	190	50	6–ϕ30	200	385	385	100	/	355	380	65	125	240	69	18
ZLYJ315	539	1160	450	350	231	50	6–ϕ30	260	450	450	130	/	390	460	75	140	250	79.5	20
ZLYJ325	575	1160	450	350	230	60	6–ϕ30	225	450	450	130	/	390	425	85	170	260	90	22
ZLYJ375	625	1280	466	400	240	60	8–ϕ32	250	475	500	165	265	400	500	85	170	265	90	22
ZLYJ420	695	1420	550	460	270	60	8–ϕ32	305	580	540	150	328	480	580	95	130	310	100	25
ZLYJ450	765	1550	600	500	295	60	8–ϕ32	300	600	600	190	300	520	/	100	130	350	106	28

Model	Output shaft				Output end		Torque arm								Cooling ports			Weight / oil	
	d2(H8)	t2	b2	L4	d5	d6	L5	M	L2	ϕ1	ϕ2(H7)	L3	ϕ3	n1–d3	C	D	E	kg	L
ZLYJ112	35	38.3	10	52	M16	18	/	125	203	185	160	8	210	6–M10	/	/	/	95	4
ZLYJ133	38	41.3	10	80	M16	20	/	137	205	205	180	8	230	8–M12	/	/	/	144	7
ZLYJ146	45	48.8	14	120	M16	20	/	167	245	230	200	8	260	8–M12	/	/	/	205	10
ZLYJ173	50	57.6	14*2	140	M20	25	/	167	250	260	230	8	300	8–M16	85	38	ZG1/2"	256	12
ZLYJ180	50	57.6	14*2	150	M24	21	/	171	290	260	230	8	320	8–M16	120	40		360	18
ZLYJ200	60	68.8	18*2	170	M85X4	40	50	250	330	300	270	8	350	12–M16	120	50		500	28
ZLYJ224	70	78.8	18*2	170		55		265	355	370	330	8	420	12–M20	140	50		650	33
ZLYJ250	80	90.8	22*2	180				285	380	370	330	8	420	12–M20	160	50	ZG3/4"	815	46
ZLYJ280	90	100.8	25*2	180				300	405	400	360	8	450	12–M24	160	60		1020	55
ZLYJ315	100	112.8	28*2	200	M90X4			335	440	405	365	8	450	12–M24	160	55		1410	84
ZLYJ325	110	122.8	28*2	220	M85X4	60	60	350	445	450	400	10	500	12–M24	160	55		1520	87
ZLYJ375	110	122.8	28*2	255				345	445	450	400	10	500	12–M24	160	60		1800	110
ZLYJ420	120	134.8	32*2	270	M90X4			370	535	580	500	10	660	12–M30	200	60		2750	166
ZLYJ450	170	188.8	40*2	250				425	600	610	500	15	700	12–M30	200	60		3560	215

Reading guide: dimensions are in mm unless otherwise stated; shaft fits, thread designations and data symbols are retained from the supplied document. Confirm against the latest approved drawing.

REFERENCE DATA | ORIGINAL NUMERIC VALUES

ZSYJ Series - Dimensional Reference

Larger gearbox sizes; dimensional fields are keyed to the accompanying engineering drawing.

Model	a	Overall / envelope						Foot mounting							Input shaft				
		A	B	H	H1	h	F	n2–d4	m1	m2	m3	m4	m5	m6	d1 (m6)	l1	L1	t1	b1
ZSYJ224	384	800	360	250	138	35	161	6–ϕ26	165	310	310	90	/	315	42	85	205	45	12
ZSYJ250	430	930	380	280	140	45	190	6–ϕ26	205	360	360	105	/	330	48	82	220	51.5	14
ZSYJ280	480	970	410	300	154	50	190	6–ϕ30	200	385	385	100	/	355	55	110	240	59	16
ZSYJ315	539	1160	450	350	190	50	231	6–ϕ30	260	450	450	130	/	390	60	110	260	64	18
ZSYJ325	575	1160	450	350	170	60	230	6–ϕ30	225	450	450	130	/	390	65	125	260	69	18
ZSYJ375	625	1280	466	400	220	60	240	8–ϕ32	250	475	500	165	265	400	75	140	265	79.5	20
ZSYJ420	695	1420	550	460	260	60	270	8–ϕ32	305	580	540	150	328	480	85	170	310	90	22
ZSYJ450	765	1550	600	500	276	60	295	8–ϕ32	300	600	600	190	300	520	85	170	350	90	22

Model	Output shaft				Output end				Torque arm					Cooling ports			
	d2(H8)	t2	b2	L4	d5	d6	L5	M	L2	ϕ1	ϕ2(H7)	L3	ϕ3	n1–d3	C	D	E
ZSYJ224	70	78.8	18*2	170	M85X4	55	50	265	355	370	330	8	420	12–M20	140	50	ZG1/2"
ZSYJ250	80	90.8	22*2	180				285	380	370	330	8	420	12–M20	160	50	ZG3/4"
ZSYJ280	90	100.8	25*2	180				300	405	400	360	8	450	12–M24	160	60	
ZSYJ315	100	112.8	28*2	200	M90X4			335	440	405	365	8	450	12–M24	160	55	
ZSYJ325	110	122.8	28*2	220	M85X4	60	60	350	445	450	400	10	500	12–M24	160	55	
ZSYJ375	110	122.8	28*2	255	M90X4			345	445	450	400	10	500	12–M24	160	60	
ZSYJ420	120	134.8	32*2	270				370	535	580	500	10	660	12–M30	200	60	
ZSYJ450	170	188.8	40*2	250				425	600	610	500	15	700	12–M30	200	60	

Reading guide: dimensions are in mm unless otherwise stated; shaft fits, thread designations and data symbols are retained from the supplied document. Confirm against the latest approved drawing.

DIMENSIONS & SHAFT INTERFACES

ZLYJ - General Arrangement

The drawing shows typical housing, shaft-end details and mounting configurations. Use the tabulated symbols on previous pages to read dimensions.

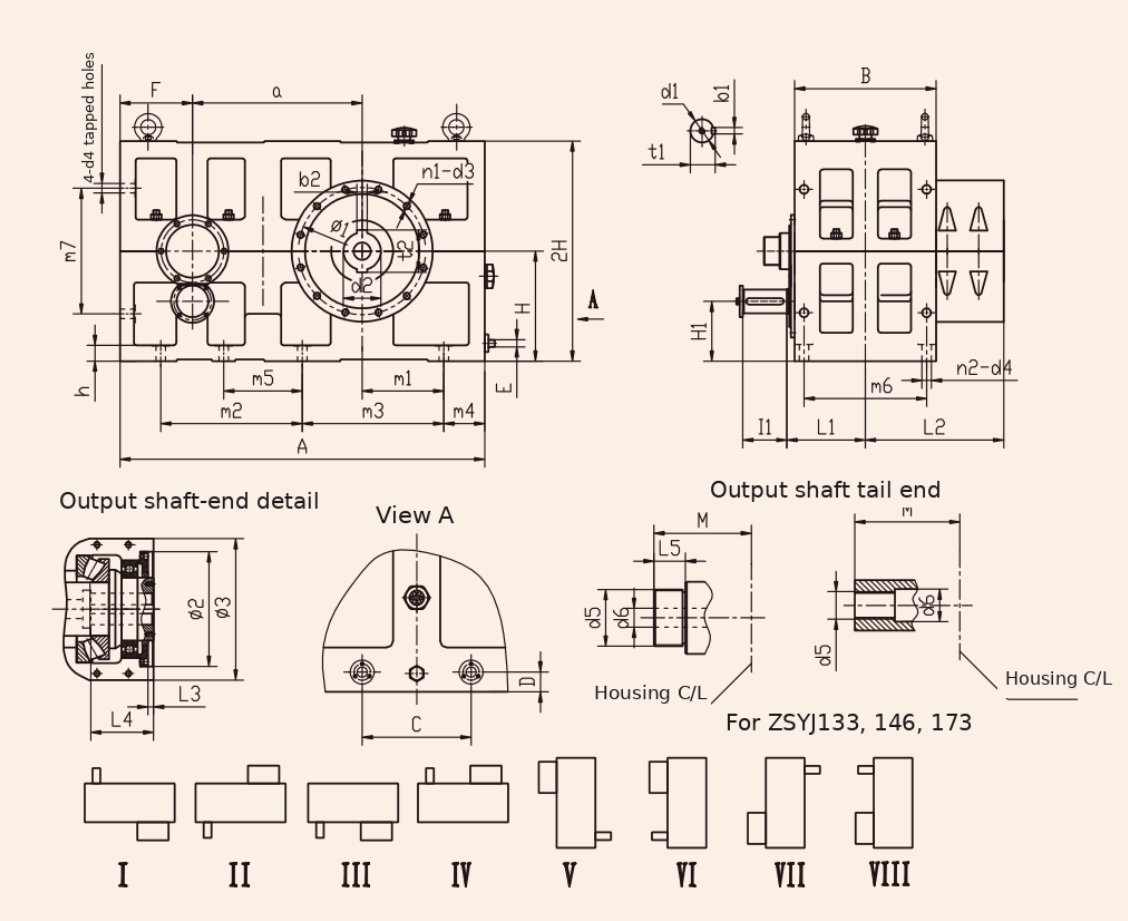


Illustration from the supplied source, shown as a dimensional reference only. A model-specific general arrangement must be confirmed during technical review.

CONFIGURATION REFERENCE

Cooling & Lubrication Provisions

Available oil pump, internal cooling passage and external oil cooler arrangements by size, as indicated by the source catalogue.

Model	Oil pump	Cooling chamber	Oil cooler	Remarks
ZLYJ112	No	No	No	Natural cooling
ZLYJ133	No	No	No	Natural cooling
ZLYJ146	No	No	No	Natural cooling
ZLYJ173	No	Yes	No	Specify at order
ZLYJ180	Yes	Yes	No	Specify at order
ZLYJ200	Yes	Yes	No	Specify at order
ZL(S)YJ224	Yes	Yes	No	Specify at order
ZL(S)YJ250	Yes	Yes	No	Specify at order
ZL(S)YJ280	Yes	Yes	No	Specify at order
ZL(S)YJ315	Yes	Yes	Yes	-
ZL(S)YJ325	Yes	Yes	Yes	-
ZL(S)YJ375	Yes	Yes	Yes	-
ZL(S)YJ420	Yes	Yes	Yes	-
ZL(S)YJ450	Yes	Yes	Yes	-
ZSYJ560	Yes	Yes	Yes	-
ZL(S)YJ630	Yes	Yes	Yes	-

Cooling arrangements are configuration-dependent. Specify inlet ambient temperature, duty cycle, lubricant and site utilities when requesting a proposal.

OPERATING GUIDANCE

Installation & Maintenance

Translated and condensed from the installation, use and maintenance notes in the supplied brochure.

01

Storage & transport

Keep the unit protected from moisture during storage and transportation. Protect exposed, unpainted machined surfaces against corrosion during long-term storage.

02

Base & alignment

Install the gearbox on a level, stable mounting foundation. Before coupling to the driven equipment, verify shaft rotation and alignment; do not force an ill-fitting coupling or impose harmful impact loads.

03

Initial lubricant & run-in

Fill with the specified gear lubricant before startup. The source refers to L-CKC 220 / L-CKC 320 gear oils and an initial oil change after about 300-600 operating hours; subsequent replacement is indicated at 3,000-hour intervals under normal conditions.

04

Circulation & filtration

Check that the lubrication system supplies the gears and bearings correctly. Abnormal pump noise or signs of inadequate oil flow require inspection of oil level, filter and circulation path before continued operation.

05

Temperature management

Check the oil temperature, heat rejection and viscosity, particularly during prolonged operation. Use appropriate cooling and start-up precautions for site temperature and seasonal conditions.

06

Abnormal operation

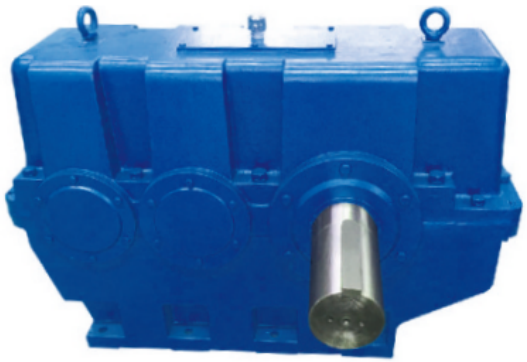
If unusual sound, vibration, rapid oil temperature rise or other abnormal operation occurs, stop and inspect the gearbox. The source mentions oil temperature exceeding 70 C and lubricating oil temperature exceeding 100 C as conditions needing investigation.

These are reference notes from a historical document and do not replace the gearbox-specific operating manual, approved lubricant recommendation or maintenance procedure.

RUBBER PROCESSING | EQUIPMENT TYPES

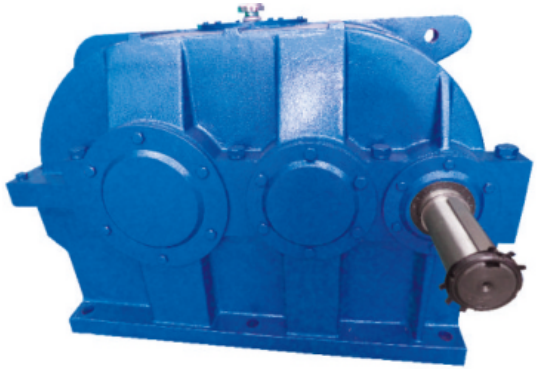
ML & YM Mixer Gear Reducers

A series overview followed by the individual general arrangement diagrams provided in the source material.



ML SERIES

ML10 / ML20 / ML35 / ML55 / ML75 / ML75B / ML110 / ML110B / ML150



YM SERIES

YM35 / YM55 / YM75 / YM110

The brochure describes hardened cylindrical-gear reducer units for internal mixers and related rubber-processing machinery. Stated examples emphasize alloy-steel gearing, ground teeth and reduced noise. These descriptions are source-derived and do not by themselves certify a specific KNGEAR manufacturing process.

DRAWING NOTATION

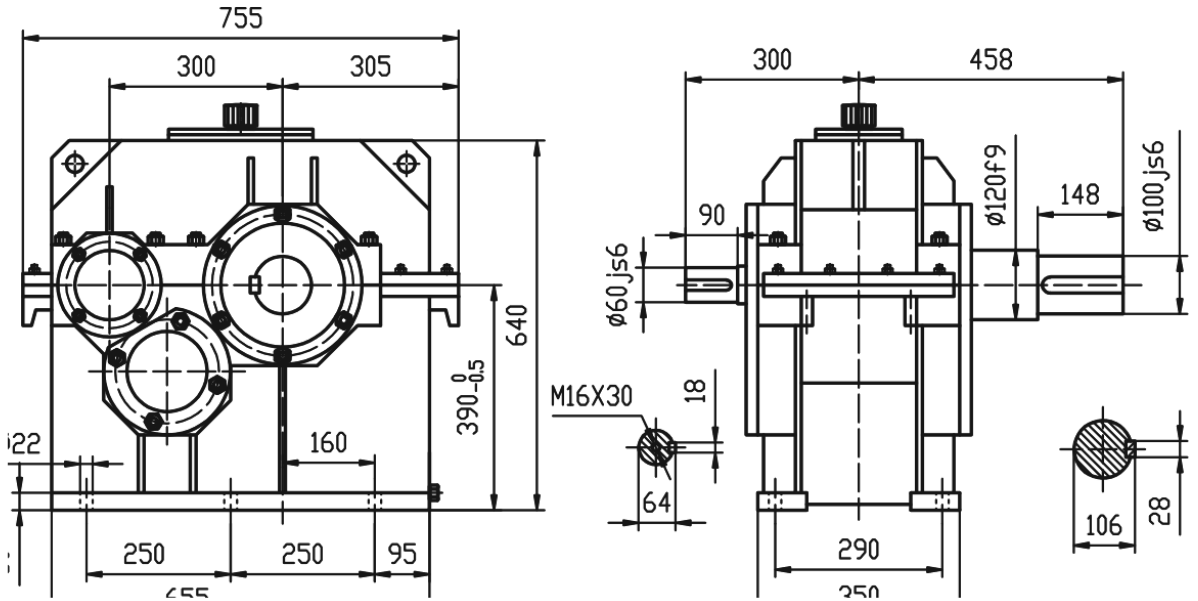
The drawings on the following pages retain the numerical geometry from the source. Input power, nominal input speed and ratio shown below each model are historical examples, not guaranteed ratings. All dimensions must be checked against a current approved drawing.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML10 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
18.5 kW	750 rpm	22.4:1

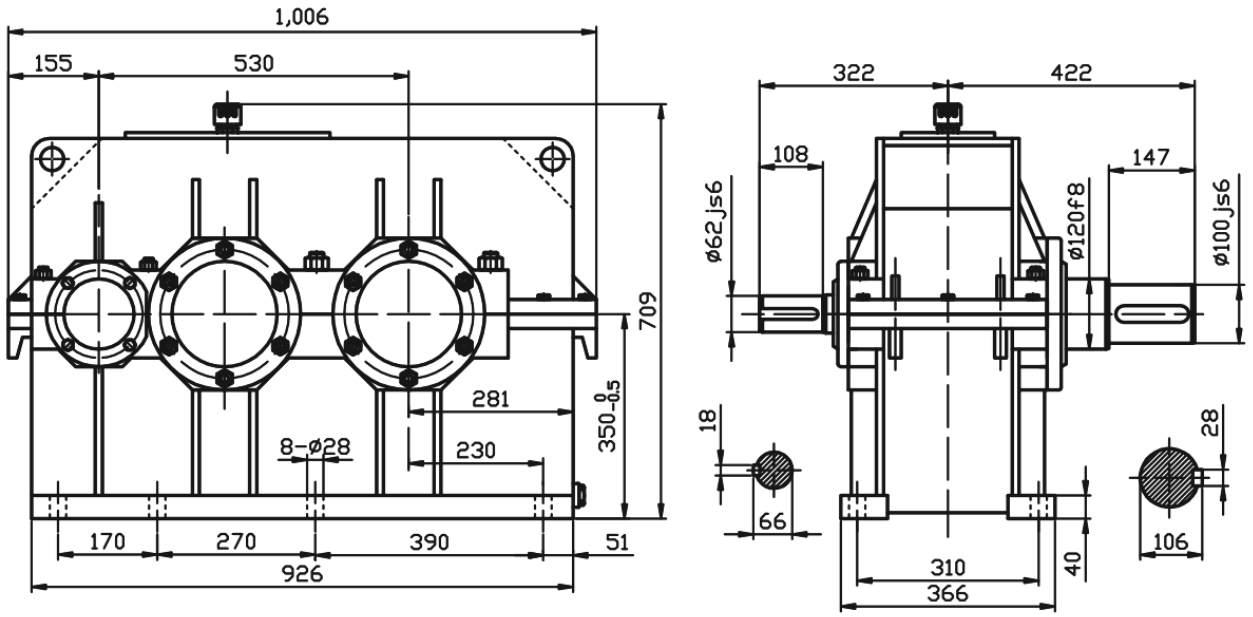
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML20 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
37 kW	750 rpm	20:1

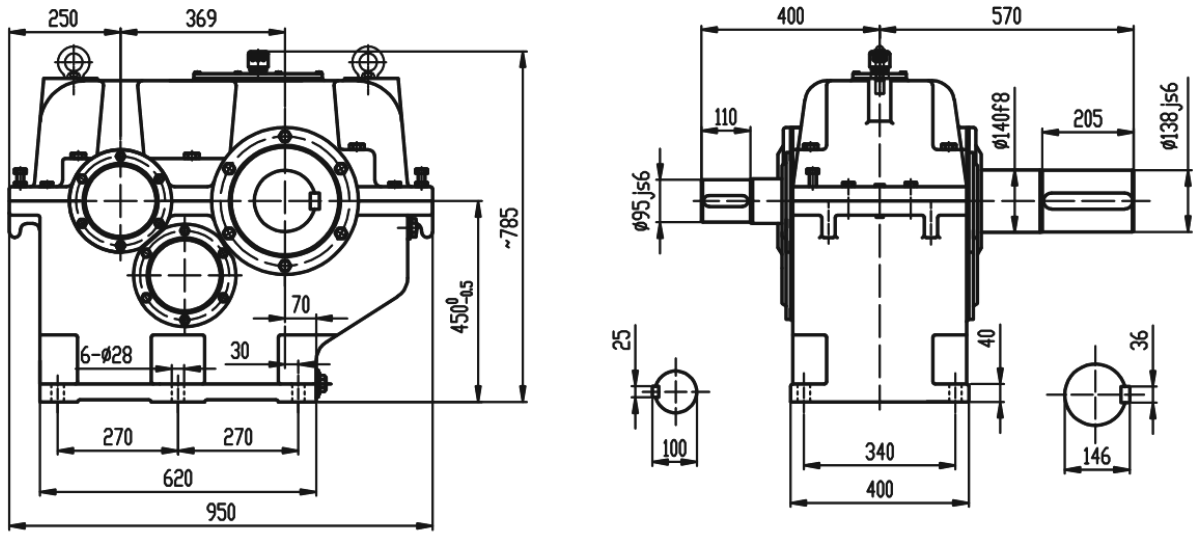
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML35 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
45 kW	750 rpm	20:1

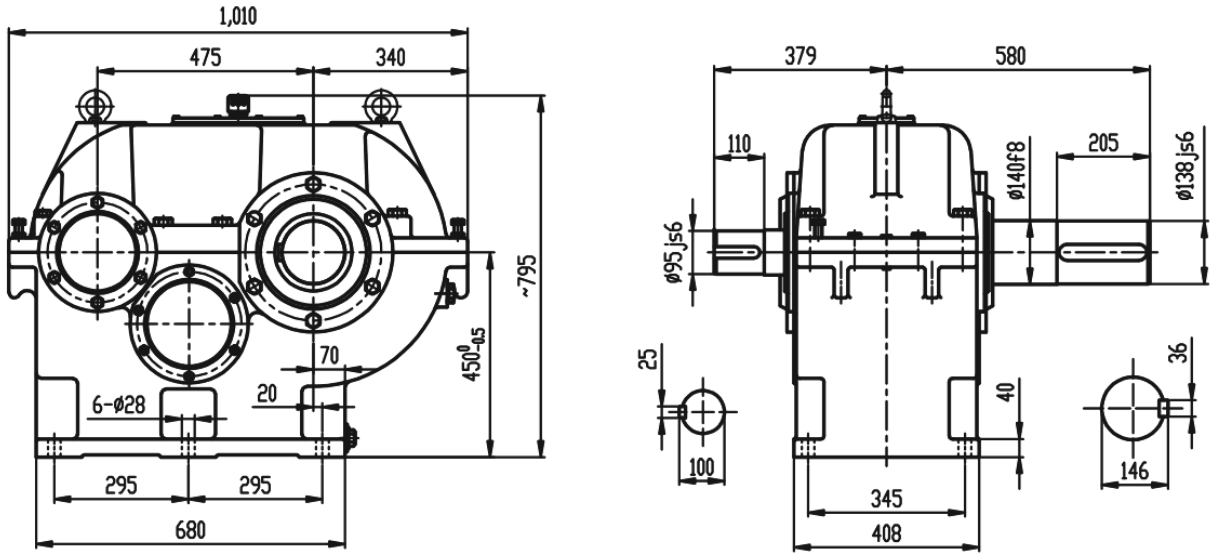
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML55 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
75 kW	750 rpm	20:1

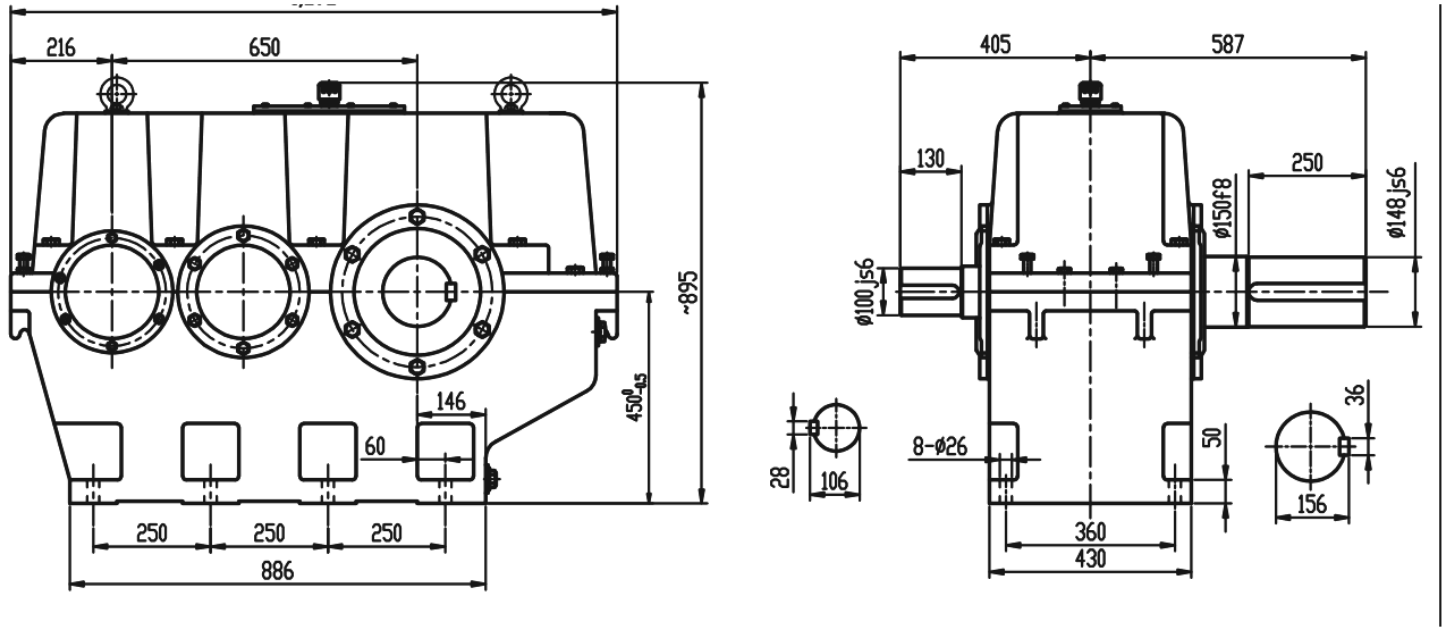
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML75 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
110 kW	750 rpm	20:1

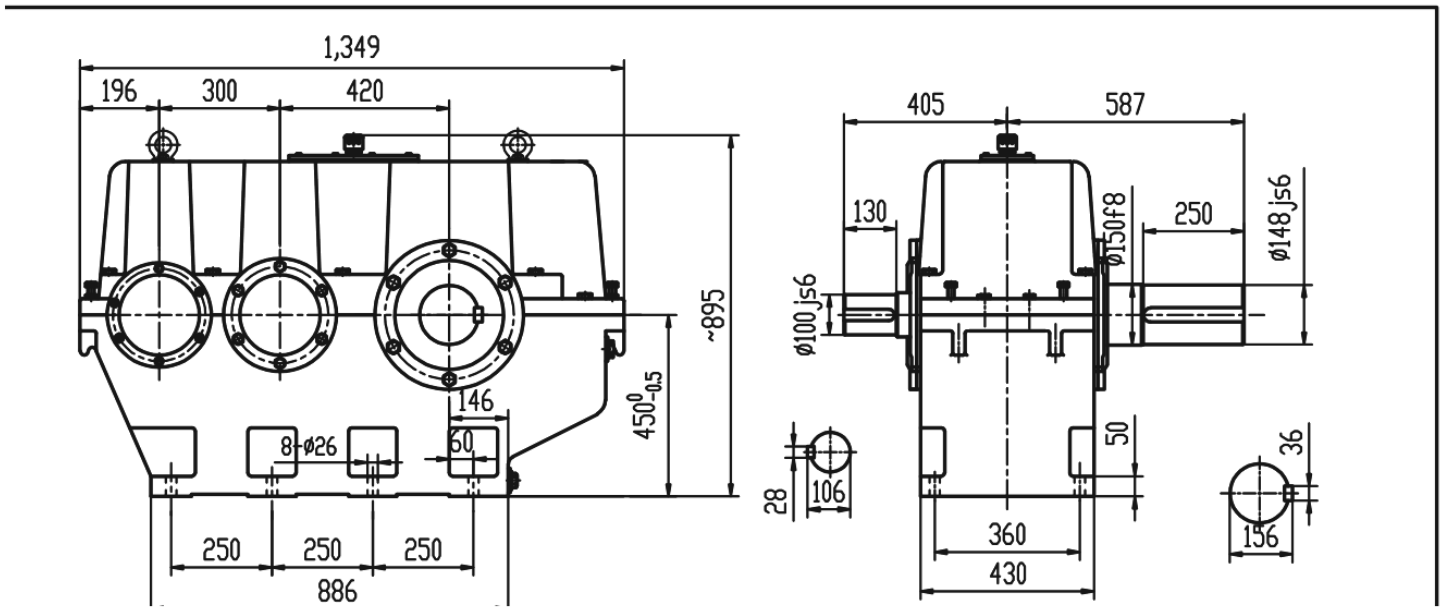
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML75B - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
132 kW	750 rpm	20:1

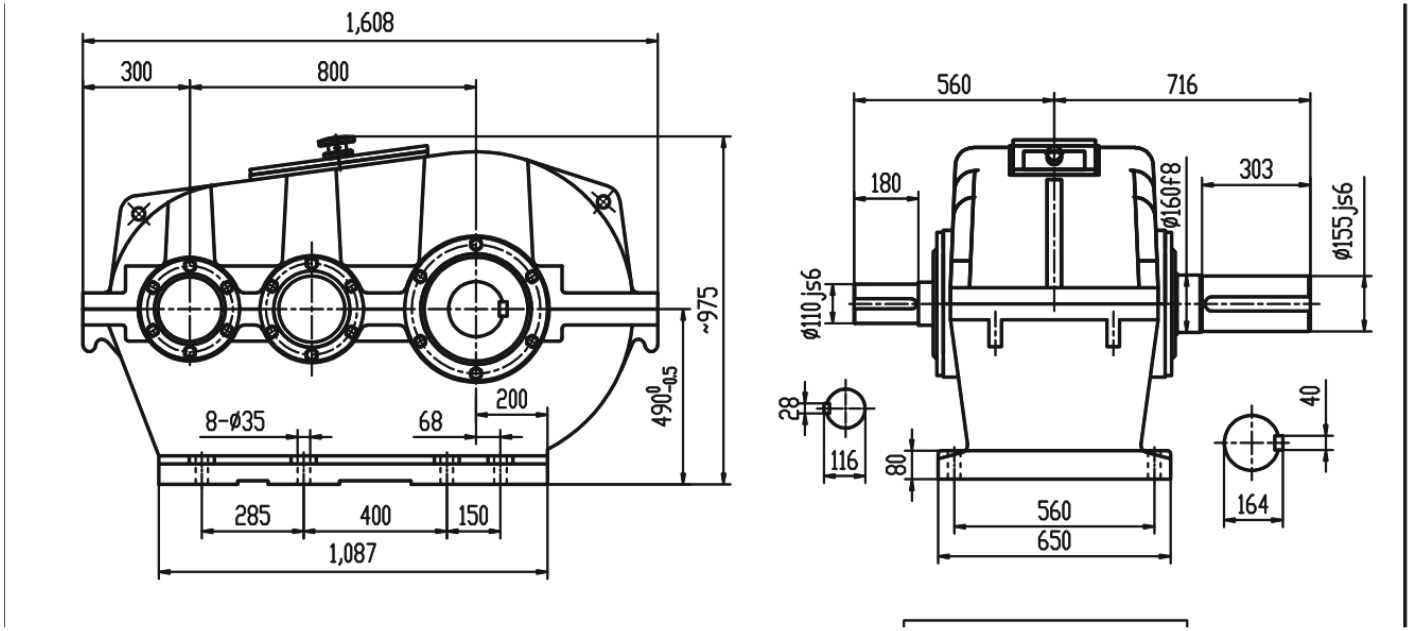
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML110 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
185 kW	750 rpm	25.6:1

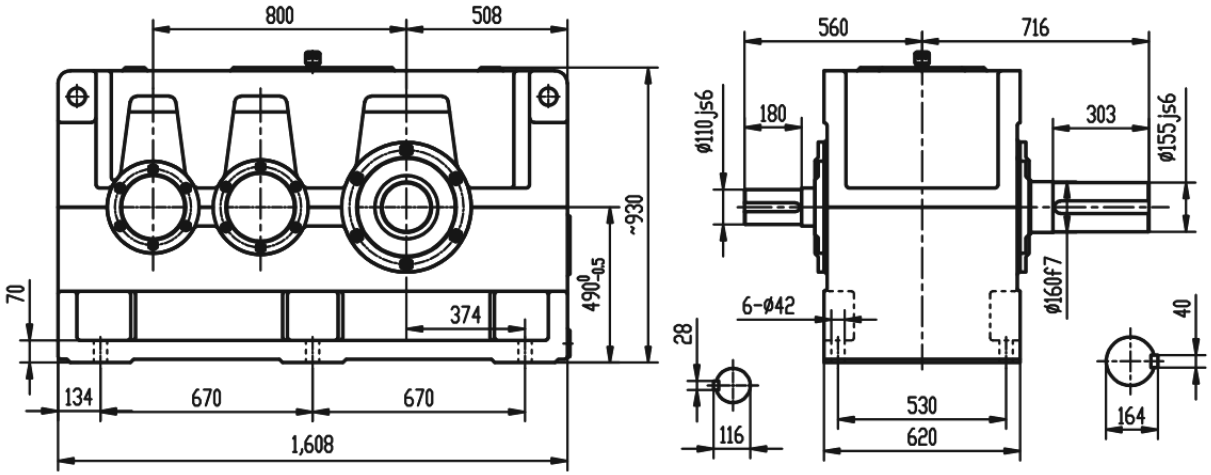
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML110B - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
185 kW	750 rpm	25.6:1

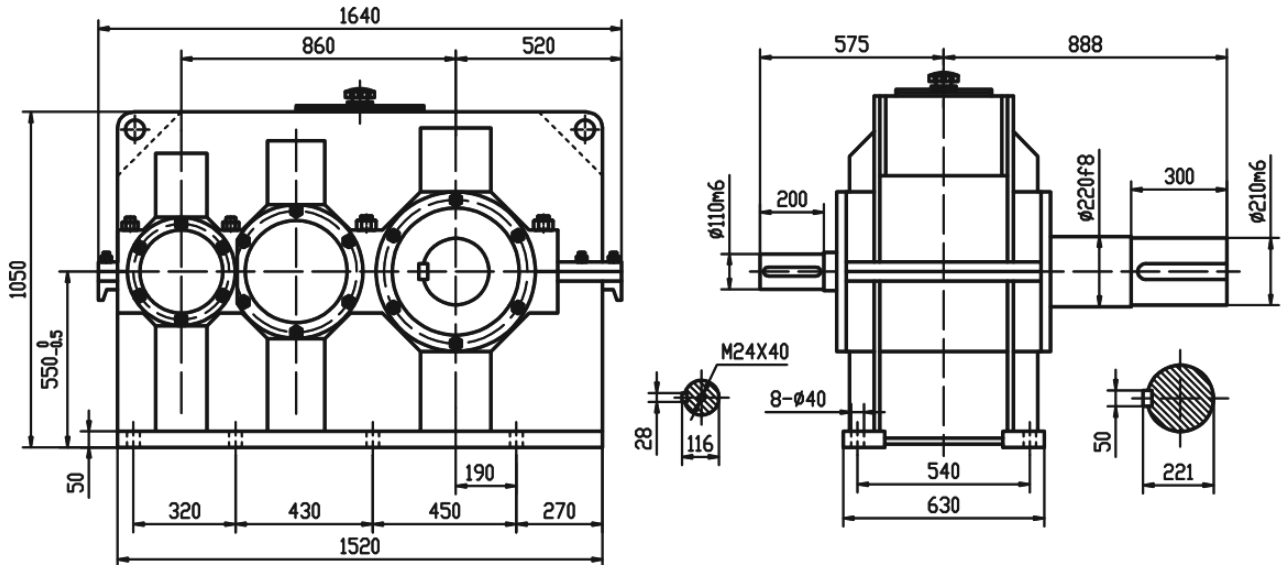
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

ML150 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
220 kW	750 rpm	25:1

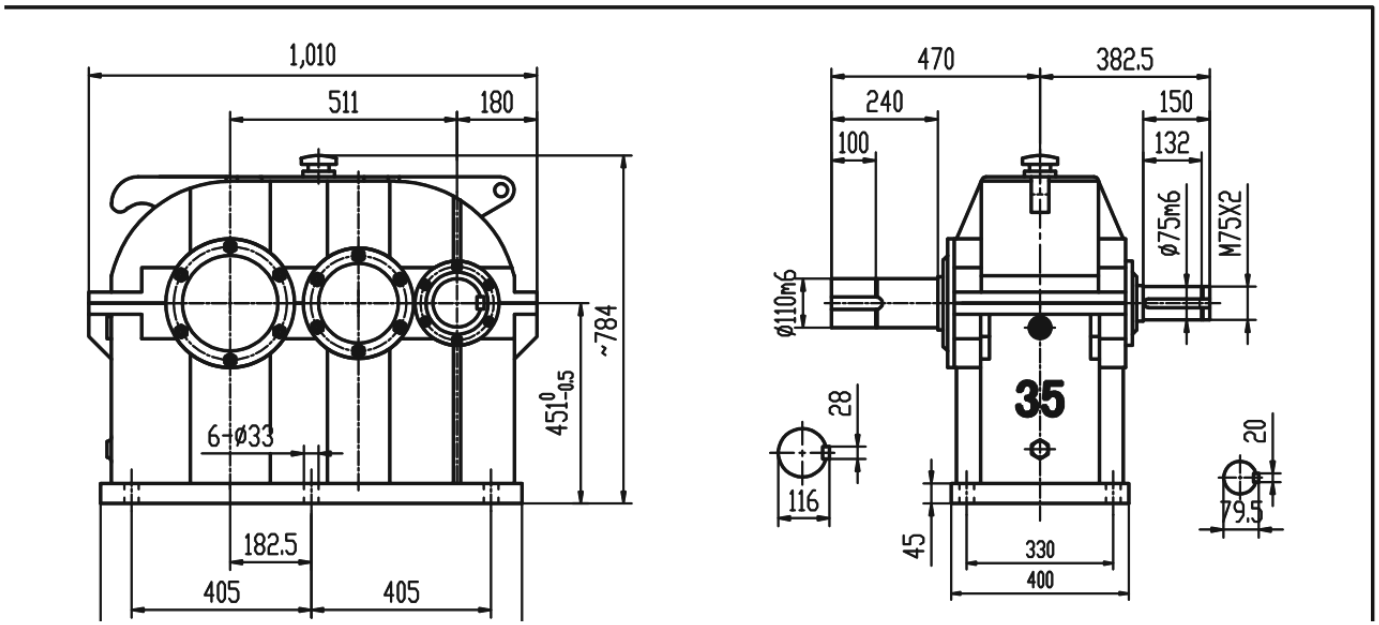
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

YM35 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
45 kW	750 rpm	16:1

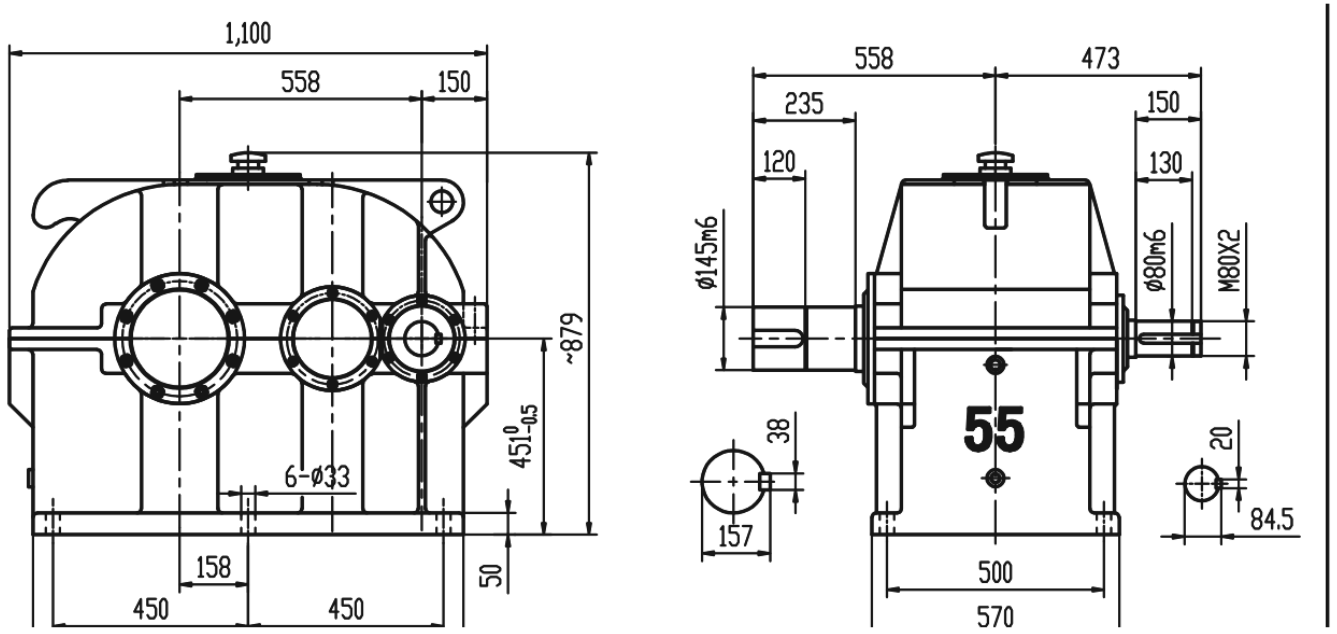
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

YM55 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
75 kW	750 rpm	15:1

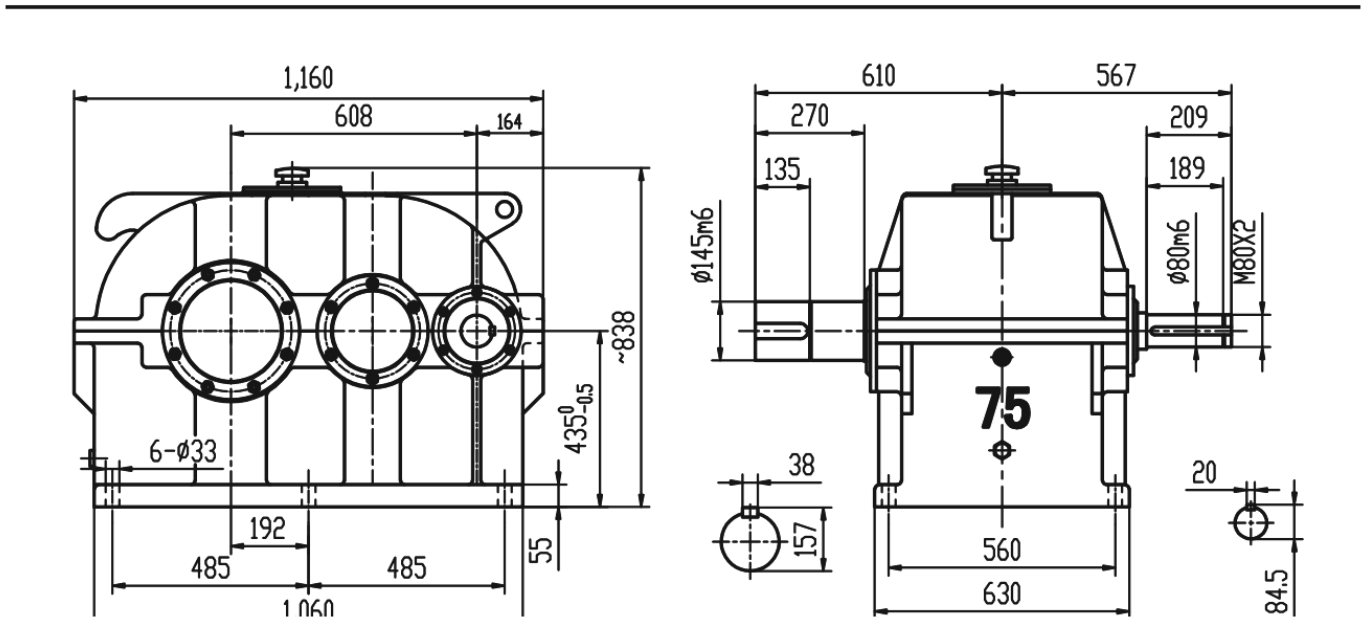
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

YM75 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
110 kW	750 rpm	16:1

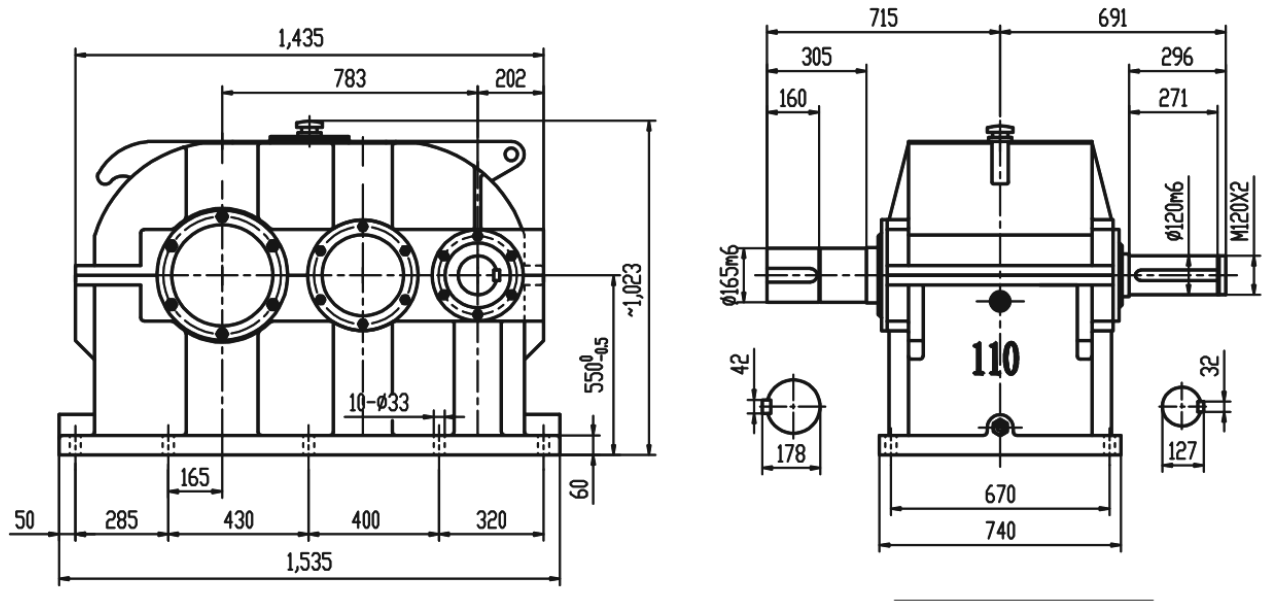
The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

ML / YM GEARBOX DIMENSIONAL REFERENCE

YM110 - Outline & Installation

Front/side dimensional views (mm). The original numerical drawing geometry is retained and should be checked against an approved production drawing.

DIMENSIONAL DRAWING | mm



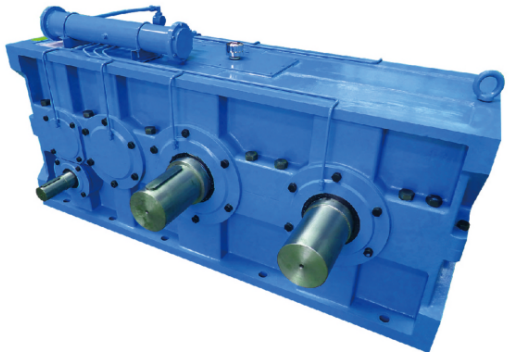
SOURCE INPUT POWER	SOURCE INPUT SPEED	SOURCE GEAR RATIO
185 kW	750 rpm	16:1

The values above reproduce an example configuration from the historical source. Contact KNGEAR to verify the correct power rating, service factor, ratio, load capacity and drawing revision.

SPECIALIZED RUBBER-PROCESSING GEARBOXES

SK (XK) & XM - Mixer Drives

Application-specific output arrangement and size nomenclature reproduced from the supplied source.

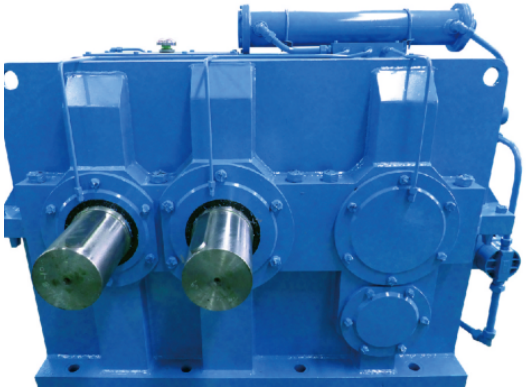


SK (XK) Open Mill Gear Reducer

Nominal sizes: 400, 450, 560, 585, 610, 660, 760

The source describes an open-mill drive gearbox with twin output shafts for rolls, gear-driven torque distribution and an oil-lubricated enclosed housing.

Source does not provide rated torque or a certified model-specific installation drawing for this section.



XM Internal Mixer Gear Reducer

Nominal sizes: 325, 360, 420, 435, 440, 450, 500

Reducer for enclosed rubber mixing machinery, with two power outputs intended for the mixer rotor system.

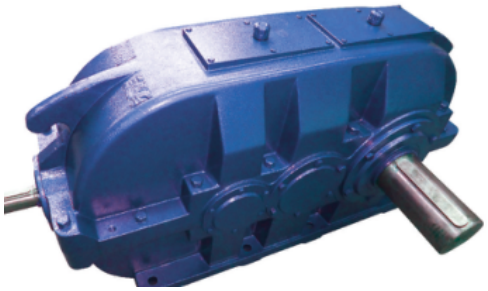
Source does not provide rated torque or a certified model-specific installation drawing for this section.

ADDITIONAL PORTFOLIO

Related Industrial Gear Reducers

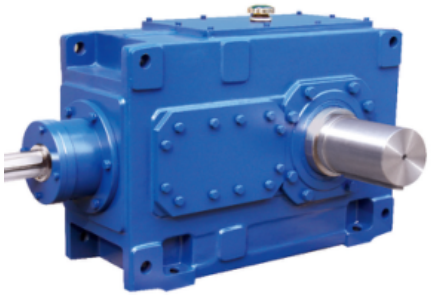
Helical cylindrical

Application-specific configuration



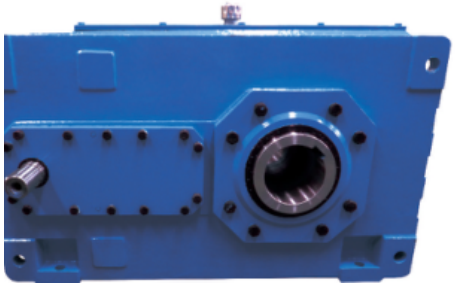
Bevel-helical

Application-specific configuration



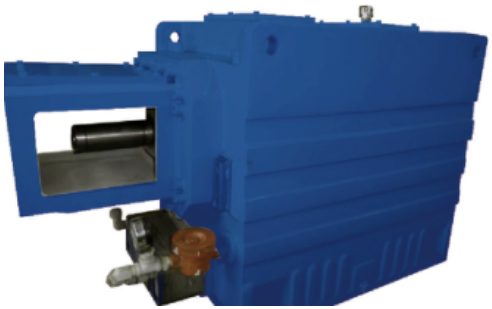
B series right-angle

Application-specific configuration



H series parallel-shaft

Application-specific configuration



SPJY special mixer drive

Application-specific configuration

BJY high torque drive

Application-specific configuration

TECHNICAL PROPOSAL

Engineering Inquiry Checklist

To receive an accurate selection or replacement proposal, please include available drawings and operating conditions.

Duty & application

Machine type, duty cycle, start/stop frequency and load characteristics.

Input conditions

Motor power, speed, coupling requirements and motor arrangement.

Output requirements

Required speed or ratio, nominal/peak torque and permitted shaft loads.

Mechanical interface

Envelope constraints, mounting dimensions, shaft/bore fits and any reference drawing.

Lubrication & cooling

Ambient temperature, oil systems, available cooling water and site utilities.

Replacement cases

Existing unit maker, model, serial/nameplate, photos, gear ratio and interface sizes.

KNGEAR | Industrial Gearboxes & Custom Reducers

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