



DŜl-NŜŘ ŃŜNŮZ YzŮzNă

Эрллп . к Yурл ōŠŮŠt ЭŜl-NŜŘ ŃŜNŮZ YzŮzN

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About this document

Document description

ϕKlă R20dzYŠyú I-RŔNlŠăăŠă ú2 I-ff LjŠNă2yă ōK2 ōI-yú ú2 ŌI-NNĚ 2dzú I-yě Ō2yŦlJdzNl-ú2yă ōlúK úKŠ
LJNl2RdzŌúă RŠăŌNlJúúŌŠŔ

ϕKŠ ŔI-úI- I-yŔ lYT2NlYI-ú2yŦŌ2YlJlŦŠŔ lYúKlă R20dzYŠyú äŠNŌŠ ú2 ädzLJLJ2Nlú ě2dz lYúKŠ ŔlYŠyă2ylyŦ
I-yŔ äŠŦŌú2yŦLJNl2ŌŠăăŠă I-yŔ lYŌI-NNĚlyŦ 2dzú úKŠ ŠŦŌúNlŌI-Ŧ I-yŔ YŠŌKI-yŦŌI-Ŧ lYăúI-ŦŦI-ú2yŦ , 2dz ōlŦŦ
NlŠŌŠlŌŠ lYT2NlYI-ú2yŦNlŠŦI-NlŔlyŦ LJNl2RdzŌú ŠĚúŠyă2yă I-yŔ I-ŌŌŠăă2NlŠă

- ϕKŠ R20dzYŠyú lYŌŦdzRŠă äI-ŦŠúě lYăúNlJdzŌú2yă ōKlŌK Ydzăú ōŠ 2ōăŠNlŌŠŔ
- ! ff LjŠNă2yă ō2NllyŦ 2yI-yŔ ōlúK úKŠ ŔNlŌŠă Ydzăú Kl-ŌŠ úKŠ R20dzYŠyúI-ú2yŦI-ú Kl-yŔ RdzNllyŦ
ō2Nl I-yŔ 2ōăŠNlŌŠ úKŠ lYT2NlYI-ú2yŦI-yŔ y2úŠă NlŠŦŌI-yú Ŧ2Nl lú
- ϕKŠ R20dzYŠyúI-ú2yŦYdzăú I-ŦŌI-ěă ōŠ Ō2YlJŦŠúŠ I-yŔ lYI- LjŠNlŦŠŌúŦě NlŠI-ŦI-ŦŦŠ äúI-úŠ

Further documents



lYT2NlYI-ú2yŦI-yŔ ú22Ŧă ōlúK NlŠŦI-NlŔ ú2 úKŠ [ŠyŦŠ LJNl2RdzŌúă ŌI-yŦŌŠ Ŧ2dzYŔ 2yúKŠ
lYúŠNlYŠúŦ
[Ō Ō Ō \[ŠyŦŠŌŌ2Y](#) → 52ōyŦ2I-Ră

/ 2y0Šyú12yā I·NŠ džaŠŘ 1yúKlā R20dzYŠyú ú2 Řlāú1y3dzlāK ōŠú0ŠŠyŘ1††ŠNŠyú üēLŠā 2† 1y†2N†Y†ú12y0

Layout of the safety instructions

LyRlŌl-ŭšā I-y ŠēŭŭŭSYŠřē Kl-Ōl-Nŕē dzā ālŭŭl-ŭāzy^o Cl-āfēdzŭS ŭ2 ō2YlJřē ō lŭK ŭKā āyāŭŭdzōŭāzy ō āfē ŭSādztŭ
āy āšōSŭS ANŭŭSLJl-Nl-ōfS āydzŭdzē I-yŕ ŠōSYŕŠl-ŭK^o

[illegible]

LyRlŌl-ŭŠā I- K l-Ŧl-Ŧl-NŦR2dzā ālŭdzl-ŭā2y^o Cl-ŦdzlNŦŠ ŭ2 Ō2YlŦfē ōlŭK ūKā lyaŭlNdzōŭā2yYl-ē NŦŠādzŭt lyāŦlŦK ŭ2 YŠŦl dzY lyvzdzlŦē

LýRǾlŕúŠā ĩ Yĭ-úŠNŪl-f KI-îĭ-NŔř CI-lfēdzNŨS ūz ōZŸLJřē ØłÚK úKlā λyáúNdzŎžalZyYĭ-ē NŨŠadzŭ λyYĭ-úŠNŪl-f
Řĭ-Yĭ-EŠŦ





Identification of the products

Gearbox product name

Gearbox type	Product series		Type	Rated torque Nm	Product
. Š0Št 3ŠI·úö2Ě	Эрлл	π	.	пр	Эрллπ . пр
				ммл	Эрллπ . ммл
				нпл	Эрллπ . нпл
				прл	Эрллπ . прл
				слл	Эрллπ . слл
				унл	Эрллπ . унл
				мрлл	Эрллπ . мрлл
				нтлл	Эрллπ . нтлл
				полл	Эрллπ . полл

Product name: m850 synchronous servo motor

Product range		Version	Flange height		Overall length	Rated speed	Motor
			mm			rpm	
Үурл	π	{ öäëyÖKú2y2dzäú	мнл	ädz LJLJē è	{ öäK2úúú	офсл	Үурлπ{мнлк{офсл
					a öYŠŘlđzYú	офсл	Үурлπ{мнлк a офсл
					[öf2y3ú	офсл	Үурлπ{мнлк[офсл
			мпл		{ öäK2úúú	онпл	Үурлπ{мплк{онпл
					a öYŠŘlđzYú	онпл	Үурлπ{мплк a онпл
					[öf2y3ú	онпл	Үурлπ{мплк[онпл
			мфл		{ öäK2úúú	оллл	Үурлπ{мфлк{оллл
					a öYŠŘlđzYú	оллл	Үурлπ{мфлк a оллл
					[öf2y3ú	нрнл	Үурлπ{мфлк[нрнл



Features

ΦKŠ f2ff2Ÿly3 fλ3dzNŠ LJN2ŸλŘŠă I-y2ŸŠNŸλŠŸ 2f ŸKŠ ŠfŠYŠyŸă I-yŘ Ō2yyŠŌúλ2yă 2y ŸKŠ LJN2ŘdzÖúφ
ΦKŠNŸ LJ2ăλúλ2y2ă ŸλŸŠ I-yŘ I-LJLŠI·NŸI-yŌŠ YI·ë ŌI·NŸφ

Ventilation

ŌŘŠLJŠyŘly3 2y ŸKŠ Y2dzyŸly3 LJ2ăλúλ2yŸ

Oil filler plug

ŌŘŠLJŠyŘly3 2y ŸKŠ Y2dzyŸly3 LJ2ăλúλ2yŸ

Remove oil control plug

ŌŘŠLJŠyŘly3 2y ŸKŠ Y2dzyŸly3 LJ2ăλúλ2yŸ

Oil drain plug

ŌŘŠLJŠyŘly3 2y ŸKŠ
Y2dzyŸly3 LJ2ăλúλ2yŸ

Housing type

Torque plate mounting

Temperature monitoring

Motor connection

Cooling

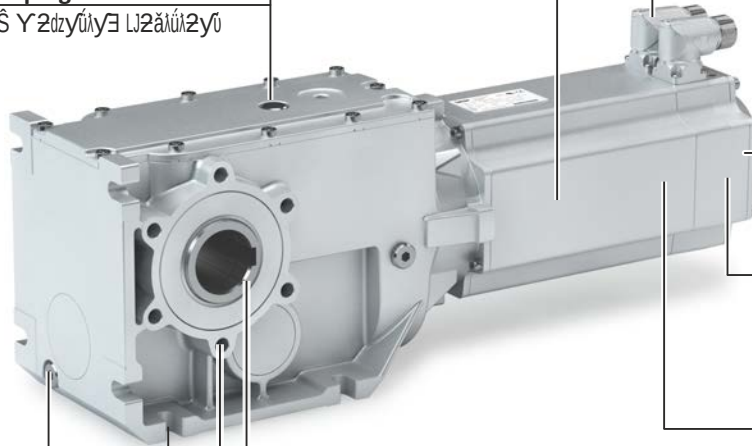
Feedback

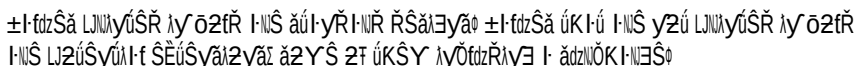
Spring-applied brake

Output shaft

Output flange

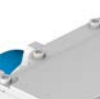
Torque plate mounting



[illegible]

[illegible]

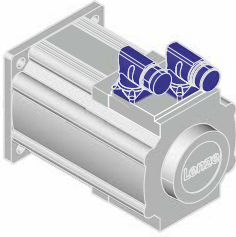
► [çKŜ YzŘdzfI-NJ äëǎŝY](#) мл



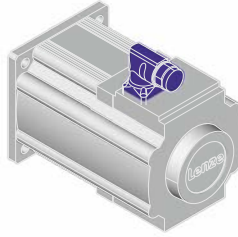
MH



Models at the output
Motor connection

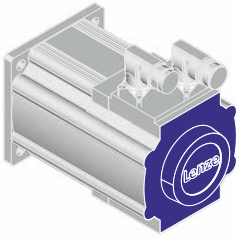


L / b ōzyyŠōú2N

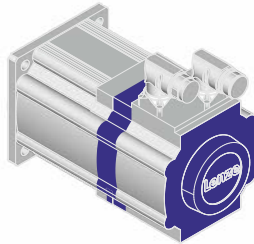


L / b KëöNÄR ōzyyŠōú2N τ2N hyŠ / I·ōtŠ
 ϕŠōKy2τ23ë ôh / ϕú

Cooling: Self-ventilated



cŠŠRōI·ōI



cŠŠRōI·ōI I·yR ôN·I·Š

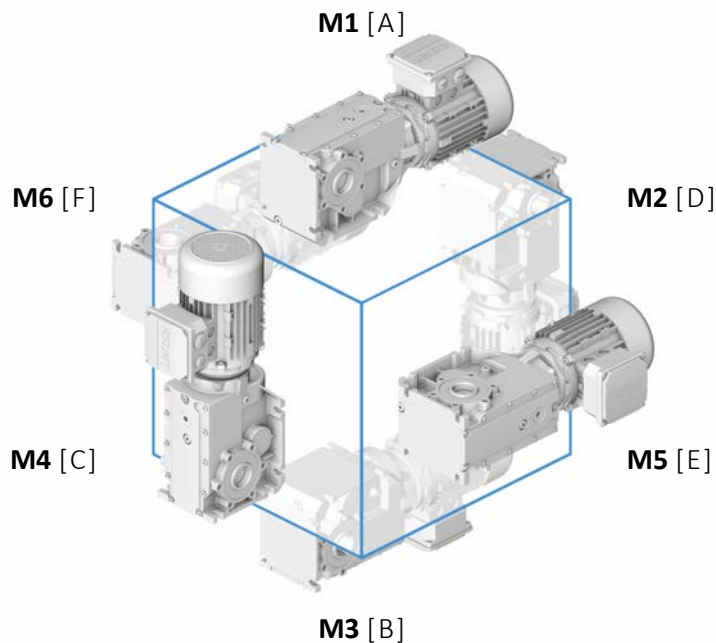


Mounting positions

5SüI-æä 2f üKS Y2dzyüly3 Lj2äüü2y I-üS ySŠRŠR ü2 ŠyãdzNŠ üKS Ö2NüNŠäLj2yRly3 fdzöNüäÖI-yü I-Y2dzyüS
 Lj2äüü2y 2f üKS ÖSyüfI-ü2y2 2f ÖKSÖIä I-yR 2f RlI-lyLj2dz 2y üKS 3S I-Nö2E

Ф2 NŠRdzÖŠ üKS yüzyöSü 2f RlIffSüSyü ÖSüäü2yã üKS 3S I-Nö2EŠä ÖI-y I-æä öS 2NŠRŠRŠR ŠäüK ÖzyölyŠR
 Y2dzyüly3 Lj2äüü2yã

- Эрлпπ . ммл φφφ . прл ly Y2dzyüly3 Lj2äüü2y a мкркс ö!9Cö

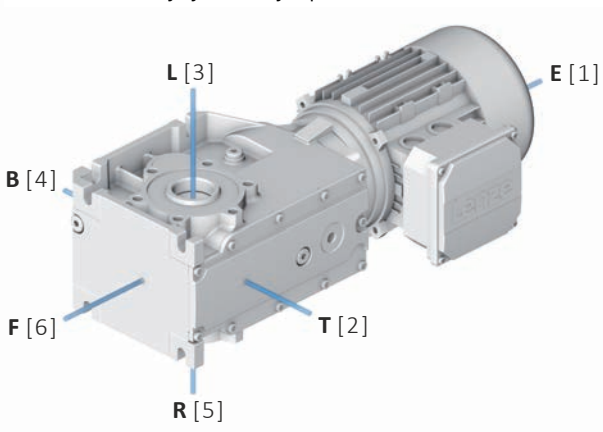
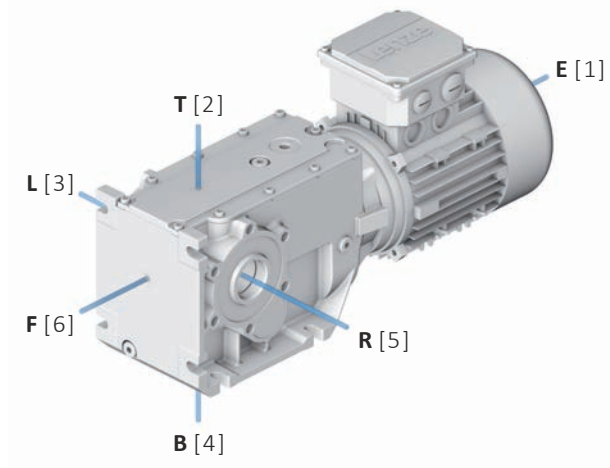


Defined positions on the geared motor

I ff 2f üKS RŠlyŠR Lj2äüü2yã NŠfSü ü2 üKS I-üS I-ä 2y üKS 3S I-üS Y2ü2ü ly
 Y2dzyüly3 Lj2äüü2y M1 (A) φ
 t2äüü2y 2f üKS ödzlIü2y I-ÖÖŠäa2NŠä ŠäüK φ [I wŠ . I Ö 9 öφ2LŠ [Šfö
 wI3KüS . 2ü2YI Cü2yü I-yR 9yRü

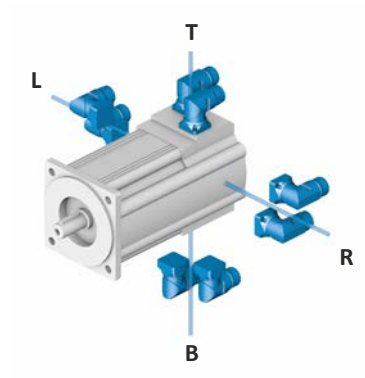
I f üKS 3S I-üS Y2ü2ü ä NüI-üS lyü2 I RlIffSüSyü Y2dzyüly3 Lj2äüü2y
 aH φφ ac ö . φφCüS üKS RŠlyŠR Lj2äüü2yã 2y üKS 3S I-üS Y2ü2ü I-üS
 NŠfI-lyŠRφ

9E I-YLİfSY a 2dzyüly3 Lj2äüü2y ap ö9ü





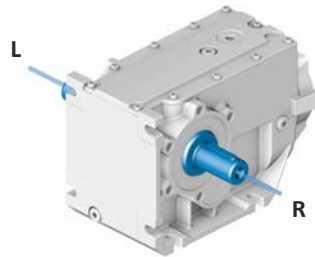
Position of the ICN connectors



Position of the solid shaft



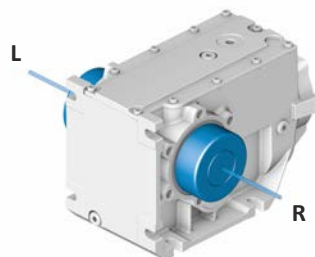
52dzöfŠπŠyŘŠŘ 2dzúLJdzú äKI·τú 2dzNlyI·f h[τw_hφ



Position of the hollow shaft with shrink disc



hdzúLJdzú τfI·y3S I·yŘ äK_Nly_l Ř_λäÖ I·NŠ y2ú LJ2ää_λöfŠ λy'úKS äI·YŠ LJ2äúλ2yφ

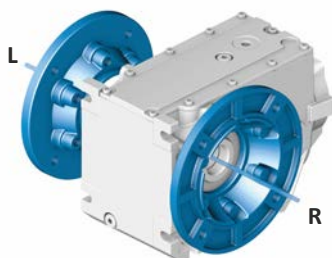




Position of the output flange

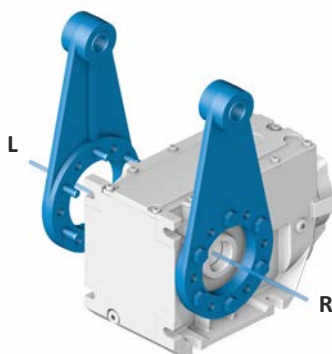


h dzüLjdzü Tfi-y3Š 2y 02úK äRŠä h[bw h

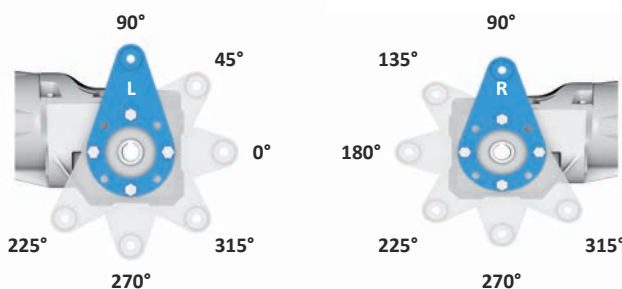


Position of the torque plate on the threaded pitch circle

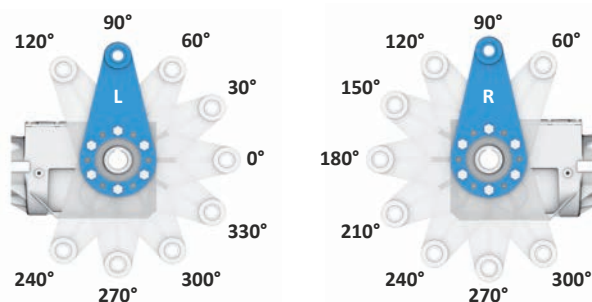
t2äüü2y2T úKŠ ü2NljdzŠ Ljfi-üŠ



!y3tŠ 2T úKŠ ü2NljdzŠ Ljfi-üŠ
 Эрлнл. нр 000 . ммл



Эрлнл. нлл 000 . мрлл

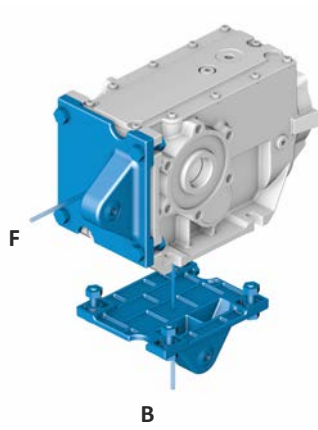




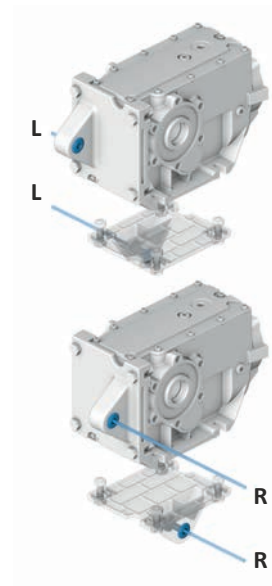
tN2ŘdzÖú λyτ2NΥI·úλ2y
 ϕKS Y2ŘdzτI·N äëäúSŸ
 a 2dzŸúλy3 LJ2äúλ2yă

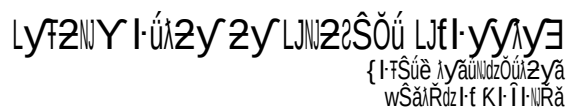
Position of the torque plate on the housing foot

t2äúλ2y2τ úKS ú2NljdzS LJτI·úS



t2äúλ2y2τ úKS NdzöösN ödzτSŸ 2yúKS ú2NljdzS LJτI·úS





- [illegible]



Gearbox protection

- 9ÈÖŠääλØŠ ØλöNVI·úλ2yI·ÖÖŠfŠNVI·úλ2yã I·yŘ NŠã2yI·yÖŠã Øλff ŘI·YI·EŠ úKŠ EŠI·NÖ2È
 - 52 y2ú 2LJŠNVI·úŠ úKŠ EŠI·NÖ2È I·ú ØλöNVI·úλ2yI·ÖÖŠfŠNVI·úλ2yã ħ н Э öhl Ykäʰú 2f úKŠ YI·ÖKIyŠ
 - 52 y2ú 2LJŠNVI·úŠ úKŠ EŠI·NÖ2È IyúKŠ NŠã2yI·yÖŠ NVI·yEŠ 2f úKŠ YI·ÖKIyŠ
- 9ÈÖŠääλØŠ ú2NVIjdzŠã Øλff ŘI·YI·EŠ úKŠ EŠI·NÖ2ÈŠã
 - 52 y2ú ŠEÖŠŠŘ úKŠ 2dzúLJdzú ú2NVIjdzŠã äLJŠÖλfIŠŘ 2yúKŠ yI·YŠLJfI·úŠ
- 9ÈÖŠääλØŠ IyLJdzú äLJŠŠŘã fŠI·Ř ú2 IyÖNŠI·ãŠŘ úŠY·LJŠNVI·údzNŠã
 - 52 y2ú ŠEÖŠŠŘ úKŠ IyLJdzú äLJŠŠŘã äLJŠÖλfIŠŘ 2yúKŠ yI·YŠLJfI·úŠ
- !Ø2λŘ ŠEÖŠääλØŠ fI·úŠNVI·f f2NÖŠã 2yúKŠ EŠI·NÖ2È äKI·fú
 - !Ø3yúKŠ äKI·fúã 2f úKŠ EŠI·NÖ2È I·yŘ ŘNλØŠyYI·ÖKIyŠ ŠÈI·Öúfè ØλúK ŠI·ÖK 2úKŠ
- aI·ÖKIyŠ ŠfŠYŠyúã ØI·yöŠ ŘI·YI·EŠŘ öè I·fI·ÓI 2f fdzöNλÖI·yú
 - a2dzúú úKŠ EŠI·NÖ2È 2yfè IyúKŠ Y2dzúúIy3 LJ2äλú2yIyŘλÖI·úŠŘ 2yúKŠ yI·YŠLJfI·úŠ
 - ² KŠyÖKI·y3Iy3 úKŠ fdzöNλÖI·yú dzãŠ úKŠ fdzöNλÖI·yú üèLJŠ I·yŘ IjdzI·yúúüè äLJŠÖλfIŠŘ 2yúKŠ yI·YŠLJfI·úŠ



General information

NOTICE

C2N 3S I-NÖ2EŠä ØLÜK K2ff2Ø AKI-TÜ I-yR äKNLYL RläI

2öäŠNÖŠ ÜKŠ T2ff2ØLYY NŠIjdzANUSYŠYÜä T2N ÜKŠ Y I-ÖKLYŠ AKI-TÜY

- ▶ CÄÜ Ü2fŠN I-yÖŠ Kc
- ▶ a I-ÜŠN I-f ÈIŠfR äÜNŠYÜK WŠ Ж осл a t I
- ▶ a 2Rdzfdzä 2T ŠfI-äÜÖLÜÈ I-LJLJN2EΦ нмлллл a t I
- ▶ {dzNFI-ÖŠ N2dzEKYŠä wI Ж mp >Y
- ▶ b2 N I-RÄI-ET I-ÈÄI-f T2NÖŠä I-yR T2NÖŠä RdzŠ Ü2 äÜNŠääKN2Ü I-ÜL2Y LJŠNYLääLÖfŠ

Thermal power limit

CKŠ ÜKŠNY I-f LJ2ÖŠN TLYÜZ RŠfLYŠR öÈ ÜKŠ KŠ I-Ü Ö I-f I-yÖŠ TLYÜä ÜKŠ LJŠNYLääLÖfŠ Ö2YÜLYÖZdzä 3S I-NÖ2E LJ2ÖŠN LÜ LÄ I-TTŠÖÜŠR öÈ

- ÜKŠ ÖKdzNLYY T2äŠä LYÜKŠ fdzÖNÄÖ I-yÜ CKŠäŠ I-NŠ RŠÜŠNYLYŠR öÈ ÜKŠ Y2dzYÜLYY LJ2äLÜL2Y I-yR ÜKŠ ÖNÖdzYTŠNŠYÜ I-f äLJŠŠR 2T ÜKŠ 3S I-Nä
- ÜKŠ T2I-R I-yR ÜKŠ äLJŠŠR äLJŠÖÜNdzYΦ
- ÜKŠ I-YÖIŠYÜ Ö2YRÜL2YäY ÜSYLJŠN I-ÜdzNŠ I-NÖ ÖNÖdzf I-ÜL2Y LYLJdzÜ 2N RlääLJ I-ÜL2Y 2T KŠ I-Ü ØÄI- AKI-TÜä I-yR ÜKŠ T2dzYR I-ÜL2YäΦ

NOTICE

! ÜKŠNY I-f ÖKŠÖI ØLÜK ÜKŠ 5NÄÖŠ {2fdzÜL2Y5ŠäLYŠN Ö5{5Ü 2N Ö2YÜ I-ÖÜLYY È2dzN [ŠYfŠ NŠLJNŠäSYÜ I-ÜLÖŠ LÄ NŠIjdzANUSR LT

- ▶ ÜKŠ LYLJdzÜ äLJŠŠR Ym 5 мрлл NLYY LÄ T I-fTŠYÖŠf2Ø LYÖ I-äŠ 2T ÜKŠ 3S I-NÖ2E N I-ÜL2ä 3NÖŠYLYÜKŠ T2ff2ØLYY
- ▶ ÜKŠ RÜNÖŠ äLJŠŠRä YŠYÜL2YŠR LYÜKŠ T2ff2ØLYY ØLff ÖŠ ŠEÖŠŠRŠR I-ä I- TdzYÜL2Y 2T ÜKŠ Y2dzYÜLYY LJ2äLÜL2Y C2N I- äK2NÜ LJŠNÄ2R 2T ÜLYŠ dzLJ Ü2 p YLYZ oA. KÄKŠN äLJŠŠRä I-NŠ LJŠNYLääLÖfŠ
- ▶ ÜKŠ I-YÖIŠYÜ ÜSYLJŠN I-ÜdzNŠ LÄ LJNŠR2YLYI-yÜÈ I-ö2ÖŠ бол c / Φ

Gearboxes	Ratio i
Эрллл . мрлл ΦΦ . полл	Ж рл

Motor	Mounting position M1	Mounting position M3, M5, M6	Mounting position M2, M4
Yyрлл{мнл	лллл NLYY	орлл NLYY	оллл NLYY
Yyрлл{мплл{мфл	оллл NLYY	нслл NLYY	мрлл NLYY

Possible ways of extending the application area

- {KI-TÜ äŠI-TLYY NLYY Y I-RŠ 2T CY a Y I-ÜŠN I-fk±LÜ2Y Ö2LJÜL2YÜ
- WŠRdzÖLYY ÜKŠ fdzÖNÄÖ I-yÜ I-Y2dzYÜ Ö I-TÜŠN Ö2YädzTÜ I-ÜL2Y ØLÜK [ŠYfŠÜ
- /22fLYY ÜKŠ 3S I-NŠR Y2Ü2N öÈ I-NÖ Ö2YÖŠÖÜL2Y2YÜKŠ Y I-ÖKLYŠkääÜSY

[illegible]

ϕKŜ ŔŀYŜŷăł2yŀvŷ łă ädzłúŀ-ôŦŜ Ŧ2ŀŀ ūKŜ 2LJŜŀŀ-ŭŀvŷ Y2ŔŜă {mŦ {hŦ {o ŀyŔ {c

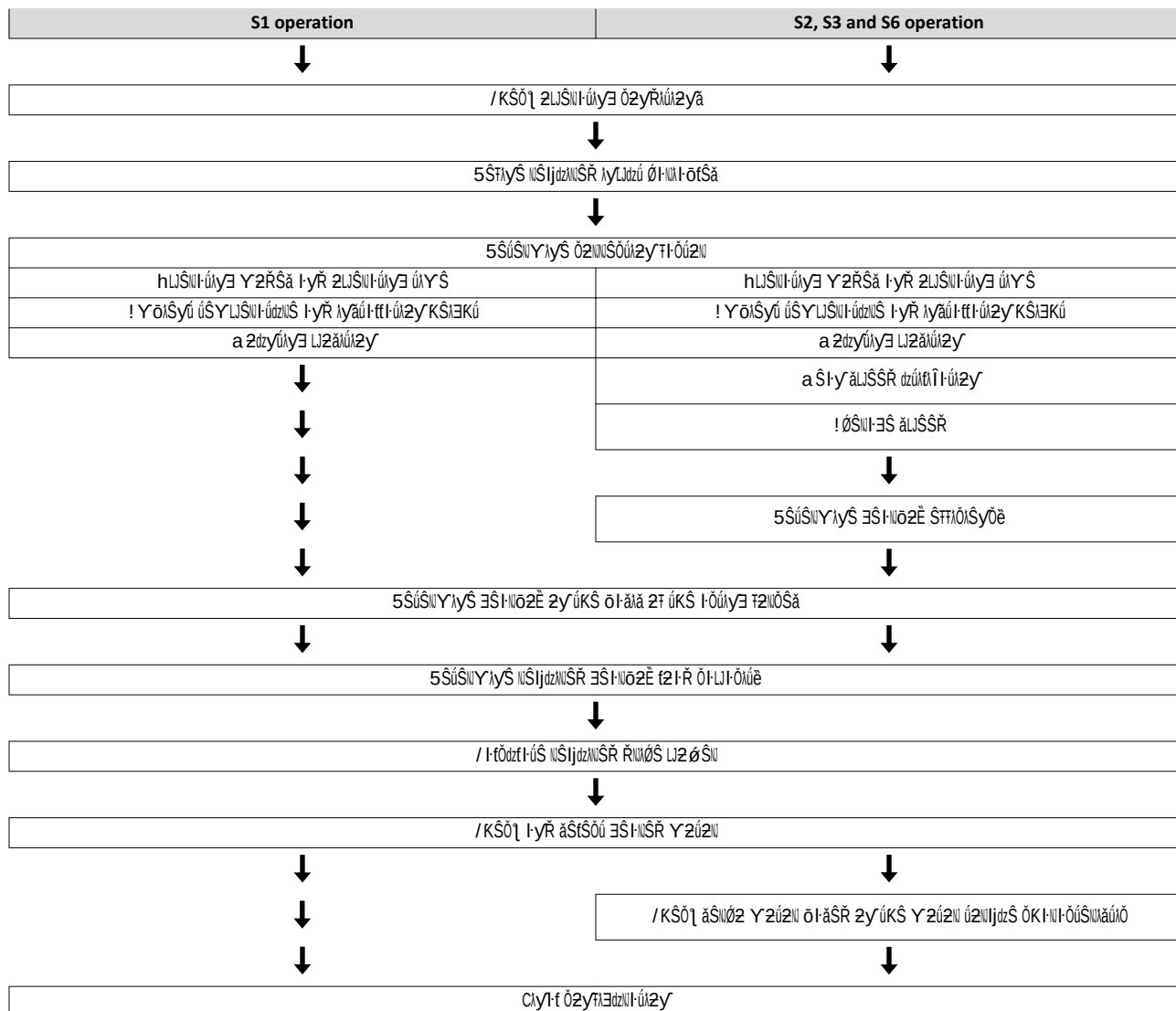
ϣKŜ YŜI-VăLJŜŜR 2T ũKŜ RŃXŃŜăK2dzŃR v2ú SÊŃŜŜR ũKŜ ØI-fdzŜăăLJŜŃTŃŜRϣ



LT RlYŶSyāi2yly3 LJWZÖŠāāŠā I-NŶ Ö2YJfSĖ 2W NJŶŶÖK tlyłú f2I-Rāš LJfŠI-fāŠ WŠfŠW ū2 ě2dzW
[ŠVŶŠ ōWl-yÖK 2fflÖŠ



Workflow



Check operating conditions

Check
! LJLJN2Ō I-tā
/2yŮ2N YŮIŠā
{ dzLJLJē Ō2Ů I-ŮŠ
5ŠŠNŠŠ 2Ů LJN2ŮŠŮŮ2y
! YŌiŠyŮ ŮŠY LjŠN I-údzNŠ
{ dzNŮ I-ŮŠ LJN2ŮŠŮŮ2y

- ▶ { Ů IyŘ I-ŮŮā IyŘ 2LJŠN I-úlyy Ō2yŘŮ2yā } no
- ▶ { dzNŮ I-ŮŠ IyŘ Ō2NŮ2ā2y LJN2ŮŠŮŮ2y } HΦ



Define required input variables

Necessary input variables	Note	Symbol	Unit
hLŠWf-ÚIY3 ÚIYŠKRIë		.5	K
aŠI-yäLŠŠR dzuŋI f-ÚI2Y2f ÚKŠ ŠŠHŠŠR Y2Ú2W	wŠfI-ÚIY3 Ú2 ÚKŠ f2I-Ŕ äLŠŠR y _I		äz
!YöIŠyŮ ŮŠYLŠWf-ÚdzWŠ		$\phi_{\pm}$	c/
{LŠŠ I-fŮÚdzRŠ !Yäť		I	Y
wI-ŔI-f f2WÖŠ		$C_{WI-Ŕ}$	Wf-ÚŠR
!EäI-f f2WÖŠ		C_{I-E}	Wf-ÚŠR
ŮWf-yäYääI2Y ŠtŠYŠyŮ I-Ů ÚKŠ 2dzŮLdzŮ	DŠfW ŠKŠŠfäz äLWZÖŮŠÜä X		
9fTŠÖÜ0Š RŮI-YŠÜŠW 2f ÚKŠ ŮWf-yäYääI2Y ŠtŠYŠyŮ		$\ddot{R}_2$	YY
[2I-Ŕ Ů2WJdzŠ	hyfë ŠŮK {Mz {Hz {Oz I-yŔ {c 2LŠWf-ÚIY3 Y2ŔŠä	a_I	bY
[2I-Ŕ äLŠŠR	hyfë ŠŮK {Mz {Hz {Oz I-yŔ {c 2LŠWf-ÚIY3 Y2ŔŠä	y_I	WJY
{K2WŮÜIYŠ YI-EäYdzY Ů2WJdzŠ	9YŠWŠyŮë 2fŤ IjdzŮŮ äÜ2LJZ 2ÖŮI-äI2YI-f KJŠK äŮI-WÜIY3 ŔdzŮë	a_{IYI-E}	bY
wäzyŮIYŠ ŠŮK YI-EäYdzY Ů2WJdzŠ		$\dot{u}_I$	äz

Determine correction factor

Operating modes S1, S2, S3, S6, and operating time							
Operating mode S1		Operating mode S2		Operating mode S3		Operating mode S6	
ED	k_I	ED	k_I	ED	k_I	ED	k_I
%		min		%		%	
MЛЛ	MӨЛ	мл	MӨП π MӨP	мр	MӨП π MӨP	мр	MӨP π MӨC
		ол	MӨMP π MӨH	нр	MӨO π MӨП	нр	MӨП π MӨP
		сл	MӨЛТ π MӨМ	пл	MӨMP π MӨH	пл	MӨO π MӨП
		фл	MӨЛ π MӨлр	сл	MӨлр π MӨМ	сл	MӨMP π MӨH

► hLŠWf-ÚIY3 Y2ŔŠä 2f ÚKŠ Y2Ú2W 

Ambient temperature and installation height		
Ambient temperature	Installation height amsl	
	≤ 1000 m	≤ 2000 m
	Correction factor	
T_I	k_I	k_I
Ж нл с/	MӨMЛ	MӨлП
ол с/	MӨлP	MӨлЛ
пл с/	MӨлЛ	лӨфP
рл с/	лӨул	лӨтC
сл с/	лӨCЛ	лӨPТ

Mounting position						
Gearboxes	Mounting position					
	M1	M2	M3	M4	M5	M6
	Correction factor					
	k_g	k_g	k_g	k_g	k_g	k_g
ЭрллП I	MӨлЛ	лӨТЛ	лӨул	лӨул	MӨлЛ	MӨлЛ
ЭрллП{	MӨлЛ	лӨТЛ	лӨул	лӨур	лӨул	лӨфЛ
ЭрллП .	MӨлЛ	лӨТЛ	лӨул	лӨул	лӨул	лӨул

► {ŠtŠÖÜ2YŮI-ÖŤŠä 



Mean speed utilisation					
Daily operating time	Mean speed utilisation relating to the load speed n_L				
	100 %	80 %	60 %	50 %	25 %
	Correction factor				
	k_b	k_b	k_b	k_b	k_b
мѠ К	мѠнѠ	мѠоо	мѠоу	мѠпн	мѠрр
нѠ К	мѠмр	мѠнл	мѠнр	мѠнѠ	мѠпн
оѠ К	мѠлу	мѠмн	мѠмт	мѠнм	мѠоп
пѠ К	мѠлн	мѠлс	мѠмн	мѠмр	мѠнѠ
рѠр К	лѠѠс	мѠлл	мѠлс	мѠлѠ	мѠнн
уѠ К	лѠуѠ	лѠѠо	лѠѠѠ	мѠлн	мѠмр
мнѠ К	лѠум	лѠур	лѠѠм	лѠѠп	мѠлу
мсѠ К	лѠтс	лѠул	лѠур	лѠуѠ	мѠлн
ннѠ К	лѠтм	лѠтс	лѠум	лѠур	лѠѠу
нпѠ К	лѠсу	лѠтн	лѠту	лѠум	лѠѠп

Mean speed					
Operating mode S2		Operating mode S3		Operating mode S6	
ED	k_a	ED	k_a	ED	k_a
min		%		%]	
мл	лѠмс	мр	лѠмр	мр	мѠлл
ол	лѠрл	нр	лѠнр	нр	
сл	мѠлл	пл	лѠпл	пл	
Ѡл		сл	лѠсл	сл	

Gearbox efficiency

Gearboxes	Gearbox efficiency	
	η_{0m}	
Эрллп.		
нпѠѠ-ѠŠ	лѠѠс	
опѠѠ-ѠŠ	лѠѠр	
ппѠѠ-ѠŠ	лѠѠп	

Determine product on the basis of the forces

Transmission element			Gear wheels	Sprockets	Toothed belt pulleys (depending on the pretension)	Narrow V-belt (depending on the pretension)
! ŘŘŁŁ2YŁf ŁŁŘŁŁf Ł2ŁŮŠ ŁŁŮ2ŁŁ	τ _½		Ж мт ŮŠŠŮKY мѠл	Ж нл ŮŠŠŮKY мѠл	² ŁŮK ōŠŮŮ ŮŁKŮŠYŠŮŁŁ нѠл с нѠр	мѠр с нѠл
			Ѡ мт ŮŠŠŮKY мѠмр	Ѡ нл ŮŠŠŮKY мѠнр	² ŁŮK2ŁŁŮ ōŠŮŮ ŮŁKŮŠYŠŮŁŁ нѠр с оѠл	
				Ѡ мо ŮŠŠŮKY мѠп		
				Calculation		Check
wlŘŁŁf Ł2ŁŮŠ	C _{нР}	b	C _{нР} = нллл × $\frac{a_{ŁYŁŁ} \times \tau_{Ł}}{\text{ŘŮ}}$		C _{нР} Ж τ ₂ Ě C _{нРŁYŁŁ}	
! ĚŁŁf Ł2ŁŮŠ	C _{ŁŁ}	b			C _{ŁŁ} Ж C _{нРŁYŁŁ} Ě лѠр	

ŘŮ 9ŁŁŠŮŮŠ ŘŁŁYŠŮŠ 2Ł ŮŁŁYŁŁŁŁ2YŠŁYŠŮŁŁ ŁYŁŁ
 τ_2 ! ŘŘŁŁ2YŁf Ł2ŁŘ ŁŁŮ2ŁŁ
► wlŘŁŁf Ł2ŁŮŠŁ ŁYŘ ŁĚŁŁf Ł2ŁŮŠŁ ŁŁŁŁ

Define the required load factor at runtime t_l		
wdzyóilYŚ ú _l ʒ _l M _l A _l z	c _l -l _l Ś ú _l K _l f ₂ l-R _l T _l -ó _l ú ₂ W _l l _l T _l W ₂ Y _l R _l l-E _l W _l -Y _l l _l y _l ú ₂ l-ó _l ú ₂ dz _l y _l	
wdzyóilYŚ ú _l ʒ _l M _l A _l z	c _l -l _l Ś l _l y _l ú ₂ S _l y _l á _l ú ₂ l _l T _l W ₂ Y _l ó _l l-f _l ó _l dz _l l-f _l ú ₂ Y _l l _l y _l ú ₂ l-ó _l ú ₂ dz _l y _l	
/ l-f _l ó _l dz _l l-f _l ú ₂ S _l y _l ú ₂ á _l ú ₂		
y ₂ l-f _l ú ₂ Ś _l W _l T _l -ú _l Y ₃ f ₂ l-R _l	$l_l \text{ } l' \text{ } a_{[lY]lE}^k \text{ } a_{l_l}$	$l_l \text{ } l'$
l-ú _l l-f _l ú ₂ Ś _l W _l T _l -ú _l Y ₃ f ₂ l-R _l	$l_l \text{ } l' \text{ } a_{[lY]lE}^k \text{ } a_{l_l} \text{ } \tilde{E}^{M \cap n}$	$l_l \text{ } l'$

Figure 1 is a graph showing the dependence of the parameter κ on the parameter t_l for different values of the parameter h (24 h, 16 h, 8 h). The y-axis is labeled κ and ranges from 0 to 1. The x-axis is labeled t_l and ranges from 0 to 1. The graph is divided into four regions labeled I, II, III, and IV. The curves are labeled with the parameter h and the parameter t_l . The curves show that κ increases with t_l and decreases with h .

Calculation of the required drive power			
	Calculation	Result	Unit
$h_{dzL} \cdot J_{dz} \cdot \dot{\omega}_{Lj} \cdot dS$	$a_w \cdot \kappa \cdot a_L \cdot \kappa \cdot \dot{\omega}_L \cdot \ddot{E} \cdot l_1 \cdot \dot{\omega}$	$a_w \cdot \Gamma$	bY
$h_{dzL} \cdot J_{dz} \cdot \ddot{\alpha}_L \cdot S \cdot R$	$\gamma_w \cdot \kappa \cdot \gamma_L \cdot \kappa \cdot l_g$	$\gamma_w \cdot \Gamma$	NLJY
$5 \cdot W \cdot \dot{\omega} \cdot S \cdot L \cdot J \cdot \dot{\omega} \cdot S \cdot W$	$t_w \cdot \kappa \cdot a_w \cdot \ddot{E} \cdot \gamma_w \cdot \kappa \cdot \phi \cdot p \cdot n \cdot \phi$	$l_w \cdot \Gamma$	l^2
Check geared servo motor and determine from the selection table			
	Check	Selection	Unit
$5 \cdot W \cdot \dot{\omega} \cdot S \cdot L \cdot J \cdot \dot{\omega} \cdot S \cdot W$	$t_m \cdot \kappa \cdot t_w$	$l_m \cdot \Gamma$	l^2
$h_{dzL} \cdot J_{dz} \cdot \dot{\omega}_{Lj} \cdot dS$	$a_H \cdot \kappa \cdot a_L$	$a_H \cdot \Gamma$	bY
$h_{dzL} \cdot J_{dz} \cdot \ddot{\alpha}_L \cdot S \cdot R$	$\gamma_{H \cdot W \cdot K} \cdot \kappa \cdot \gamma_L$	$\gamma_{H \cdot W \cdot K} \cdot \Gamma$	NLJY
$[2 \cdot F \cdot R \cdot \dot{\omega} \cdot L \cdot J \cdot \dot{\omega} \cdot S \cdot 2 \cdot F \cdot \dot{\omega} \cdot K \cdot S \cdot S \cdot F \cdot W \cdot S \cdot R \cdot Y \cdot 2 \cdot \dot{\omega} \cdot 2 \cdot W]$	$\ddot{\omega} \cdot \kappa \cdot l$ $\ddot{\omega} \cdot \kappa \cdot l_l$	$\ddot{\omega} \cdot \Gamma$	
$\{K \cdot 2 \cdot W \cdot m \cdot \dot{\omega} \cdot L \cdot Y \cdot S \cdot Y \cdot F \cdot \ddot{E} \cdot \gamma \cdot d \cdot z \cdot Y \cdot \dot{\omega} \cdot 2 \cdot W \cdot J \cdot d \cdot z \cdot S\}$			
$y \cdot 2 \cdot F \cdot \dot{\omega} \cdot S \cdot W \cdot y \cdot F \cdot \dot{\omega} \cdot L \cdot y \cdot 3 \cdot f \cdot 2 \cdot F \cdot R$	$a_{H \cdot Y \cdot F \cdot \ddot{E}} \cdot \kappa \cdot a_{[Y \cdot F \cdot \ddot{E}]}$	$a_{H \cdot Y \cdot F \cdot \ddot{E}} \cdot \Gamma$	bY
$F \cdot \dot{\omega} \cdot F \cdot \dot{\omega} \cdot S \cdot W \cdot y \cdot F \cdot \dot{\omega} \cdot L \cdot y \cdot 3 \cdot f \cdot 2 \cdot F \cdot R$	$a_{H \cdot Y \cdot F \cdot \ddot{E}} \cdot \ddot{E} \cdot m \cdot p \cdot \kappa \cdot a_{[Y \cdot F \cdot \ddot{E}]}$	$a_{H \cdot Y \cdot F \cdot \ddot{E}} \cdot \Gamma$	bY
$w \cdot F \cdot \dot{\omega} \cdot 2$		$\lambda \cdot \Gamma$	

HC



Operating modes S2, S3, and S6

Check geared servo motor and determine from the selection table

► {ŜfŜŏúłŻyúł·ōfŜă  pp

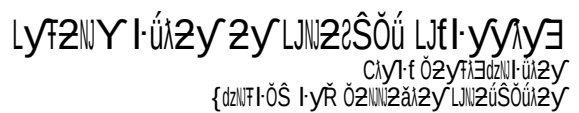
► [čZNIjdzŠ ŎKI·NI·ŎúŠNIăúłŎă](#) MOM

Order data			
	Ratio i	Geared motor	
9Э1-YLJtS	oHCT	Эрллп I мпл	Үурлп{мнлк{офсл
9Э1-YLJtS	oCCM	Эрллп{мол	Үурлп{мнлк{офсл
9Э1-YLJtS	п ⁴ ууф	Эрллп . нпл	Үурлп{мнлк{офсл

[illegible]

► ƆKŜ YzŖdzfI-Ŋ ăěăŭŜY  мл

► tŊzŖdzŎŭ ŜĖŭŝŷăŭzŷă  млн



±1N12dzā ādzNfT1ŌŠ ŌZ1-úyYā ŠyādzNŠ ūK1-ú ūKŠ Y2ú2Nā 2LJŠN1-úŠ NŠf1-ōfē ŠŌŠy1-ú K1EK 1-AN KdzY1āR1ūē ly
2dzūR22N lyāú1-fT1-ú2y2N lyūKŠ LJNŠāŠyŌŠ 2T 1-úY2āLJKŠN1Ō ūY1JdzN1ūLŠāŋ ! yē Ō2f2N fN2Y ūKŠ hw ! [



Surface and corrosion protection	Corrosivity category	Surface coating	Color	Coating thickness
	DIN EN ISO 12944-2	Design		
hY{πD öLJWYŠŘü		• hY t { w LjWYŸŸÖZİÜ		сл 000 фл >Y
hY{π{ öäYİ-ftü	/2YŁJİ-Wİ-ftŚ üZ /m	• hYnt { w öZŁ ŒZİÜ		ул 000 ммЛ >Y
hY{πa öYŠŘİkzYü	/2YŁJİ-Wİ-ftŚ üZ /H	• hY t { w LjWYŸŸÖZİÜ	{üİ-yŖİ-WŖİ/w İ [тлмн - hŁüİzyİ-ftİw İ [/ft-ääİö	ммЛ 000 мсл >Y
hY{π[öİf-WĚSü	/2YŁJİ-Wİ-ftŚ üZ /o	• hYnt { w öZŁ ŒZİÜ		мпл 000 нпл >Y
hY{π· [öŠĚüWİ-ftİ-WĚSü	/2YŁJİ-Wİ-ftŚ üZ /n	• hYn9t ŁJWYŸŸÖZİÜ öÜöZ üİYŠăü • hYnt { w öZŁ ŒZİÜ		мсл 000 нпл >Y

- Эрллт . пр
- Эрллт . ммл
- Эрллт . нпл

[illegible]

Mounting position		M1 (A)	M2 (D)	M3 (B)	M4 (C)	M5 (E)	M6 (F)	M1-M6 (A-F)	M1, M5, M6 (AEF)
DSH02EŠā									
Эрлл . пр	f	л ⁰ п	л ⁰ п	л ⁰ п	л ⁰ п	л ⁰ п	л ⁰ п	л ⁰ п	л
Эрлл . ммл	f	л ⁰ о	л ⁰ с	л ⁰ т	л ⁰ ф	л ⁰ р	л ⁰ п	л	л ⁰ р
Эрлл . нпл	f	л ⁰ ф	м ⁰ н	м ⁰ о	м ⁰ у	м ⁰ п	м ⁰ л	л	м ⁰ п
Эрлл . прл	f	л ⁰ ф	м ⁰ с	м ⁰ ф	н ⁰ о	м ⁰ у	м ⁰ т	л	м ⁰ у
Эрлл . слл	f	м ⁰ п	н ⁰ о	н ⁰ т	о ⁰ н	н ⁰ с	н ⁰ с	л	л
Эрлл . унл	f	м ⁰ ф	н ⁰ у	о ⁰ п	п ⁰ н	о ⁰ н	н ⁰ т	л	л
Эрлл . мрлл	f	о ⁰ у	р ⁰ т	с ⁰ п	у ⁰ п	р ⁰ ф	о ⁰ ф	л	л
Эрлл . нтлл	f	с ⁰ л	ф ⁰ л	мл ⁰ л	мн ⁰ т	у ⁰ р	ф ⁰ р	л	л
Эрлл . полл	f	ф ⁰ р	мм ⁰ р	мс ⁰ р	нм ⁰ л	мп ⁰ л	мс ⁰ л	л	л
t\Šnāŭt-ĖŠ	f	л ⁰ п							

ол



Ventilation



b2 ŌŠyúly3 YŠI-ădzNŠă I-NŠ NŠljdzANŠŘ ř2N ůKŠ 3płłłł . pr X . nłł 3ŠI-NŌ2ĚŠă
čKŠ 3płłłł . nłł 3ŠI-NŌ2Ě ŌI-Y2LJú2yI-ftě ōŠ ŠljdzALJLŠŘ ōłŮK ōNŠI-úKŠN ŠtŠYŠyúă
Cł2Y 3płłłł . prł 2yŋ I-NŘăł ůKŠ 3ŠI-NŌ2ĚŠă I-NŠ ădzLJLJfIŠŘ ōłŮK ōNŠI-úKŠN ŠtŠYŠyúă
I-ă ăŮI-YŘI-NŘŋ

č2 NŠŘdzŌŠ ůKŠ yŋYŋŌŠN 2ř ŘłřřNŠyú ŌŠNă2yăł ůKŠ 3ŠI-NŌ2ĚŠă ŌI-YI-ftă2 ōŠ 2NŘŠNŠŘ ōłŮK Ō2YŋlyŠŘ
Y2dzYúly3 LJ2ăłú2yăł

- 3płłłł . młł ŋŋŋ . prł lyY2dzYúly3 LJ2ăłú2yăł a mkrkš ō ! 9Cú



lyúKŠăŠ 3ŠI-NŌ2ĚŠăł ůKŠ fdzŌNŌI-yú I-Y2dzYú KI-ă ōŠŠY2LJú2yI-ftăŠ ř2N ůKŠ dzăŠ ly
ŘłřřNŠyú Y2dzYúly3 LJ2ăłú2yăł lř NŠljdzANŠŘ ůKŠ ōNŠI-úKŠN ŠtŠYŠyúă I-NŠ ř2ăŠřě
ŠyŋřăŠŘ I-yŘ Ydzăú ōŠ Y2dzYúŠŘ ōŠř2NŠ Ō2Yyłăă2yly3 ŘŠLJŠyŘly3 2yúKŠ
Y2dzYúly3 LJ2ăłú2yăł

► čKŠ Y2ŘdzfI-N ăăăúŠY  mł

NOTICE

- C2N 3ŠI-NŌ2ĚŠă ōłŮK ŌŠyúflI-ú2y I-3I-LJ 2ř I-ú řŠI-ăŮ ol YY KI-ă ú2 ōŠ 2ăăŠNŊŊŠŘ ú2 ůKŠ YI-ŌKlyŠ
ŌI-ft 2yúKŠ Ō2NŠăLJ2yŘly3 3ŠI-NŌ2Ě ăłŘŠŋ



g500-B240

Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
Հիմնական տեսքերի մոնտաժ		
/ԿՏՈՒՄ/		
5ՈՒՄԿ		



Mounting position M4 (C)	Mounting position M5 (E) Հիմնարկի թափանցիկություն	Mounting position M6 (F)
/2/Մոնիթորինգ		
5/Մոնիթորինգ		

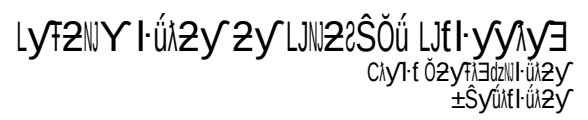
Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
<i>Cifftiy3 l-yR' ØSýútf l-úázy'</i>		
<i>/KŠÓŀ</i>		
<i>5ütiy'</i>		



Mounting position M4 (C)	Mounting position M5 (E) C11013 1-yr Ø50111-112y	Mounting position M6 (F)
/2y112t		
5111-1y		

Mounting position M1 (A)	Mounting position M2 (D)	Mounting position M3 (B)
/KŠŮl		
5ŮlŮy		

OC

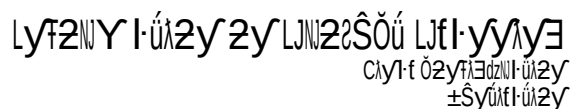


Эрлп . слл
Эрлп . унл
Эрлп . мрлл
Эрлп . нтлл
Эрлп . полл

Technical drawing of the Lenzte 6000 pump assembly. The drawing shows the side profile of the unit with the following dimensions:

- Total width:** 245
- Total height:** LB
- Outlet diameter:** Ø 88
- Height from base to outlet centerline:** (232)
- Minimum clearance from base to outlet:** min. 36
- Maximum total height:** max. 388

oy



○○



Mechanical installation

Important notes

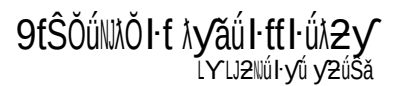
- IyāuI-ff ūKŠ LNJ2RdzŌū I-ŌŌ2NŖIy3 ū2 ūKŠ IyT2NŸI-ūā2yIy ūKŠ ŌKI-LJŪŠN h{ūI-yŖI-NŖIā I-yŖ 2LJŠNI-ūIy3 Ō2yŖIūā2yāh•
 - ▶ {ūI-yŖI-NŖIā I-yŖ 2LJŠNI-ūIy3 Ō2yŖIūā2yā no
- KŠ ūŠŌKIYŌI-f ŖI-ūI I-yŖ ūKŠ ŖI-ūI NŠEII-NŖIy3 ūKŠ ādzLJLJfē Ō2yŖIūā2yā ŌI-y ōŠ T2dzyŖ 2yŭKŠ yI-YŠLJfI-ūŠ I-yŖ Iy ūKāā Ŗ2ŌdzYŠyŭI-ūā2y•
- ! YŌIŠyŭ YŠŖI- b ŠāLJŠŌI-ftē ŌKŠYŌI-ftē I-ŌŌNŠāāIŌŠ 2yŠā b YI-ē ŖI-YI-ŌŠ āKI-Tŭ āŠI-ŭIy3 Nŭy3āš fI-ŌIjdzŠNā I-yŖ LJfI-āūāŌā•
- [ŠyŖŠ 2ffŠNā āLJŠŌI-f ādzNŖI-ŌŠ I-yŖ Ō2NŖI2āI2y LNJ2ŪŠŌūā2yIy ūKāā ŌI-āŠ•

Transport

- 9yādzNŠ I-LJLJNJ2LJNŭI-ūŠ KI-yŖŭIy3•
- a I-ŖŠ ādzNŠ ūKI-ū I-ff Ō2YLI2yŠyŭ LJI-Nŭā I-NŠ āŠŌdzNŠfē Y2dzyŭŠŖ• {ŠŌdzNŠ 2N NŠY2ŌŠ f22āŠ Ō2YLI2yŠyŭ LJI-Nŭā•
- hyŖē dzāŠ āI-TŠfē TĀŠŖ ūNŭI-yāLJ2Nŭ I-Ŗā ōŠŌŌŠ ŠēŠ ō2fŭā 2N ādzLJLJ2Nŭ LJfI-ūŠāū•
- 52 y2ŭ ŖI-YI-ŌŠ I-yē Ō2YLI2yŠyŭā ŖdzNŭy3 ūNŭI-yāLJ2Nŭ•
- ! Ō2ŖŠ ŠfŠŌŭN2āūI-ūāŌ ŖāŌŌKI-NŌŠā 2yŠfŠŌŭN2yŭ Ō2YLI2yŠyŭā I-yŖ Ō2yŭI-Ōūā•
- ! Ō2ŖŠ IYLIJ-Ōūā•
- /KŠŌŭ ūKŠ ŌI-NŭŭēIy3 ŌI-LJI-Ōūē 2T ūKŠ K2ŭāūā I-yŖ f2I-Ŗ KI-yŖŭIy3 ŖŠŌŭŌŠā• KŠ ōŠIŌKŭā ŌI-y ōŠ T2dzyŖ Iy ūKŠ āKALJLJy3 Ŗ2ŌdzYŠyŭā•
- {ŠŌdzNŠ ūKŠ f2I-Ŗ I-ŌI-yāū ūALJLJy3 I-yŖ Tŭfŭy3 Ŗ2ŭy•
- {ūI-yŖIy3 ōŠyŠI-ŭK ādzāLJŠyŖŖŖ f2I-Ŗā Iā LNJ2KIŌŭŠŖ•

Installation

- KŠ Y2dzyŭIy3 ādzNŖI-ŌŠā Ydzāū ōŠ LfI-yŠē ū2NāI2yI-ftē NŭIŖ I-yŖ TŭNŠ TŭN2Y ŌŭŌNŭI-ūā2yā•
- KŠ Y2dzyŭIy3 I-NŠI-ā Ydzāū ōŠ ādzŭŠŖ ū2 I-ōā2Nŭ ūKŠ T2NŌŠā I-yŖ ū2NŭIjdzŠā ŠŠyŠNI-ūŠŖ ŖdzNŭy3 2LJŠNI-ūā2y•
- 9yādzNŠ I-ydzYKIyŖŠNŠŖ ŌŠyŭI-ūā2y•
- C2N ŌŠNāI2yā ōŭK I-ŖI-yŖ ŖŠSLJ I-YŭIYdzY ŖIāūI-yŌŠ 2T mŕāā TŭN2Y ūKŠ 2dzūāŖŠ ŖI-YŠŪŠN 2T ūKŠ TŭI-y Ō2ŌŠN Iy IyŭI-ŖŠ ŖNŭŠŌūā2y•





Technical data

Notes regarding the given data

Catalog data

ӨКӨ ЛЭГЭСНИЙ ӨЛӨГӨСЭЭ УЗНИЙДЭСЭ ИГРЭХ АЛСЭРЭЭ АЛСӨЛӨГӨСӨР ХҮҮКӨС ӨЗҮГЭЭДЭНИЙ ҮЛЭГЭЙН ИДЭГЭРЭСЭ ӨЛӨГӨСЭ ИГРЭХ ИЛЭГЭЭ ҮЗЭГ

- hЛСНИ-УЛАЙ ҮЛЭГЭС ЛСНИ РИЭ Г' y KИЭ 950
- 5dzUe Өл-аа dzLJ 02 mЛ аӨЛӨКЛАЙ ЗЛСНИ-УЛАЙА ЛСНИ K2dzU
- ! YoiSyU ҮСҮЛСНИ-УДЗНИС Г' nЛ c/
- {лүС I-түлүдзРШ Ж mЛЛЛ Y I-020S YSi-yäSt tS0St
- ӨКӨ аStS0Uzy Үл-отСа лYРЛӨл-үС ӨКӨ YSӨKl-yлӨl-ffө ЛСНИ YläälotS ЛЭГЭСНИ tS0Stä ИГРЭХ ҮЗНИЙДЭСЭ
- ӨКӨ НИ-УЛАЙА ИЛЭГЭЭ 02 ӨКӨ ЗЛСНИ-УЛАЙ Y2RS {m өл-00 02 9b cЛЛЛЛЛМУ

NOTICE

ЛYӨл-аС ЗТ ЗУКСНИ ЗЛСНИ-УЛАЙ ӨЗҮГЭЛЭЙАЭ ӨКӨ I-ӨKлSӨl-otS ӨЛӨГӨСЭ Өл-ГРЛТТСНИ ТЗНИ ӨK2аС YSyUzySР

► LYӨл-аС ЗТ SÈUUSYС ЗЛСНИ-УЛАЙ ӨЗҮГЭЛЭЙАЭ ЛТSл-аС ЭСҮ лYү2dzOK ӨЛӨК È2dzU [SyfS ИСЛJNSäSyUл-УЛӨС



Standards and operating conditions

Conformities and approvals

α ΖΪΣ ΛΥΤΖΝΥ Ι-ΪΛΖΥ Ι-ΥΡ ΘΣΪΛΑΤΑΘΙ-ΪΣά ΖΤ Ι-ΛΛΛΝΖΘΙ-Τ ΘΙ-ΥΘΣ ΤΖΔΖΥΡ ΔΖΥΡΣΪΝ

Эрл Ъ Υрл ӨСӨСт ЭСІ-НСР ΥΖΪΖΪ

Europe					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
9dzn2LjŠt-y !y2y	/9	нллскпнк9 /	a І-ŎKıyŚиē 5ииŚŎЪЪŚ	hytē t2и āІ-ТŚЪēи иСтŚθІ-уЪ Ŏ2ΥΛІ2уŚуā	/9 ΥІ-и
		нлмпкорк9 !	[2θи±2тІ-ТŚ 5ииŚŎЪЪŚ	и	
		нлмпколк9 !	9 а / 5ииŚŎЪЪŚ		
		нлммскрк9 !	w2 І {		
				и	
DиŠtі .иуІ-іу !Y/!	!Y/!	{θ! нллукмрфт	сКŚ {dzΛІтē 2Т а І-ŎKıyŚиē о{ І-ТŚЪēи wСтдтІ-ЪІ2уā нллу	hytē t2и āІ-ТŚЪēи иСтŚθІ-уЪ Ŏ2ΥΛІ2уŚуā	!Y/! ΥІ-и
		{θ! нлмскмлфм	сКŚ 9тŚŎЪЪ2ΥІ-ЭуŚиŎ / 2ΥΛІ-ЪиŎиЪēи wСтдтІ-ЪІ2уā нлмс	и	
		{θ! нлмскммлм	сКŚ 9тŚŎЪЪŎŎІф 9ІjdzΛІΥŚуЪ о{ І-ТŚЪēи wСтдтІ-ЪІ2уā нлмс		
		{θ! нлмнколон	сКŚ wŚāииŎЪІ2у2Т ўКŚ ! āŚ 2Т /ŚиуІ-іу І І-І-иŎŔ2dā {dōāиІ-уŎŚā іу9тŚŎЪЪŎŎІф І-уŔ 9тŚŎЪЪ2уиŎ 9ІjdzΛІΥŚуЪ wСтдтІ-ЪІ2уā нлмн		

America					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
/І-уІ-РІ	/ { !	/ { ! нн9и b29 млл	/ { ! {ύ-ΥР-Ι-НΡ t2и a2Ъ2иā І-ΥР DŚуŚиІ-Ъ2иā	и	Ө ! [dzā ΥІ-и
! { !	! [	! [мллптм	! [{ύ-ΥР-Ι-НΡ t2и wЪІ-ЪіуЭ 9тŚОЪЪОІф а І-ӨКіуŚā		

Asia					
Country	Conformity/ approval	Law/standard	Description	Special feature	Product representation
/КіуІ	и	D . олнро	а.іуІ-уdзΥ Ітt2θІ-ōтŚ θІ-тdзŚā 2Т ŚуŚиЭē СттІθІŚуθē І-уР ŚуŚиЭē СттІθІŚуθē ЭиІ-РŚā t2и ΛІΣиΥІ-уŚуЪ ΥІ-ЭуŚи āēуӨКиу2у2dā Υ2Ъ2иā	и	/9[ΥІ-и
		D . кф нсртн	wŚІjdzΛиŚуŚуā 2уӨ2уӨŚуЪиІ-ЪІ2уТІΥΛā t2и ӨŚиуІ-іуиСаЪиОЪІŚР ādōāиІ-уӨŚā іуСтŚОЪЪОІф І-уР СтŚОЪЪ2уиО Λи2РdзОЪā		9C ! t ΥІ-и

Protection of persons and device protection

5ŚЭиŚŚ 2Т Λи2ЪŚОЪІ2у				
и	9b І9/ слрнф 9b І9/ сллоптр	Іtрп	Іуt2иΥІ-ЪІ2уІ-ΛиΛиŚā Ѳ2 ўКŚ Υ2dзуЪŚР І-уР иСтІ-Рēи	
		Іtср	t2иdзāŚ āиІ-ЪŚ	
сŚуΛиŚиІ-ЪdзиŚ ОІ-āā				
и	9b І9/ сллоптм	C ómрр c/Ѳ		ІуādзтІ-ЪІ2у āēāиŚу
tŚиΥāāиōтŚ θ2тІ-ТŚ				
и	І9/ сллоптмуптм	І±І /		! Ѳ рлл ±
	І9/кф{ сллоптнр/нлт	[іуΛи ѲdзиѲŚ !		hт ўКŚ ΛdзtāŚ θ2тІ-ТŚ

b2lās ŠYlāālyr		
π	9b l9/ сллппм	! 7lYlf 20ŠYlff l-āāSāāYŠyī 2T ūKS RūlōS āēāuSY lā lyRlāuSYal-ōtS

b2iāš 1YŲdyŋiē		
π	9b l9/ cлпoтп	! TŋYŋf 20ŠUŋff l-āāšāāY Šyŋ 2f ūKŠ RŋŋŋŠ āēāšY lā 1YŲiāuŠyāŋŋfŋŠ

/ ԹՅՎԻՍ			
{ ՆԶՈՒՅՏ	9b слтнмполнмффт	մԿՕ զնղ օօօ Էքղ ռ / ծ	Ծօ ԿշԿԻԿ
		մԿՕ զնղ օօօ Էսղ ռ / ծ	բօ ԿշԿԻԿ
ՓՈՒԿԱԶԱՄ	9b слтнмполнмффт	նԿՕ զնղ օօօ Էտղ ռ / ծ	
ԽԱՏՈՒՆԻԶԿ	9b слтнмполнмффт Է ! Նմֆֆտ	օԿՕ զնղ օօօ Էքղ ռ / ծ	ԽԱՏՈՒՆԻԶԿ ԺԱՌԿԶԺԺ օՆՎԻՂՏ
		օԿՕ զնղ օօօ Էքղ ռ / ծ	ԽԱՏՈՒՆԻԶԿ ԺԱՌԿԶԺԺ օՆՎԻՂՏ ԴԶԱՌՏԻ ԺՏԿՈՒՆԻՍՏԻ
		օԿՕ զնղ օօօ Էքղ ռ / ծ	ԽԱՏՈՒՆԻԶԿ ԺԱՌԿԶԺԺ օՆՎԻՂՏ ԴՏԽԺՏԿՈՒՆԻՍՏԻ

{ ¹ ŮŠ I-úwúdzŘš		
$\frac{\text{л X млл Y } \Uparrow \text{Y}^{\text{áť}}}{\text{мллл } \Phi\Phi \text{ нллл Y } \Phi \text{I-Y}^{\text{áť}}$	π	$\begin{matrix} {}^2 \text{ ŮKzdzú } \check{\text{O}}\text{dzlNUŠyŭ } \check{\text{R}}\check{\text{S}}\text{Nl-úly}\check{\text{Z}} \\ \text{wsŘdzôŠ Nl-I-úŠŘ zdzúLjdzú } \check{\text{O}}\text{dzlNUŠyŭ } \text{oě } \check{\text{p}}_{\check{\text{x}}} \text{: кмллл Y} \end{matrix}$

! NŲ KdzYŋĤŮŭē			
π	π	! ŐŠŬŋŋŊS ŬŖŧŧŧŶŦŶŦS KdzYŋĤŮŭē yḡ ^{ˆˆ}	² ŬŬKzdzŭ ŐZyŔŖŖŶŷŧŧŧŶŧŶŶy



ČSÖKylöl-f RI-ül-

5I-ül- 20SNUŠŠ

Ly 2NŘSN ů2 ŐI-fÖdzEI-ŮŠ ůKS ŠEI-ÖŮ ratio, the number of teeth z_g (driven) can be divided by the number of teeth z_t (driving).

g500-B110, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
69.0	5.185	140	27	21
72.0	5.963	161	27	20
77.0	7.111	64	9	20
81.0	8.178	368	45	20
84.0	9.101	1720	189	20
89.0	10.466	1978	189	19
90.0	11.449	2576	225	19
90.0	12.698	800	63	20
90.0	14.603	920	63	19
92.0	15.556	140	9	19
96.0	17.889	161	9	19
100	19.556	176	9	19
108	25.185	680	27	19

g500-B240, 2-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
138	3.565	385	108	17
147	4.889	44	9	17
156	6.257	2365	378	17
179	6.883	413	60	13
187	7.817	469	60	12
191	9.440	236	25	13
204	10.720	268	25	12
208	12.081	2537	210	13
217	13.719	2881	210	12
223	15.008	1876	125	12
240	16.857	118	7	12
240	19.143	134	7	12
240	20.650	413	20	12
240	23.450	469	20	12
240	26.878	2419	90	12
240	30.522	2747	90	12
240	33.433	1003	30	12
240	37.967	1139	30	12
240	49.133	737	15	12
240	59.630	5963	100	11



g500-B450, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
280	5.002	2401	480	21
308	6.860	343	50	21
368	9.315	3577	384	15
384	10.328	2107	204	14
404	12.775	511	40	15
422	14.165	1204	85	14
434	16.349	3139	192	14
446	17.885	3577	200	14
450	19.831	8428	425	13
450	22.813	365	16	14
450	25.294	430	17	13
450	27.945	3577	128	14
450	30.985	2107	68	13
450	36.373	20951	576	14
450	40.330	12341	306	13
450	45.245	8687	192	14
450	50.167	301	6	13
450	56.154	730	13	12
450	62.262	13760	221	12
450	68.788	3577	52	12
450	76.271	16856	221	12
450	89.534	20951	234	12
450	99.274	197456	1989	12
450	111.372	8687	78	12
450	123.487	4816	39	12
450	159.807	105952	663	12



g500-B600, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
376	5.067	6293	1242	20
398	6.949	7192	1035	19
462	7.617	15631	2052	17
541	10.741	290	27	14
553	13.369	13717	1026	16
600	14.730	928	63	14
600	18.851	24940	1323	14
600	20.622	928	45	14
600	22.852	15631	684	16
600	25.347	2408	95	14
600	26.061	860	33	12
600	29.744	91553	3078	16
600	32.439	1849	57	14
600	35.740	2752	77	12
600	36.999	37961	1026	16
600	41.940	23780	567	13
600	45.739	73960	1617	12
600	50.036	2752	55	12
600	55.447	2107	38	14
600	63.822	34400	539	12
600	67.513	12760	189	13
600	72.170	12341	171	14
600	78.182	860	11	12
600	81.937	5162	63	13
600	89.772	5117	57	14
600	101.760	70520	693	12
600	116.175	6622	57	14
600	126.580	29240	231	12
600	140.995	26789	190	14
600	163.810	3440	21	12
600	198.805	15308	77	12

g500-B600, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
600	201.089	286552	1425	14
600	227.943	112832	495	12



g500-B820, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{z, max}	i	z _g	z _t	'
Nm				
312	4.958	119	24	21
391	6.800	34	5	20
424	7.618	259	34	16
459	8.517	511	60	15
496	9.520	238	25	19
528	10.447	888	85	16
569	11.680	292	25	15
544	12.143	85	7	19
619	13.370	1591	119	15
653	14.626	6216	425	15
708	16.352	2044	125	15
747	18.655	2220	119	15
820	20.857	146	7	15
820	22.853	777	34	15
820	25.550	511	20	14
820	26.324	8687	330	12
820	29.745	1517	51	15
820	32.291	1776	55	12
820	36.102	9928	275	14
820	37.000	37	1	12
820	41.325	3182	77	12
820	45.207	12432	275	12
820	50.543	69496	1375	12
820	57.662	4440	77	12
820	64.468	4964	77	12
820	70.636	777	11	12
820	78.973	8687	110	12
820	91.939	3034	33	12
820	102.790	50881	495	12
820	114.364	1258	11	12
820	127.861	21097	165	12
820	148.000	148	1	12
820	165.467	2482	15	12
820	179.618	9879	55	12
820	200.816	110449	550	12
820	253.841	11169	44	11

g500-B820, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
820	201.818	2220	11	12
820	225.636	2482	11	12
820	256.175	70448	275	12
820	286.408	1181432	4125	12
820	321.788	10619	33	12



g500-B1500, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
837	6.866	1792	261	15
1006	9.516	1456	153	15
1330	10.902	36992	3393	12
1461	11.985	3128	261	11
1118	13.118	50176	3825	14
1500	15.111	136	9	12
1500	16.611	299	18	11
1500	18.598	2176	117	11
1500	20.444	184	9	11
1500	22.898	5152	225	11
1500	23.973	99416	4147	10
1500	26.353	16813	638	10
1500	29.206	1840	63	11
1500	32.547	3808	117	11
1500	35.778	322	9	11
1500	36.526	12857	352	10
1500	40.895	5848	143	10
1500	44.955	989	22	10
1500	46.568	3772	81	11
1500	51.920	18224	351	11
1500	57.074	1541	27	11
1500	58.422	58480	1001	10
1500	64.221	4945	77	10
1500	71.566	10234	143	10
1500	74.963	2024	27	11
1500	82.762	48416	585	11
1500	90.978	4094	45	10
1500	93.150	119884	1287	10
1500	102.396	40549	396	10
1500	114.166	48977	429	10
1500	125.498	66263	528	10
1500	149.949	5848	39	10
1500	164.833	989	6	10
1500	181.983	130118	715	10
1500	200.048	88021	440	10
1500	230.035	32895	143	10
1500	252.869	44505	176	10



g500-B1500, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	
Nm				'
1500	204.476	29240	143	10
1500	224.773	4945	22	10
1500	250.483	35819	143	10
1500	275.347	48461	176	10
1500	326.025	419594	1287	10
1500	358.388	283843	792	10
1500	405.543	173978	429	10
1500	445.799	117691	264	10
1500	520.087	2008057	3861	10
1500	571.714	2716783	4752	10

g500-B2700, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
M _{2, max}	i	z _g	z _t	'
Nm				
1446	6.918	28917	4180	14
1528	8.793	41769	4750	14
2212	11.713	2448	209	10
2262	12.863	18819	1463	9
2380	14.888	7072	475	10
2429	16.351	54366	3325	9
2579	19.542	23392	1197	9
2684	22.269	3808	171	9
2700	24.456	1394	57	9
2700	26.814	32096	1197	9
2700	29.447	82246	2793	9
2700	32.873	16864	513	9
2700	36.102	43214	1197	9
2700	42.772	8084	189	9
2700	46.973	82861	1764	8
2700	48.912	2788	57	9
2700	54.082	9248	171	9
2700	59.393	23698	399	9
2700	64.452	113693	1764	8
2700	71.951	5828	81	8
2700	76.862	30668	399	9
2700	84.940	24208	285	9
2700	93.283	62033	665	9
2700	97.481	2632	27	8
2700	107.056	1927	18	8
2700	118.370	3196	27	8
2700	129.996	32759	252	8
2700	153.185	4136	27	8
2700	168.230	21197	126	8
2700	185.911	8366	45	8
2700	204.170	171503	840	8
2700	235.000	235	1	8
2700	258.080	28905	112	8



g500-B2700, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
2700	205.407	5546	27	9
2700	225.581	113693	504	8
2700	265.150	178976	675	9
2700	291.191	65518	225	8
2700	332.564	188564	567	9
2700	365.227	1932781	5292	8
2700	414.296	11186	27	9
2700	454.986	32759	72	8
2700	487.698	79007	162	8
2700	552.395	44744	81	9
2700	606.648	32759	54	8
2700	697.844	169576	243	9
2700	785.074	21197	27	8
2700	953.304	360349	378	8



g500-B4300, 3-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	'
Nm				
2160	5.488	1147	209	14
2400	6.976	29822	4275	13
2700	9.156	98642	10773	13
4250	11.080	23157	2090	9
4300	12.885	97929	7600	9
4300	14.084	33449	2375	8
4300	16.913	35991	2128	9
4300	18.486	110639	5985	8
4300	21.065	18011	855	8
4300	23.206	49383	2128	9
4300	25.365	151807	5985	8
4300	28.013	2241	80	8
4300	31.097	79763	2565	8
4300	35.607	35607	1000	8
4300	38.546	5859	152	9
4300	42.760	38313	896	8
4300	46.737	39259	840	8
4300	53.258	6391	120	8
4300	58.671	52569	896	8
4300	64.127	53867	840	8
4300	71.930	9207	128	8
4300	78.619	28303	360	8
4300	97.453	6237	64	8
4300	106.517	6391	60	7
4300	118.336	15147	128	8
4300	129.342	15521	120	7
4300	153.141	9801	64	8
4300	167.383	10043	60	7
4300	185.857	237897	1280	8
4300	203.143	81257	400	7
4300	234.932	120285	512	8
4300	256.781	8217	32	7



g500-B4300, 4-stage gearboxes

Max. output torque	Ratio	Number of teeth		Max. backlash
				Standard
$M_{2, \max}$	i	z_g	z_t	
Nm				'
4300	205.348	52569	256	8
4300	224.446	53867	240	8
4300	265.073	106029	400	8
4300	278.438	4455	16	8
4300	304.333	913	3	8
4300	369.548	15521	42	8
4300	414.176	106029	256	8
4300	452.696	108647	240	8
4300	485.243	262031	540	8
4300	552.234	35343	64	8
4300	603.594	108647	180	8
4300	697.641	44649	64	8
4300	762.524	411763	540	8
4300	867.797	55539	64	8
4300	948.506	170731	180	8
4300	1227.478	110473	90	8



Radial forces and axial forces

Permissible radial force

The calculation of the permissible radial force must take account of the additional load factor f_w .

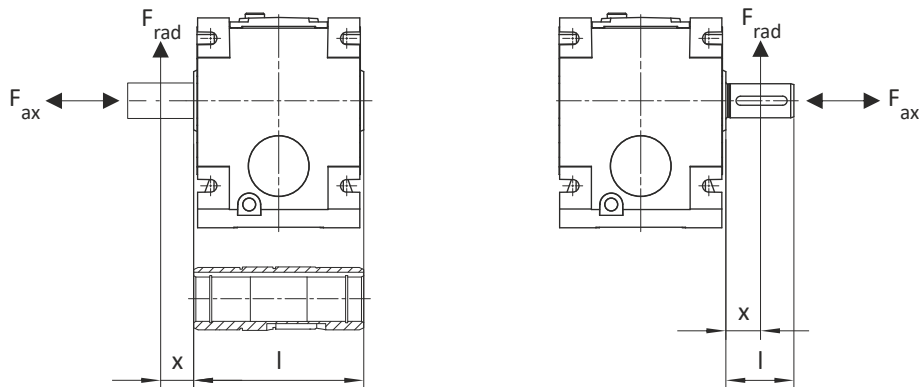
$$F_{\text{rad, perm}} = f_w \times F_{\text{rad, max}}$$

Permissible axial force

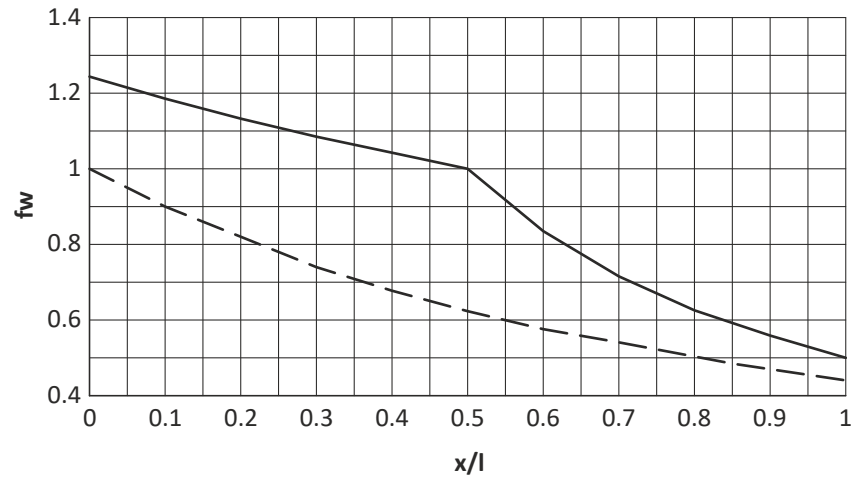
If there is no radial force, the maximum axial force is 50% of the value in the table $F_{\text{rad, max}}$

$$F_{\text{ax, zul}} = 0.5 \times F_{\text{rad, max}}$$

Application of forces



Additional load factor f_w on the drive shaft



— Solid shaft
- - - Hollow shaft

Technical data

Radial forces and axial forces



The values given in the tables refer to the centre shaft end force application point and are minimum values calculated according to the most unfavourable conditions (force application angle, mounting position, direction of rotation). The values were calculated with a load capacity of $c = 1.3$ and an input speed of 1400 rpm.



In case of different operating conditions, considerably higher forces can be transmitted. Please get in touch with your Lenze representative



A hollow shaft with shrink disc (SAR/SBR/SCR/SDR/SAK/SCK) requires a check by Lenze.

Max. radial force, gearbox with hollow shaft (H□□)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-B45	900	1200	2200	2500	2800	3000	3000	3000	3000	3000
g500-B110	1000	2200	2600	3000	3300	3600	3600	3600	3600	3600
g500-B240	1500	2300	3800	4500	5100	6200	7400	7800	7800	7800
g500-B450	3000	3800	4500	5200	5200	5500	7000	9000	9000	9000
g500-B600	3500	4000	4700	5400	5600	6000	8000	9400	9500	9500
g500-B820	4000	4200	5400	5800	6000	7000	9000	9800	10200	10200
g500-B1500	3700	5000	6000	7000	8000	9000	10500	13000	16000	16000
g500-B2700	4400	5700	7000	8200	9400	10600	12200	15000	18000	21900
g500-B4300	5000	6600	8000	9000	10500	12000	15500	21000	27900	35100

Max. radial force, gearbox with solid shaft, without flange (V□R)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-B45	900	1200	1800	2100	2400	2800	3000	3000	3000	3000
g500-B110	1000	1800	2100	2500	2700	3000	3000	3000	3000	3000
g500-B240	1500	2400	3000	3600	4500	5000	6000	6500	6500	6500
g500-B450	2000	2800	3600	3900	4300	5000	6000	7600	7800	7800
g500-B600	2500	3200	4000	4700	5400	6700	8300	9000	9000	9000
g500-B820	5200	6000	8200	9800	11000	11000	11000	11000	11000	11000
g500-B1500	6300	8200	10000	11500	13000	16000	16000	16000	16000	16000
g500-B2700	6600	8500	10400	12000	14000	16500	20100	22700	25500	27500
g500-B4300	7300	9500	11600	13300	14900	17300	20800	25700	32200	40000

Max. radial force, gearbox with solid shaft and flange (V□K)

Getriebe	Output speed n_2 [rpm]									
	1000	630	400	250	160	100	63	40	25	16
	Max. radial force $F_{rad,max}$ [rated]									
g500-B45	900	1200	1800	2100	2400	2800	3000	3000	3000	3000
g500-B110	1000	1800	2100	2500	2700	3000	3000	3000	3000	3000
g500-B240	2400	3600	5200	6000	6500	6500	6500	6500	6500	6500
g500-B450	3000	4000	4700	5100	5600	6400	7700	7800	7800	7800
g500-B600	3400	4100	5000	5300	6000	7300	9000	9000	9000	9000
g500-B820	6000	7000	8900	10200	11000	11000	11000	11000	11000	11000
g500-B1500	7000	9000	11000	12000	13000	15000	16000	16000	16000	16000
g500-B2700	8400	10900	13300	14400	15800	17700	20100	22700	25500	27500
g500-B4300	9200	11700	14300	15800	17800	20800	24800	29500	35100	40000



Selection tables

Notes on the selection tables

The selection tables represent the available combinations of gearbox, number of stages, ratio and motor for the mounting position M1. They only serve as a rough overview.

The following legend shows the layout of the selection tables:

Example

Inverter power supply 400 V, self-ventilated motors
2 kW

Explanation

Voltage of inverter mains connection, motor cooling type
Rated motor power

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2,max}$	$n_{2,th}$	J	i	g500-	m850-	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	810	4.8	67.0	716	8.244	4.889	B240	120S40	2	16
24.0	764	2.1	69.0	590	7.293	5.185	B110	120S40	2	11
27.0	664	1.9	72.0	498	7.205	5.963	B110	120S40	2	11
29.0	633	4.0	86.0	591	7.651	6.257	B240	120S40	2	16

										Mass
										Number of gear stages
										Motor product name
										Gearbox product name
										Ratio
										Moment of inertia With feedback, without brake
										Max. permissible output speed in S1 operation
										Max. permissible acceleration torque Dependent on inverter
										Load capacity of the gearbox c is the ratio of permissible rated torque of the gearbox to the rated torque of the motor (converted to the driven shaft). c must always be higher than the application factor detected for the application k.
										$c = \frac{M_{2,zul}}{M_{1,N} \times i \times \eta_{Getr}} > k$
										Output speed
										Output torque

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



Inverter mains connection 400 V, Self-ventilated motors

2 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
22.0	810	4.8	67.0	716	8.244	4.889	B240	120S40	2	16
24.0	764	2.1	69.0	590	7.293	5.185	B110	120S40	2	11
29.0	633	4.0	86.0	591	7.651	6.257	B240	120S40	2	16
31.0	577	5.6	94.0	526	8.982	6.860	B450	120S40	3	19
32.0	557	1.7	77.0	445	6.978	7.111	B110	120S40	2	11
36.0	507	3.8	108	366	8.013	7.817	B240	120S40	2	16
42.0	435	1.5	84.0	378	6.823	9.101	B110	120S40	2	11
43.0	416	5.6	131	379	10.261	9.520	B820	120S40	3	42
47.0	383	5.9	142	301	9.560	10.328	B450	120S40	3	19
49.0	369	3.0	148	299	7.468	10.720	B240	120S40	2	16
55.0	326	4.8	167	317	9.020	12.143	B820	120S40	3	42
58.0	312	1.1	90.0	293	6.693	12.698	B110	120S40	2	11
63.0	289	2.5	189	248	7.177	13.719	B240	120S40	2	16
65.0	280	4.7	195	247	8.291	14.165	B450	120S40	3	19
68.0	264	2.4	207	233	7.086	15.008	B240	120S40	2	16
75.0	242	5.6	225	221	9.596	16.352	B820	120S40	3	42
86.0	210	5.1	260	182	8.788	18.851	B600	120S40	3	37
87.0	207	2.0	240	207	6.920	19.143	B240	120S40	2	16
90.0	200	3.6	273	190	7.506	19.831	B450	120S40	3	19
94.0	192	4.6	284	169	8.523	20.622	B600	120S40	3	37
95.0	190	4.8	287	184	8.611	20.857	B820	120S40	3	42
107	169	1.6	240	169	6.822	23.450	B240	120S40	2	16
115	157	2.8	348	157	7.178	25.294	B450	120S40	3	19
116	155	4.1	352	155	8.053	25.550	B820	120S40	3	42
133	136	5.9	402	122	10.794	29.206	B1500	120S40	3	72
139	130	1.3	240	130	6.700	30.522	B240	120S40	2	16
141	128	2.3	427	128	6.994	30.985	B450	120S40	3	19
173	104	1.0	240	104	6.646	37.967	B240	120S40	2	16
184	98.2	2.0	450	98.2	6.802	40.330	B450	120S40	3	19
191	94.4	2.6	578	94.4	7.176	41.940	B600	120S40	3	37
209	86.6	2.4	600	64.4	8.062	45.739	B600	120S40	3	37
212	85.0	4.6	641	85.0	8.638	46.568	B1500	120S40	3	72
228	79.1	2.2	600	59.9	7.917	50.036	B600	120S40	3	37
229	78.9	1.6	450	78.9	6.711	50.167	B450	120S40	3	19
230	78.3	2.9	696	63.2	7.970	50.543	B820	120S40	3	42
260	69.4	3.9	786	69.4	7.964	57.074	B1500	120S40	3	72
284	63.6	1.3	450	52.8	6.971	62.262	B450	120S40	3	19
291	62.0	1.7	600	47.7	7.579	63.822	B600	120S40	3	37
293	61.7	4.2	885	52.0	9.440	64.221	B1500	120S40	3	72
294	61.4	2.3	820	52.4	7.612	64.468	B820	120S40	3	42
308	58.7	1.6	600	58.7	6.781	67.513	B600	120S40	3	37
342	52.8	3.1	1032	52.8	7.406	74.963	B1500	120S40	3	72
348	51.9	1.1	450	45.1	6.856	76.271	B450	120S40	3	19
350	51.5	3.9	1059	51.5	9.109	76.862	B2700	120S40	3	114
356	50.7	1.4	600	41.1	7.365	78.182	B600	120S40	3	37
360	50.1	1.9	820	47.7	7.387	78.973	B820	120S40	3	42
374	48.3	1.3	600	48.3	6.705	81.937	B600	120S40	3	37
387	46.6	3.2	1170	46.6	8.423	84.940	B2700	120S40	3	114
415	43.5	2.6	1253	43.5	7.158	90.978	B1500	120S40	3	72
425	42.5	3.2	1285	42.5	8.404	93.283	B2700	120S40	3	114



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
464	38.9	1.1	600	33.6	7.029	101.760	B600	120S40	3	37
467	38.7	2.6	1410	38.7	8.105	102.396	B1500	120S40	3	72
469	38.5	1.4	820	37.4	6.989	102.790	B820	120S40	3	42
572	31.6	2.4	1500	31.6	7.613	125.498	B1500	120S40	3	72
583	31.0	1.3	820	31.0	6.865	127.861	B820	120S40	3	42
698	25.9	3.5	2110	25.9	8.699	153.185	B2700	120S40	3	114
752	24.0	1.8	1500	24.0	7.200	164.833	B1500	120S40	3	72
763	23.7	4.3	2305	23.7	8.903	167.383	B4300	120S40	3	176
767	23.5	3.2	2317	23.5	8.693	168.230	B2700	120S40	3	114
848	21.3	2.9	2561	21.3	8.126	185.911	B2700	120S40	3	114
912	19.8	1.5	1500	19.8	7.019	200.048	B1500	120S40	3	72
926	19.5	3.6	2798	19.5	8.264	203.143	B4300	120S40	3	176
931	19.4	2.6	2700	19.4	8.122	204.170	B2700	120S40	3	114
1006	17.6	3.9	3039	17.6	7.631	224.446	B4300	120S40	4	179
1007	17.6	1.4	1500	17.6	7.035	224.773	B1500	120S40	4	75
1011	17.6	2.4	2700	17.6	7.514	225.581	B2700	120S40	4	117
1071	16.9	2.3	2700	16.9	7.580	235.000	B2700	120S40	3	114
1153	15.7	1.2	1500	15.7	6.835	252.869	B1500	120S40	3	72
1171	15.4	2.9	3537	15.4	7.667	256.781	B4300	120S40	3	176
1177	15.3	2.1	2700	15.3	7.578	258.080	B2700	120S40	3	114
1234	14.4	1.1	1500	14.4	6.982	275.347	B1500	120S40	4	75
1305	13.6	1.9	2700	13.6	7.696	291.191	B2700	120S40	4	117
1364	13.0	2.9	4120	13.0	7.486	304.333	B4300	120S40	4	179
1637	10.8	1.5	2700	10.8	6.910	365.227	B2700	120S40	4	117
1656	10.7	2.4	4300	10.7	7.338	369.548	B4300	120S40	4	179
2029	8.7	1.9	4300	8.7	7.100	452.696	B4300	120S40	4	179
2039	8.7	1.2	2700	8.7	7.071	454.986	B2700	120S40	4	117
2175	8.2	1.8	4300	8.2	6.923	485.243	B4300	120S40	4	179
2186	8.1	1.1	2700	8.1	6.898	487.698	B2700	120S40	4	117
2705	6.6	1.5	4300	6.6	6.790	603.594	B4300	120S40	4	179
3418	5.2	1.2	4300	5.2	6.806	762.524	B4300	120S40	4	179

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



2.9 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
29.0	909	3.7	88.0	799	18.672	3.565	B240	140S32	2	19
39.0	663	2.9	121	650	17.444	4.889	B240	140S32	2	19
40.0	648	5.3	124	611	20.060	5.002	B450	140S32	3	22
51.0	518	2.4	155	518	16.851	6.257	B240	140S32	2	19
55.0	477	5.5	168	444	22.411	6.800	B820	140S32	3	45
55.0	472	4.3	169	472	18.182	6.860	B450	140S32	3	22
56.0	466	5.5	172	434	19.863	6.949	B600	140S32	3	40
63.0	415	2.3	187	329	17.213	7.817	B240	140S32	2	19
69.0	380	5.2	210	302	24.771	8.517	B820	140S32	3	45
77.0	340	4.5	235	340	19.461	9.520	B820	140S32	3	45
83.0	314	3.6	255	273	18.760	10.328	B450	140S32	3	22
87.0	302	1.8	204	262	16.668	10.720	B240	140S32	2	19
87.0	302	4.8	265	236	20.818	10.741	B600	140S32	3	40
94.0	277	4.7	288	250	21.107	11.680	B820	140S32	3	45
98.0	267	3.8	300	267	18.220	12.143	B820	140S32	3	45
106	247	5.5	324	230	23.361	13.118	B1500	140S32	3	75
111	236	1.5	217	208	16.377	13.719	B240	140S32	2	19
114	229	2.9	350	224	17.491	14.165	B450	140S32	3	22
119	220	3.9	364	191	19.006	14.730	B600	140S32	3	40
121	216	1.4	223	193	16.286	15.008	B240	140S32	2	19
132	198	4.2	404	198	18.796	16.352	B820	140S32	3	45
152	172	3.1	466	165	17.988	18.851	B600	140S32	3	40
155	169	1.2	240	166	16.120	19.143	B240	140S32	2	19
160	163	2.2	450	163	16.706	19.831	B450	140S32	3	22
165	159	5.9	505	144	23.731	20.444	B1500	140S32	3	75
167	157	2.8	509	153	17.723	20.622	B600	140S32	3	40
168	155	3.8	515	155	17.811	20.857	B820	140S32	3	45
185	142	5.5	565	132	22.315	22.898	B1500	140S32	3	75
204	128	1.7	450	128	16.378	25.294	B450	140S32	3	22
205	128	5.8	626	116	37.870	25.365	B4300	140S32	3	179
206	127	3.1	631	127	17.253	25.550	B820	140S32	3	45
210	124	2.2	600	82.0	18.582	26.061	B600	140S32	3	40
213	123	3.0	650	87.1	18.777	26.324	B820	140S32	3	45
216	121	5.8	662	109	27.888	26.814	B2700	140S32	3	117
236	111	4.6	721	111	19.994	29.206	B1500	140S32	3	75
238	110	5.8	727	99.6	27.699	29.447	B2700	140S32	3	117
250	105	1.4	450	105	16.194	30.985	B450	140S32	3	22
289	90.7	1.6	600	60.6	17.817	35.740	B600	140S32	3	40
289	90.6	4.0	884	90.6	18.910	35.778	B1500	140S32	3	75
291	89.7	2.2	820	68.9	17.920	36.102	B820	140S32	3	45
339	77.3	1.6	600	77.3	16.376	41.940	B600	140S32	3	40
363	72.1	3.6	1110	59.2	20.969	44.955	B1500	140S32	3	75
369	70.8	1.4	600	51.4	17.262	45.739	B600	140S32	3	40
376	69.6	3.5	1150	69.6	17.838	46.568	B1500	140S32	3	75
395	66.2	4.5	1208	66.2	21.168	48.912	B2700	140S32	3	117
404	64.8	1.3	600	47.0	17.117	50.036	B600	140S32	3	40
408	64.1	1.8	820	54.6	17.170	50.543	B820	140S32	3	45
437	59.9	3.8	1336	59.9	16.813	54.082	B2700	140S32	3	117
461	56.8	2.9	1410	56.8	17.164	57.074	B1500	140S32	3	75
480	54.6	3.8	1467	54.6	16.813	59.393	B2700	140S32	3	117
515	50.8	1.0	600	38.3	16.779	63.822	B600	140S32	3	40



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
519	50.5	2.5	1500	46.9	18.640	64.221	B1500	140S32	3	75
520	50.3	1.4	820	42.9	16.812	64.468	B820	140S32	3	45
520	50.3	4.6	1592	43.3	24.870	64.452	B2700	140S32	3	117
605	43.2	2.2	1500	43.2	16.606	74.963	B1500	140S32	3	75
621	42.2	3.1	1898	42.2	18.309	76.862	B2700	140S32	3	117
638	41.0	1.1	820	37.0	16.587	78.973	B820	140S32	3	45
686	38.1	2.5	1985	38.1	17.623	84.940	B2700	140S32	3	117
735	35.6	1.8	1500	35.6	16.358	90.978	B1500	140S32	3	75
753	34.7	2.5	2180	34.7	17.604	93.283	B2700	140S32	3	117
787	33.2	3.0	2407	33.2	20.157	97.481	B2700	140S32	3	117
827	31.6	1.6	1500	31.6	17.305	102.396	B1500	140S32	3	75
860	30.4	4.4	2631	30.4	20.660	106.517	B4300	140S32	3	179
864	30.3	2.8	2644	30.3	20.142	107.056	B2700	140S32	3	117
956	27.4	2.8	2700	27.4	16.813	118.370	B2700	140S32	3	117
1013	25.8	1.4	1500	25.8	16.813	125.498	B1500	140S32	3	75
1044	25.0	4.0	3194	25.0	16.813	129.342	B4300	140S32	3	179
1050	24.9	2.5	2700	24.9	16.813	129.996	B2700	140S32	3	117
1237	21.2	2.1	2700	21.2	17.899	153.185	B2700	140S32	3	117
1331	19.7	1.1	1500	19.7	16.400	164.833	B1500	140S32	3	75
1351	19.4	3.1	4134	19.4	18.103	167.383	B4300	140S32	3	179
1358	19.3	1.9	2700	19.3	17.893	168.230	B2700	140S32	3	117
1501	17.4	1.8	2700	17.4	17.326	185.911	B2700	140S32	3	117
1640	15.9	2.6	4300	15.9	17.464	203.143	B4300	140S32	3	179
1648	15.9	1.6	2700	15.9	17.322	204.170	B2700	140S32	3	117
1781	14.4	2.4	4300	14.4	16.831	224.446	B4300	140S32	4	182
1790	14.4	1.5	2700	14.4	16.714	225.581	B2700	140S32	4	120
1897	13.8	1.4	2700	13.8	16.780	235.000	B2700	140S32	3	117
2073	12.6	2.0	4300	12.6	16.867	256.781	B4300	140S32	3	179
2084	12.6	1.3	2700	12.6	16.778	258.080	B2700	140S32	3	117
2311	11.1	1.1	2700	11.1	16.896	291.191	B2700	140S32	4	120
2415	10.6	1.7	4300	10.6	16.686	304.333	B4300	140S32	4	182
2933	8.8	1.4	4300	8.8	16.538	369.548	B4300	140S32	4	182
3593	7.2	1.2	4300	7.2	16.300	452.696	B4300	140S32	4	182

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



3.1 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
25.0	1111	4.0	98.0	810	15.372	3.565	B240	120M40	2	18
34.0	810	3.1	135	660	14.144	4.889	B240	120M40	2	18
35.0	792	4.2	138	582	16.760	5.002	B450	120M40	3	21
36.0	764	1.4	69.0	479	13.193	5.185	B110	120M40	2	14
44.0	633	2.6	156	546	13.551	6.257	B240	120M40	2	18
48.0	577	4.0	189	493	14.882	6.860	B450	120M40	3	21
50.0	557	1.1	77.0	370	12.878	7.111	B110	120M40	2	14
55.0	507	2.5	187	334	13.913	7.817	B240	120M40	2	18
67.0	416	3.9	262	355	16.161	9.520	B820	120M40	3	45
73.0	383	3.8	285	277	15.460	10.328	B450	120M40	3	21
75.0	369	2.0	204	273	13.368	10.720	B240	120M40	2	18
85.0	326	3.3	334	298	14.920	12.143	B820	120M40	3	45
96.0	289	1.6	217	215	13.077	13.719	B240	120M40	2	18
100	280	3.1	390	227	14.191	14.165	B450	120M40	3	21
106	264	1.5	223	199	12.986	15.008	B240	120M40	2	18
115	242	3.9	450	207	15.496	16.352	B820	120M40	3	45
133	210	3.3	519	167	14.688	18.851	B600	120M40	3	40
135	207	1.3	240	171	12.820	19.143	B240	120M40	2	18
139	200	2.3	450	176	13.406	19.831	B450	120M40	3	21
145	192	3.0	568	156	14.423	20.622	B600	120M40	3	40
147	190	3.3	575	174	14.511	20.857	B820	120M40	3	45
165	169	1.1	240	146	12.722	23.450	B240	120M40	2	18
178	157	1.8	450	154	13.078	25.294	B450	120M40	3	21
180	155	2.9	704	155	13.953	25.550	B820	120M40	3	45
205	136	4.1	805	114	16.694	29.206	B1500	120M40	3	75
218	128	1.5	450	127	12.894	30.985	B450	120M40	3	21
283	98.2	1.3	450	98.2	12.702	40.330	B450	120M40	3	21
295	94.4	1.7	600	94.4	13.076	41.940	B600	120M40	3	40
321	86.6	1.5	600	53.5	13.962	45.739	B600	120M40	3	40
327	85.0	3.2	1283	85.0	14.538	46.568	B1500	120M40	3	75
352	79.1	1.4	600	48.7	13.817	50.036	B600	120M40	3	40
353	78.9	1.1	450	78.9	12.611	50.167	B450	120M40	3	21
355	78.3	1.9	820	56.9	13.870	50.543	B820	120M40	3	45
401	69.4	2.8	1350	69.4	13.864	57.074	B1500	120M40	3	75
449	62.0	1.1	600	39.4	13.479	63.822	B600	120M40	3	40
451	61.7	2.7	1500	47.7	15.340	64.221	B1500	120M40	3	75
453	61.4	1.5	820	44.3	13.512	64.468	B820	120M40	3	45
475	58.7	1.0	600	58.7	12.681	67.513	B600	120M40	3	40
527	52.8	2.2	1388	52.8	13.306	74.963	B1500	120M40	3	75
540	51.5	2.7	1796	51.5	15.009	76.862	B2700	120M40	3	116
555	50.1	1.2	820	38.3	13.287	78.973	B820	120M40	3	45
597	46.6	2.3	1654	46.6	14.323	84.940	B2700	120M40	3	116
639	43.5	1.8	1400	43.5	13.058	90.978	B1500	120M40	3	75
656	42.5	2.3	1816	42.5	14.304	93.283	B2700	120M40	3	116
720	38.7	1.7	1500	34.8	14.005	102.396	B1500	120M40	3	75
882	31.6	1.6	1500	30.4	13.513	125.498	B1500	120M40	3	75
1077	25.9	2.3	2700	25.9	14.599	153.185	B2700	120M40	3	116
1159	24.0	1.2	1500	24.0	13.100	164.833	B1500	120M40	3	75
1177	23.7	3.0	3911	23.7	14.803	167.383	B4300	120M40	3	178
1182	23.5	2.1	2700	23.5	14.593	168.230	B2700	120M40	3	116
1307	21.3	1.9	2700	21.3	14.026	185.911	B2700	120M40	3	116



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1428	19.5	2.5	3956	19.5	14.164	203.143	B4300	120M40	3	178
1435	19.4	1.7	2700	19.4	14.022	204.170	B2700	120M40	3	116
1551	17.6	2.5	4300	17.6	13.531	224.446	B4300	120M40	4	181
1559	17.6	1.6	2700	17.6	13.414	225.581	B2700	120M40	4	119
1652	16.9	1.5	2700	16.9	13.480	235.000	B2700	120M40	3	116
1805	15.4	2.0	4024	15.4	13.567	256.781	B4300	120M40	3	178
1814	15.3	1.4	2700	15.3	13.478	258.080	B2700	120M40	3	116
2012	13.6	1.2	2700	13.6	13.596	291.191	B2700	120M40	4	119
2103	13.0	1.9	4300	13.0	13.386	304.333	B4300	120M40	4	181
2553	10.7	1.5	4300	10.7	13.238	369.548	B4300	120M40	4	181
3128	8.7	1.3	4300	8.7	13.000	452.696	B4300	120M40	4	181
3353	8.2	1.2	4300	8.2	12.823	485.243	B4300	120M40	4	181

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



3.7 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
30.0	1111	3.3	138	779	21.172	3.565	B240	120L40	2	21
42.0	810	2.5	147	634	19.944	4.889	B240	120L40	2	21
42.0	799	5.1	207	517	29.722	4.958	B820	120L40	3	47
43.0	792	4.1	209	580	22.560	5.002	B450	120L40	3	24
43.0	782	5.1	212	506	24.931	5.067	B600	120L40	3	42
53.0	633	2.1	156	526	19.351	6.257	B240	120L40	2	21
58.0	582	4.3	284	422	24.911	6.800	B820	120L40	3	47
59.0	577	3.4	277	479	20.682	6.860	B450	120L40	3	24
59.0	570	4.3	290	413	22.363	6.949	B600	120L40	3	42
67.0	507	2.0	187	320	19.713	7.817	B240	120L40	2	21
73.0	465	4.6	356	295	27.271	8.517	B820	120L40	3	47
81.0	416	3.4	384	346	21.961	9.520	B820	120L40	3	47
88.0	383	3.2	384	267	21.260	10.328	B450	120L40	3	24
92.0	369	1.6	204	244	19.168	10.720	B240	120L40	2	21
92.0	369	4.3	449	230	23.318	10.741	B600	120L40	3	42
100	339	4.1	488	244	23.607	11.680	B820	120L40	3	47
104	326	2.9	412	290	20.720	12.143	B820	120L40	3	47
112	302	4.2	548	218	25.861	13.118	B1500	120L40	3	78
117	289	1.3	217	196	18.877	13.719	B240	120L40	2	21
121	280	2.5	422	219	19.991	14.165	B450	120L40	3	24
126	269	3.5	600	187	21.506	14.730	B600	120L40	3	42
128	264	1.3	223	183	18.786	15.008	B240	120L40	2	21
140	242	3.4	660	201	21.296	16.352	B820	120L40	3	47
161	210	2.7	600	161	20.488	18.851	B600	120L40	3	42
164	207	1.1	240	157	18.620	19.143	B240	120L40	2	21
170	200	1.9	450	168	19.206	19.831	B450	120L40	3	24
175	194	4.6	854	137	26.231	20.444	B1500	120L40	3	78
176	192	2.5	600	149	20.223	20.622	B600	120L40	3	42
178	190	2.9	707	169	20.311	20.857	B820	120L40	3	47
196	173	4.2	957	125	24.815	22.898	B1500	120L40	3	78
216	157	1.5	450	139	18.878	25.294	B450	120L40	3	24
217	156	4.5	1060	110	40.370	25.365	B4300	120L40	3	181
218	155	2.5	745	155	19.753	25.550	B820	120L40	3	47
223	152	2.0	600	79.4	21.082	26.061	B600	120L40	3	42
225	150	2.6	820	84.7	21.277	26.324	B820	120L40	3	47
229	148	4.5	1121	104	30.388	26.814	B2700	120L40	3	119
250	136	3.6	1221	111	22.494	29.206	B1500	120L40	3	78
252	135	4.5	1231	94.6	30.199	29.447	B2700	120L40	3	119
265	128	1.2	450	117	18.694	30.985	B450	120L40	3	24
306	111	1.4	600	56.7	20.317	35.740	B600	120L40	3	42
306	111	3.1	1295	95.7	21.410	35.778	B1500	120L40	3	78
309	110	1.9	820	66.4	20.420	36.102	B820	120L40	3	47
359	94.4	1.4	600	89.9	18.876	41.940	B600	120L40	3	42
384	88.1	3.2	1500	57.7	23.469	44.955	B1500	120L40	3	78
391	86.6	1.3	600	48.2	19.762	45.739	B600	120L40	3	42
398	85.0	2.8	1354	85.0	20.338	46.568	B1500	120L40	3	78
418	81.0	3.5	1756	71.2	23.668	48.912	B2700	120L40	3	119
428	79.1	1.2	600	44.3	19.617	50.036	B600	120L40	3	42
432	78.3	1.6	820	51.0	19.670	50.543	B820	120L40	3	47
462	73.2	3.0	1664	73.2	19.313	54.082	B2700	120L40	3	119
488	69.4	2.4	1420	69.4	19.664	57.074	B1500	120L40	3	78



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
508	66.7	3.0	1828	66.7	19.313	59.393	B2700	120L40	3	119
548	61.8	5.1	2680	44.6	28.798	64.127	B4300	120L40	3	181
549	61.7	2.3	1500	45.7	21.140	64.221	B1500	120L40	3	78
551	61.4	1.2	820	40.7	19.312	64.468	B820	120L40	3	47
551	61.4	4.0	2694	42.2	27.370	64.452	B2700	120L40	3	119
641	52.8	1.9	1460	52.8	19.106	74.963	B1500	120L40	3	78
657	51.5	2.4	1898	51.5	20.809	76.862	B2700	120L40	3	119
675	50.1	1.0	820	35.1	19.087	78.973	B820	120L40	3	47
726	46.6	2.0	1751	46.6	20.123	84.940	B2700	120L40	3	119
778	43.5	1.6	1478	43.5	18.858	90.978	B1500	120L40	3	78
797	42.5	2.0	1923	42.5	20.104	93.283	B2700	120L40	3	119
833	40.6	2.7	2700	34.0	22.657	97.481	B2700	120L40	3	119
875	38.7	1.4	1500	31.4	19.805	102.396	B1500	120L40	3	78
911	37.2	3.5	3824	32.7	23.160	106.517	B4300	120L40	3	181
915	37.0	2.4	2700	30.4	22.642	107.056	B2700	120L40	3	119
1012	33.5	2.4	2700	32.7	19.313	118.370	B2700	120L40	3	119
1073	31.6	1.3	1500	27.9	19.313	125.498	B1500	120L40	3	78
1106	30.6	3.3	3981	30.6	19.313	129.342	B4300	120L40	3	181
1111	30.5	2.2	2700	29.2	19.313	129.996	B2700	120L40	3	119
1310	25.9	1.9	2700	25.9	20.399	153.185	B2700	120L40	3	119
1431	23.7	2.6	4134	23.7	20.603	167.383	B4300	120L40	3	181
1438	23.5	1.7	2700	23.5	20.393	168.230	B2700	120L40	3	119
1589	21.3	1.6	2700	21.3	19.826	185.911	B2700	120L40	3	119
1737	19.5	2.2	4187	19.5	19.964	203.143	B4300	120L40	3	181
1745	19.4	1.4	2700	19.4	19.822	204.170	B2700	120L40	3	119
1886	17.6	2.1	4300	17.6	19.331	224.446	B4300	120L40	4	184
1896	17.6	1.3	2700	17.6	19.214	225.581	B2700	120L40	4	122
2009	16.9	1.2	2700	16.9	19.280	235.000	B2700	120L40	3	119
2195	15.4	1.8	4268	15.4	19.367	256.781	B4300	120L40	3	181
2206	15.3	1.1	2700	15.3	19.278	258.080	B2700	120L40	3	119
2447	13.6	1.0	2700	13.6	19.396	291.191	B2700	120L40	4	122
2557	13.0	1.5	4300	13.0	19.186	304.333	B4300	120L40	4	184
3105	10.7	1.3	4300	10.7	19.038	369.548	B4300	120L40	4	184
3804	8.7	1.0	4300	8.7	18.800	452.696	B4300	120L40	4	184

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



4.8 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
47.0	909	2.3	138	719	33.072	3.565	B240	140M32	2	24
65.0	663	1.8	147	561	31.844	4.889	B240	140M32	2	24
66.0	653	3.7	252	483	41.622	4.958	B820	140M32	3	50
67.0	648	3.3	254	554	34.460	5.002	B450	140M32	3	27
67.0	640	4.3	257	490	36.831	5.067	B600	140M32	3	45
83.0	518	1.5	156	446	31.251	6.257	B240	140M32	2	24
90.0	477	3.4	346	402	36.811	6.800	B820	140M32	3	50
91.0	472	2.6	308	454	32.582	6.860	B450	140M32	3	27
92.0	466	3.3	353	393	34.263	6.949	B600	140M32	3	45
104	415	1.4	187	264	31.613	7.817	B240	140M32	2	24
113	380	3.1	433	272	39.171	8.517	B820	140M32	3	50
127	340	2.9	479	335	33.861	9.520	B820	140M32	3	50
137	314	2.2	384	246	33.160	10.328	B450	140M32	3	27
143	302	1.1	204	203	31.068	10.720	B240	140M32	2	24
143	302	2.9	541	213	35.218	10.741	B600	140M32	3	45
155	277	2.8	569	226	35.507	11.680	B820	140M32	3	50
161	267	2.5	517	267	32.620	12.143	B820	140M32	3	50
174	247	3.6	667	211	37.761	13.118	B1500	140M32	3	80
188	229	1.7	422	193	31.891	14.165	B450	140M32	3	27
196	220	2.4	600	172	33.406	14.730	B600	140M32	3	45
217	198	2.5	708	189	33.196	16.352	B820	140M32	3	50
251	172	1.9	600	145	32.388	18.851	B600	140M32	3	45
264	163	1.3	450	142	31.106	19.831	B450	140M32	3	27
272	159	3.9	1039	132	38.131	20.444	B1500	140M32	3	80
274	157	1.7	600	131	32.123	20.622	B600	140M32	3	45
277	155	2.3	820	155	32.211	20.857	B820	140M32	3	50
304	142	3.6	1164	121	36.715	22.898	B1500	140M32	3	80
336	128	1.0	450	118	30.778	25.294	B450	140M32	3	27
337	128	3.9	1289	106	52.270	25.365	B4300	140M32	3	184
340	127	1.9	820	127	31.653	25.550	B820	140M32	3	50
347	124	1.3	600	64.4	32.982	26.061	B600	140M32	3	45
350	123	1.8	820	75.3	33.177	26.324	B820	140M32	3	50
357	121	3.9	1363	101	42.288	26.814	B2700	140M32	3	122
388	111	3.0	1484	107	34.394	29.206	B1500	140M32	3	80
392	110	3.9	1496	91.5	42.099	29.447	B2700	140M32	3	122
476	90.6	2.4	1500	90.6	33.310	35.778	B1500	140M32	3	80
480	89.7	1.3	820	54.1	32.320	36.102	B820	140M32	3	50
598	72.1	2.2	1500	52.9	35.369	44.955	B1500	140M32	3	80
619	69.6	2.1	1500	69.6	32.238	46.568	B1500	140M32	3	80
650	66.2	3.0	2184	66.2	35.568	48.912	B2700	140M32	3	122
672	64.1	1.1	820	42.4	31.570	50.543	B820	140M32	3	50
719	59.9	2.5	2070	59.9	31.213	54.082	B2700	140M32	3	122
759	56.8	1.7	1500	56.8	31.564	57.074	B1500	140M32	3	80
790	54.6	2.5	2274	54.6	31.213	59.393	B2700	140M32	3	122
853	50.5	4.4	3259	43.2	40.698	64.127	B4300	140M32	3	184
854	50.5	1.5	1500	38.5	33.040	64.221	B1500	140M32	3	80
857	50.3	2.8	2700	38.9	39.270	64.452	B2700	140M32	3	122
997	43.2	1.3	1500	43.2	31.006	74.963	B1500	140M32	3	80
1022	42.2	2.0	2351	42.2	32.709	76.862	B2700	140M32	3	122
1130	38.1	1.7	2170	38.1	32.023	84.940	B2700	140M32	3	122
1210	35.6	1.1	1500	35.6	30.758	90.978	B1500	140M32	3	80



Technical data

Selection tables
Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1240	34.7	1.7	2383	34.7	32.004	93.283	B2700	140M32	3	122
1296	33.2	1.8	2700	30.8	34.557	97.481	B2700	140M32	3	122
1416	30.4	2.7	4300	30.4	35.060	106.517	B4300	140M32	3	184
1424	30.3	1.7	2700	26.7	34.542	107.056	B2700	140M32	3	122
1574	27.4	1.7	2700	27.4	31.213	118.370	B2700	140M32	3	122
1720	25.0	2.4	4300	25.0	31.213	129.342	B4300	140M32	3	184
1729	24.9	1.5	2700	24.7	31.213	129.996	B2700	140M32	3	122
2037	21.2	1.3	2700	21.2	32.299	153.185	B2700	140M32	3	122
2226	19.4	1.9	4300	19.4	32.503	167.383	B4300	140M32	3	184
2237	19.3	1.2	2700	19.3	32.293	168.230	B2700	140M32	3	122
2472	17.4	1.1	2700	17.4	31.726	185.911	B2700	140M32	3	122
2701	15.9	1.6	4300	15.9	31.864	203.143	B4300	140M32	3	184
2934	14.4	1.4	4300	14.4	31.231	224.446	B4300	140M32	4	187
3415	12.6	1.2	4300	12.6	31.267	256.781	B4300	140M32	3	184
3978	10.6	1.1	4300	10.6	31.086	304.333	B4300	140M32	4	187

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



5 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
75.0	605	3.3	312	472	72.322	4.958	B820	190S30	3	55
77.0	592	3.9	342	479	67.531	5.067	B600	190S30	3	50
103	441	3.0	391	393	67.511	6.800	B820	190S30	3	55
106	432	3.0	398	384	64.963	6.949	B600	190S30	3	50
129	352	2.8	459	266	69.871	8.517	B820	190S30	3	55
139	328	5.4	618	255	110.453	9.156	B4300	190S30	3	189
145	315	5.1	642	265	73.864	9.516	B1500	190S30	3	86
145	315	2.7	496	315	64.561	9.520	B820	190S30	3	55
163	279	2.6	541	208	65.918	10.741	B600	190S30	3	50
178	257	2.5	569	221	66.207	11.680	B820	190S30	3	55
185	247	2.3	544	247	63.320	12.143	B820	190S30	3	55
199	229	4.1	885	217	68.461	13.118	B1500	190S30	3	86
224	204	2.1	600	168	64.106	14.730	B600	190S30	3	50
249	184	2.3	708	184	63.896	16.352	B820	190S30	3	55
252	181	4.7	1120	150	71.875	16.611	B1500	190S30	3	86
281	162	5.4	1247	126	99.339	18.486	B4300	190S30	3	189
286	159	1.7	600	136	63.088	18.851	B600	190S30	3	50
297	154	5.4	1318	120	80.548	19.542	B2700	190S30	3	127
311	147	3.8	1379	132	68.831	20.444	B1500	190S30	3	86
313	146	1.5	600	123	62.823	20.622	B600	190S30	3	50
317	144	2.1	820	144	62.911	20.857	B820	190S30	3	55
320	142	5.0	1421	119	91.159	21.065	B4300	190S30	3	189
338	135	5.0	1502	113	76.687	22.269	B2700	190S30	3	127
348	131	3.4	1500	120	67.415	22.898	B1500	190S30	3	86
372	123	5.0	1649	103	76.413	24.456	B2700	190S30	3	127
385	118	4.4	1711	109	82.970	25.365	B4300	190S30	3	189
388	117	1.7	820	117	62.353	25.550	B820	190S30	3	55
396	115	1.2	600	61.0	63.682	26.061	B600	190S30	3	50
400	114	1.6	820	70.7	63.877	26.324	B820	190S30	3	55
401	114	3.0	1500	73.8	70.893	26.353	B1500	190S30	3	86
408	112	4.4	1808	103	72.988	26.814	B2700	190S30	3	127
444	103	2.7	1500	103	65.094	29.206	B1500	190S30	3	86
448	102	4.4	1986	93.9	72.799	29.447	B2700	190S30	3	127
473	96.5	3.7	2097	93.6	76.689	31.097	B4300	190S30	3	189
500	91.3	3.7	2217	88.5	70.048	32.873	B2700	190S30	3	127
544	83.9	2.2	1500	83.9	64.010	35.778	B1500	190S30	3	86
549	83.1	1.2	820	51.3	63.020	36.102	B820	190S30	3	55
549	83.1	3.7	2435	80.6	69.922	36.102	B2700	190S30	3	127
555	82.1	2.1	1500	57.1	67.690	36.526	B1500	190S30	3	86
650	70.1	3.8	2700	50.5	74.939	42.772	B2700	190S30	3	127
683	66.7	2.0	1500	51.7	66.069	44.955	B1500	190S30	3	86
708	64.4	1.9	1500	64.4	62.938	46.568	B1500	190S30	3	86
710	64.2	5.5	3152	50.0	77.555	46.737	B4300	190S30	3	189
714	63.9	3.4	2700	45.1	74.865	46.973	B2700	190S30	3	127
743	61.3	3.3	2700	61.3	66.268	48.912	B2700	190S30	3	127
809	56.3	4.8	3592	46.8	74.383	53.258	B4300	190S30	3	189
822	55.5	2.8	2574	55.5	61.913	54.082	B2700	190S30	3	127
867	52.6	1.6	1500	52.6	62.264	57.074	B1500	190S30	3	86
903	50.5	2.7	2700	50.5	61.913	59.393	B2700	190S30	3	127
975	46.8	4.0	4300	42.3	71.398	64.127	B4300	190S30	3	189
976	46.7	1.4	1500	36.4	63.740	64.221	B1500	190S30	3	86



Technical data

Selection tables
Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
980	46.5	2.5	2700	37.9	69.970	64.452	B2700	190S30	3	127
1093	41.7	2.2	2700	36.3	68.066	71.951	B2700	190S30	3	127
1168	39.0	2.1	2700	39.0	63.409	76.862	B2700	190S30	3	127
1195	38.2	3.3	4300	36.0	68.991	78.619	B4300	190S30	3	189
1291	35.3	1.9	2700	35.3	62.723	84.940	B2700	190S30	3	127
1418	32.2	1.7	2700	32.2	62.704	93.283	B2700	190S30	3	127
1482	30.8	1.6	2700	29.1	65.257	97.481	B2700	190S30	3	127
1619	28.2	2.4	4300	28.2	65.760	106.517	B4300	190S30	3	189
1627	28.0	1.5	2700	25.3	65.242	107.056	B2700	190S30	3	127
1799	25.3	1.5	2700	25.3	61.913	118.370	B2700	190S30	3	127
1966	23.2	2.2	4300	23.2	61.913	129.342	B4300	190S30	3	189
1976	23.1	1.4	2700	23.1	61.913	129.996	B2700	190S30	3	127
2328	19.6	1.2	2700	19.6	62.999	153.185	B2700	190S30	3	127
2544	17.9	1.7	4300	17.9	63.203	167.383	B4300	190S30	3	189
2557	17.8	1.1	2700	17.8	62.993	168.230	B2700	190S30	3	127
3087	14.8	1.4	4300	14.8	62.564	203.143	B4300	190S30	3	189

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



5.9 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
82.0	653	2.9	312	461	56.122	4.958	B820	140L32	3	55
83.0	648	2.6	280	530	48.960	5.002	B450	140L32	3	32
84.0	640	3.5	376	468	51.331	5.067	B600	140L32	3	50
112	477	2.7	391	384	51.311	6.800	B820	140L32	3	55
113	472	2.1	308	434	47.082	6.860	B450	140L32	3	32
113	472	4.5	522	312	66.552	6.866	B1500	140L32	3	85
115	466	2.7	398	375	48.763	6.949	B600	140L32	3	50
141	380	2.5	459	259	53.671	8.517	B820	140L32	3	55
151	354	4.1	696	241	94.253	9.156	B4300	140L32	3	189
157	341	3.8	723	249	57.664	9.516	B1500	140L32	3	85
157	340	2.4	496	323	48.361	9.520	B820	140L32	3	55
171	314	1.7	384	224	47.660	10.328	B450	140L32	3	32
178	302	2.4	541	202	49.718	10.741	B600	140L32	3	50
193	277	2.3	569	215	50.007	11.680	B820	140L32	3	55
198	270	4.5	911	179	62.732	11.985	B1500	140L32	3	85
201	267	2.1	542	267	47.120	12.143	B820	140L32	3	55
217	247	3.1	862	204	52.261	13.118	B1500	140L32	3	85
234	229	1.4	422	171	46.391	14.165	B450	140L32	3	32
243	220	1.9	600	162	47.906	14.730	B600	140L32	3	50
270	198	2.0	708	181	47.696	16.352	B820	140L32	3	55
275	195	3.8	1262	143	55.675	16.611	B1500	140L32	3	85
306	175	4.1	1405	119	83.139	18.486	B4300	140L32	3	189
312	172	1.5	600	128	46.888	18.851	B600	140L32	3	50
323	166	4.1	1485	113	64.348	19.542	B2700	140L32	3	127
328	163	1.1	450	130	45.606	19.831	B450	140L32	3	32
338	159	3.3	1447	128	52.631	20.444	B1500	140L32	3	85
341	157	1.4	600	116	46.623	20.622	B600	140L32	3	50
345	155	1.8	820	152	46.711	20.857	B820	140L32	3	55
348	154	3.7	1601	112	74.959	21.065	B4300	140L32	3	189
368	146	3.7	1692	106	60.487	22.269	B2700	140L32	3	127
378	142	3.1	1500	117	51.215	22.898	B1500	140L32	3	85
404	133	3.7	1858	96.8	60.213	24.456	B2700	140L32	3	127
419	128	3.3	1778	103	66.770	25.365	B4300	140L32	3	189
422	127	1.5	820	127	46.153	25.550	B820	140L32	3	55
431	124	1.1	600	57.9	47.482	26.061	B600	140L32	3	50
435	123	1.5	820	66.6	47.677	26.324	B820	140L32	3	55
436	123	2.7	1500	71.8	54.693	26.353	B1500	140L32	3	85
443	121	3.3	1880	97.1	56.788	26.814	B2700	140L32	3	127
483	111	2.4	1500	102	48.894	29.206	B1500	140L32	3	85
487	110	3.3	2064	88.4	56.599	29.447	B2700	140L32	3	127
514	104	2.8	1873	88.4	60.489	31.097	B4300	140L32	3	189
543	98.6	2.8	1980	83.6	53.848	32.873	B2700	140L32	3	127
591	90.6	2.0	1500	87.7	47.810	35.778	B1500	140L32	3	85
597	89.7	1.1	820	48.8	46.820	36.102	B820	140L32	3	55
597	89.7	2.8	2174	76.1	53.722	36.102	B2700	140L32	3	127
604	88.7	1.9	1500	55.1	51.490	36.526	B1500	140L32	3	85
707	75.7	3.4	2700	49.3	58.739	42.772	B2700	140L32	3	127
743	72.1	1.8	1500	48.3	49.869	44.955	B1500	140L32	3	85
770	69.6	1.7	1500	69.6	46.738	46.568	B1500	140L32	3	85
772	69.3	4.7	3551	48.4	61.355	46.737	B4300	140L32	3	189
776	69.0	3.1	2700	44.0	58.665	46.973	B2700	140L32	3	127



Technical data

Selection tables
Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, th}$	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
808	66.2	2.5	2304	66.2	50.068	48.912	B2700	140L32	3	127
880	60.8	4.3	4047	45.7	58.183	53.258	B4300	140L32	3	189
894	59.9	2.2	2183	59.9	45.713	54.082	B2700	140L32	3	127
943	56.8	1.4	1500	56.8	46.064	57.074	B1500	140L32	3	85
982	54.6	2.2	2398	54.6	45.713	59.393	B2700	140L32	3	127
1060	50.5	3.6	4300	41.3	55.198	64.127	B4300	140L32	3	189
1061	50.5	1.2	1500	34.4	47.540	64.221	B1500	140L32	3	85
1065	50.3	2.2	2700	37.0	53.770	64.452	B2700	140L32	3	127
1189	45.0	2.0	2700	35.7	51.866	71.951	B2700	140L32	3	127
1270	42.2	1.7	2490	42.2	47.209	76.862	B2700	140L32	3	127
1299	41.2	2.9	4300	35.2	52.791	78.619	B4300	140L32	3	189
1404	38.1	1.4	2299	38.1	46.523	84.940	B2700	140L32	3	127
1542	34.7	1.4	2525	34.7	46.504	93.283	B2700	140L32	3	127
1611	33.2	1.5	2700	27.5	49.057	97.481	B2700	140L32	3	127
1760	30.4	2.2	4300	29.8	49.560	106.517	B4300	140L32	3	189
1769	30.3	1.3	2700	24.0	49.042	107.056	B2700	140L32	3	127
1956	27.4	1.4	2700	25.4	45.713	118.370	B2700	140L32	3	127
2138	25.0	2.0	4300	25.0	45.713	129.342	B4300	140L32	3	189
2149	24.9	1.2	2700	22.1	45.713	129.996	B2700	140L32	3	127
2532	21.2	1.0	2700	21.0	46.799	153.185	B2700	140L32	3	127
2766	19.4	1.5	4300	19.4	47.003	167.383	B4300	140L32	3	189
3357	15.9	1.3	4300	15.9	46.364	203.143	B4300	140L32	3	189

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



7.5 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
113	605	2.2	312	431	128.522	4.958	B820	190M30	3	64
116	592	2.6	376	438	123.731	5.067	B600	190M30	3	59
155	441	2.0	391	359	123.711	6.800	B820	190M30	3	64
157	437	4.2	783	308	138.952	6.866	B1500	190M30	3	94
158	432	2.0	398	353	121.163	6.949	B600	190M30	3	59
194	352	1.9	459	238	126.071	8.517	B820	190M30	3	64
209	328	4.0	1044	239	166.653	9.156	B4300	190M30	3	198
217	315	3.7	1006	248	130.064	9.516	B1500	190M30	3	94
217	315	1.8	496	294	120.761	9.520	B820	190M30	3	64
245	279	1.8	541	181	122.118	10.741	B600	190M30	3	59
266	257	1.7	569	191	122.407	11.680	B820	190M30	3	64
273	250	4.2	1366	176	135.132	11.985	B1500	190M30	3	94
277	247	1.6	544	241	119.520	12.143	B820	190M30	3	64
299	229	3.0	1118	203	124.661	13.118	B1500	190M30	3	94
336	204	1.4	600	137	120.306	14.730	B600	190M30	3	59
373	184	1.5	708	155	120.096	16.352	B820	190M30	3	64
379	181	3.1	1500	137	128.075	16.611	B1500	190M30	3	94
421	162	4.0	2107	119	155.539	18.486	B4300	190M30	3	198
430	159	1.1	600	110	119.288	18.851	B600	190M30	3	59
445	154	4.0	2227	112	136.748	19.542	B2700	190M30	3	136
466	147	2.6	1500	120	125.031	20.444	B1500	190M30	3	94
470	146	1.0	600	101	119.023	20.622	B600	190M30	3	59
475	144	1.4	820	132	119.111	20.857	B820	190M30	3	64
480	142	3.7	2213	112	147.359	21.065	B4300	190M30	3	198
508	135	3.7	2339	106	132.887	22.269	B2700	190M30	3	136
522	131	2.3	1500	110	123.615	22.898	B1500	190M30	3	94
558	123	3.7	2569	96.3	132.613	24.456	B2700	190M30	3	136
578	118	3.2	2337	102	139.170	25.365	B4300	190M30	3	198
582	117	1.1	820	114	118.553	25.550	B820	190M30	3	64
600	114	1.1	820	57.5	120.077	26.324	B820	190M30	3	64
601	114	2.0	1500	66.9	127.093	26.353	B1500	190M30	3	94
611	112	3.2	2471	96.6	129.188	26.814	B2700	190M30	3	136
666	103	1.8	1500	92.2	121.294	29.206	B1500	190M30	3	94
671	102	3.2	2700	87.9	128.999	29.447	B2700	190M30	3	136
709	96.5	2.8	2466	88.0	132.889	31.097	B4300	190M30	3	198
749	91.3	2.8	2607	83.2	126.248	32.873	B2700	190M30	3	136
816	83.9	1.5	1500	75.2	120.210	35.778	B1500	190M30	3	94
823	83.1	2.6	2700	74.9	126.122	36.102	B2700	190M30	3	136
833	82.1	1.4	1500	46.4	123.890	36.526	B1500	190M30	3	94
975	70.1	2.5	2700	46.1	131.139	42.772	B2700	190M30	3	136
1025	66.7	1.3	1500	40.8	122.269	44.955	B1500	190M30	3	94
1062	64.4	1.3	1500	64.4	119.138	46.568	B1500	190M30	3	94
1065	64.2	3.6	4300	46.0	133.755	46.737	B4300	190M30	3	198
1071	63.9	2.3	2700	41.0	131.065	46.973	B2700	190M30	3	136
1115	61.3	2.2	2700	61.3	122.468	48.912	B2700	190M30	3	136
1214	56.3	3.2	4300	42.9	130.583	53.258	B4300	190M30	3	198
1233	55.5	2.0	2700	55.5	118.113	54.082	B2700	190M30	3	136
1301	52.6	1.0	1500	52.6	118.464	57.074	B1500	190M30	3	94
1354	50.5	1.8	2700	50.5	118.113	59.393	B2700	190M30	3	136
1462	46.8	2.7	4300	38.7	127.598	64.127	B4300	190M30	3	198
1469	46.5	1.7	2700	32.3	126.170	64.452	B2700	190M30	3	136



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M_2	n_2	c	$M_{2, \max}$	$n_{2, \text{th}}$	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
1640	41.7	1.5	2700	30.4	124.266	71.951	B2700	190M30	3	136
1752	39.0	1.4	2700	39.0	119.609	76.862	B2700	190M30	3	136
1792	38.2	2.2	4300	33.0	125.191	78.619	B4300	190M30	3	198
1936	35.3	1.3	2700	35.3	118.923	84.940	B2700	190M30	3	136
2127	32.2	1.1	2700	32.2	118.904	93.283	B2700	190M30	3	136
2222	30.8	1.1	2700	24.1	121.457	97.481	B2700	190M30	3	136
2428	28.2	1.6	4300	26.2	121.960	106.517	B4300	190M30	3	198
2441	28.0	1.0	2700	21.1	121.442	107.056	B2700	190M30	3	136
2698	25.3	1.0	2700	22.1	118.113	118.370	B2700	190M30	3	136
2949	23.2	1.5	4300	23.2	118.113	129.342	B4300	190M30	3	198
3816	17.9	1.1	4300	17.9	119.403	167.383	B4300	190M30	3	198

Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors



9.2 kW

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
165	508	1.6	312	371	204.522	4.958	B820	190L25	3	76
168	497	1.9	376	399	199.731	5.067	B600	190L25	3	71
226	371	1.5	391	302	199.711	6.800	B820	190L25	3	76
228	367	3.1	837	286	214.952	6.866	B1500	190L25	3	107
231	363	1.5	398	295	197.163	6.949	B600	190L25	3	71
232	361	3.7	1028	272	274.324	6.976	B4300	190L25	3	210
283	296	1.4	459	199	202.071	8.517	B820	190L25	3	76
292	287	3.7	1296	216	226.939	8.793	B2700	190L25	3	148
304	275	3.1	1138	227	242.653	9.156	B4300	190L25	3	210
316	265	2.7	1006	231	206.064	9.516	B1500	190L25	3	107
316	265	1.3	496	248	196.761	9.520	B820	190L25	3	76
357	235	1.3	541	152	198.118	10.741	B600	190L25	3	71
388	216	1.2	569	162	198.407	11.680	B820	190L25	3	76
398	210	3.1	1461	164	211.132	11.985	B1500	190L25	3	107
404	208	1.1	544	202	195.520	12.143	B820	190L25	3	76
436	192	2.2	1118	187	200.661	13.118	B1500	190L25	3	107
468	179	3.7	2076	135	255.177	14.084	B4300	190L25	3	210
490	171	1.0	600	118	196.306	14.730	B600	190L25	3	71
495	169	3.7	2195	127	222.802	14.888	B2700	190L25	3	148
544	154	1.1	708	132	196.096	16.352	B820	190L25	3	76
544	154	3.7	2410	116	222.188	16.351	B2700	190L25	3	148
552	152	2.3	1500	127	204.075	16.611	B1500	190L25	3	107
615	136	3.1	2297	113	231.539	18.486	B4300	190L25	3	210
650	129	3.1	2428	106	212.748	19.542	B2700	190L25	3	148
680	123	1.9	1500	109	201.031	20.444	B1500	190L25	3	107
700	120	2.9	2395	106	223.359	21.065	B4300	190L25	3	210
740	113	2.9	2532	100	208.887	22.269	B2700	190L25	3	148
761	110	1.7	1500	95.9	199.615	22.898	B1500	190L25	3	107
813	103	2.8	2700	90.7	208.613	24.456	B2700	190L25	3	148
843	99.4	2.5	2527	96.5	215.170	25.365	B4300	190L25	3	210
876	95.6	1.4	1500	55.1	203.093	26.353	B1500	190L25	3	107
891	94.0	2.5	2672	91.3	205.188	26.814	B2700	190L25	3	148
971	86.3	1.3	1500	77.3	197.294	29.206	B1500	190L25	3	107
979	85.6	2.3	2700	81.7	204.999	29.447	B2700	190L25	3	148
1034	81.0	2.2	2661	78.7	208.889	31.097	B4300	190L25	3	210
1093	76.7	2.1	2700	74.5	202.248	32.873	B2700	190L25	3	148
1184	70.8	3.1	4300	50.8	217.646	35.607	B4300	190L25	3	210
1189	70.4	1.1	1500	65.3	196.210	35.778	B1500	190L25	3	107
1200	69.8	1.9	2700	67.8	202.122	36.102	B2700	190L25	3	148
1214	69.0	1.0	1500	39.6	199.890	36.526	B1500	190L25	3	107
1422	58.9	1.8	2700	41.5	207.139	42.772	B2700	190L25	3	148
1554	53.9	2.6	4300	42.8	209.755	46.737	B4300	190L25	3	210
1562	53.6	1.7	2700	35.8	207.065	46.973	B2700	190L25	3	148
1626	51.5	1.6	2700	50.1	198.468	48.912	B2700	190L25	3	148
1771	47.3	2.3	4300	39.9	206.583	53.258	B4300	190L25	3	210
1798	46.6	1.4	2700	45.3	194.113	54.082	B2700	190L25	3	148
1975	42.4	1.3	2700	41.2	194.113	59.393	B2700	190L25	3	148
2132	39.3	1.9	4300	35.6	203.598	64.127	B4300	190L25	3	210
2143	39.1	1.2	2700	27.1	202.170	64.452	B2700	190L25	3	148
2392	35.0	1.1	2700	26.2	200.266	71.951	B2700	190L25	3	148
2614	32.1	1.6	4300	28.6	201.191	78.619	B4300	190L25	3	210



Technical data

Selection tables

Inverter mains connection 400 V, Self-ventilated motors

Inverter operation							Geared motor		Number of stages	
M ₂	n ₂	c	M _{2, max}	n _{2, th}	J	i	g500-	m850	z	m
Nm	rpm		Nm	rpm	kgcm ²					kg
3541	23.7	1.2	4300	22.6	197.960	106.517	B4300	190L25	3	210
4300	19.5	1.0	4300	18.9	194.113	129.342	B4300	190L25	3	210



Dimensions

Notes on the basic dimensions

Gearboxes	Without pre-stage	With pre-stage
g500-B45	2-stufig	-
g500-B110	2-stage	3-stage
g500-B240	2-/3-stage	4-stage
g500-B450 ... B4300	3-stage	4-stage

The ratio range of gearboxes with pre-stage is extended via an additional housing with gear stage between the gearbox and motor.

The basic dimensions are shown without pre-stage and are valid up to the following deviating dimensions for gearbox with pre-stage valid:

- Total length "L"
- Center distance "a" (gearbox output shaft – motor shaft)

Deviating dimensions: [► Gearbox with pre-stage](#) [100](#)

Example

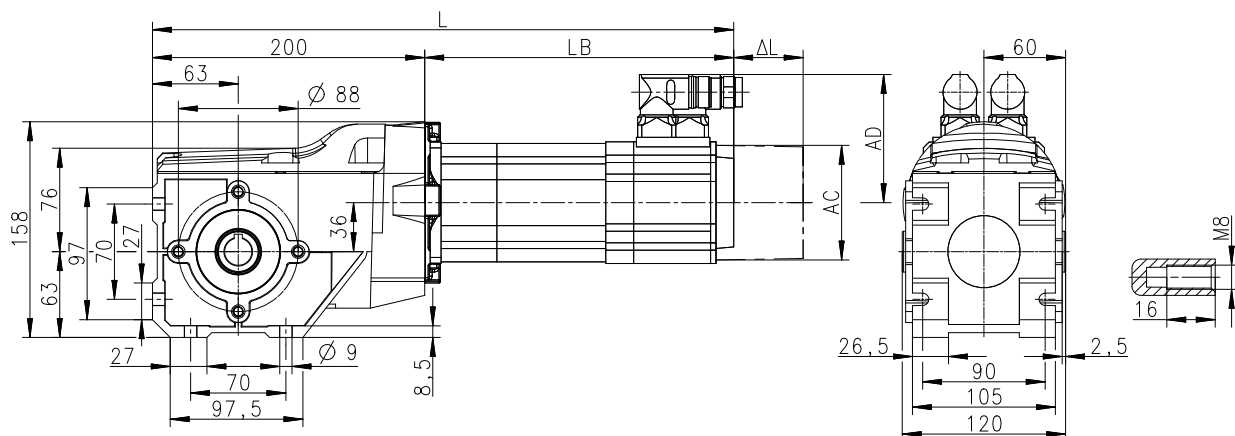
g500-B110

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)

Explanation

Gearbox

[► Designs](#) [12](#)



Motor	m850-		
	S120/S3960	S120/M3960	S120/L3960
Table content		Explanation	
Total length	L	Total length of the drive without brake	
Motor length	LB	Motor length without brake	
Length of motor options	Δ L	Additional length (with brake)	
Motor diameter	AC	Motor diameter	
Motor/connection distance	AD	Distance from motor center to connector end	

NOTICE

For gearboxes with hollow shaft and keyway (H□□), the hole fitting H7 is interrupted in the middle area of the hollow shaft length by a free rotation.

Ensure the double-ended control of the machine shaft in the hollow shaft.

► The specified min. length of the machine shaft must be reached.



Gearboxes	Min. length of the machine shaft
	mm
g500-B45	85
g500-B110	105
g500-B240	127
g500-B450	100
g500-B600	110
g500-B820	120
g500-B1500	135
g500-B2700	155
g500-B4300	190



If the mounting area (foot support) towards the motor is longer than the gearbox foot, some motors collide with the mounting area!

For an accurate check of the geometrical data, Lenze recommends the use of the »Product Finder« at www.Lenze.com.

Technical data

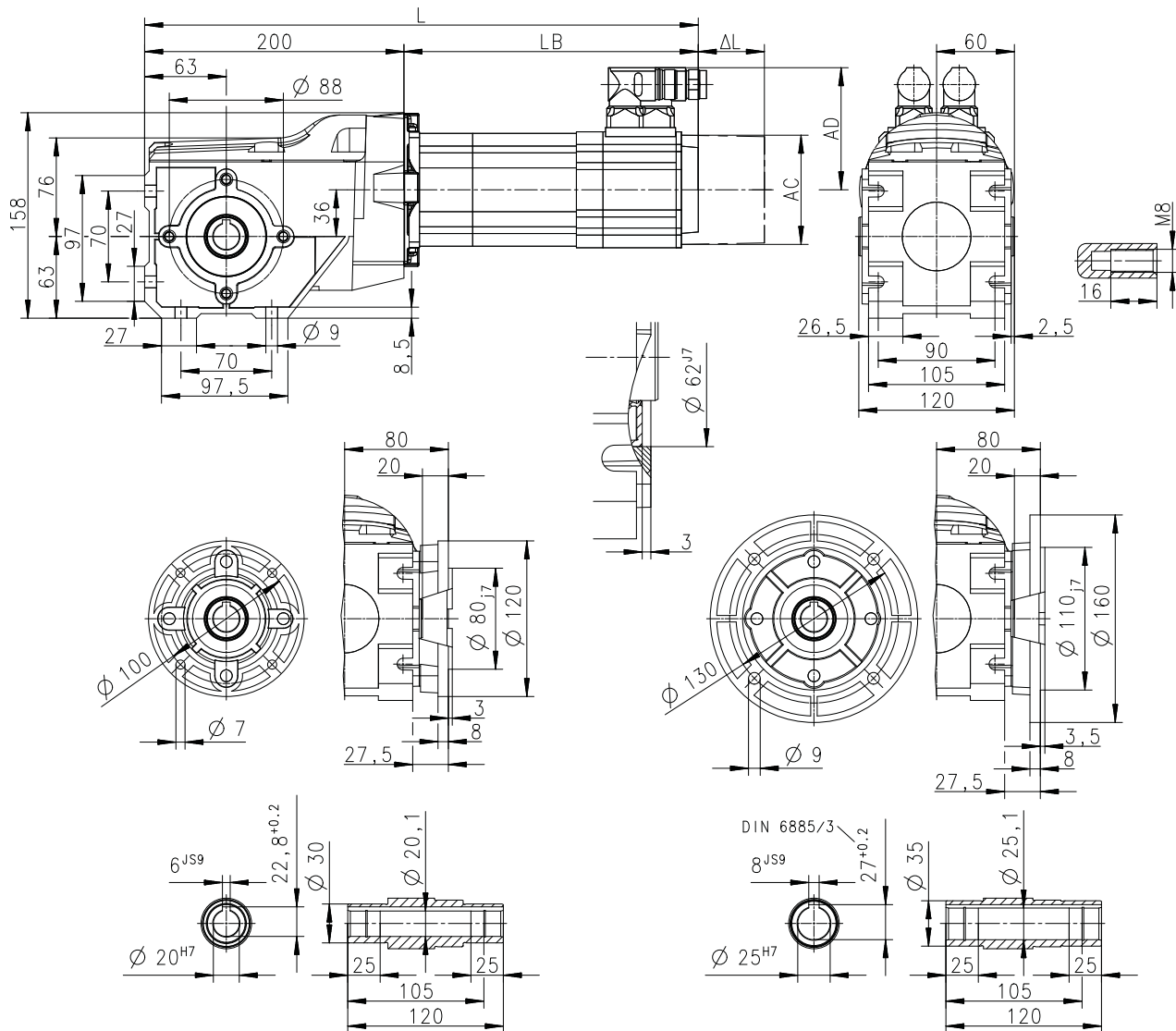
Dimensions
Basic dimensions



Basic dimensions

g500-B110, 2-stage

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800153-01

Motor			m850-	
			S120/S3960	S120/M3960
Total length	L	mm	382	420
Motor length	LB	mm	182	220
Length of motor options	Δ L	mm	46	46
Motor diameter	AC	mm	121	121
Motor/connection distance	AD	mm	102	102

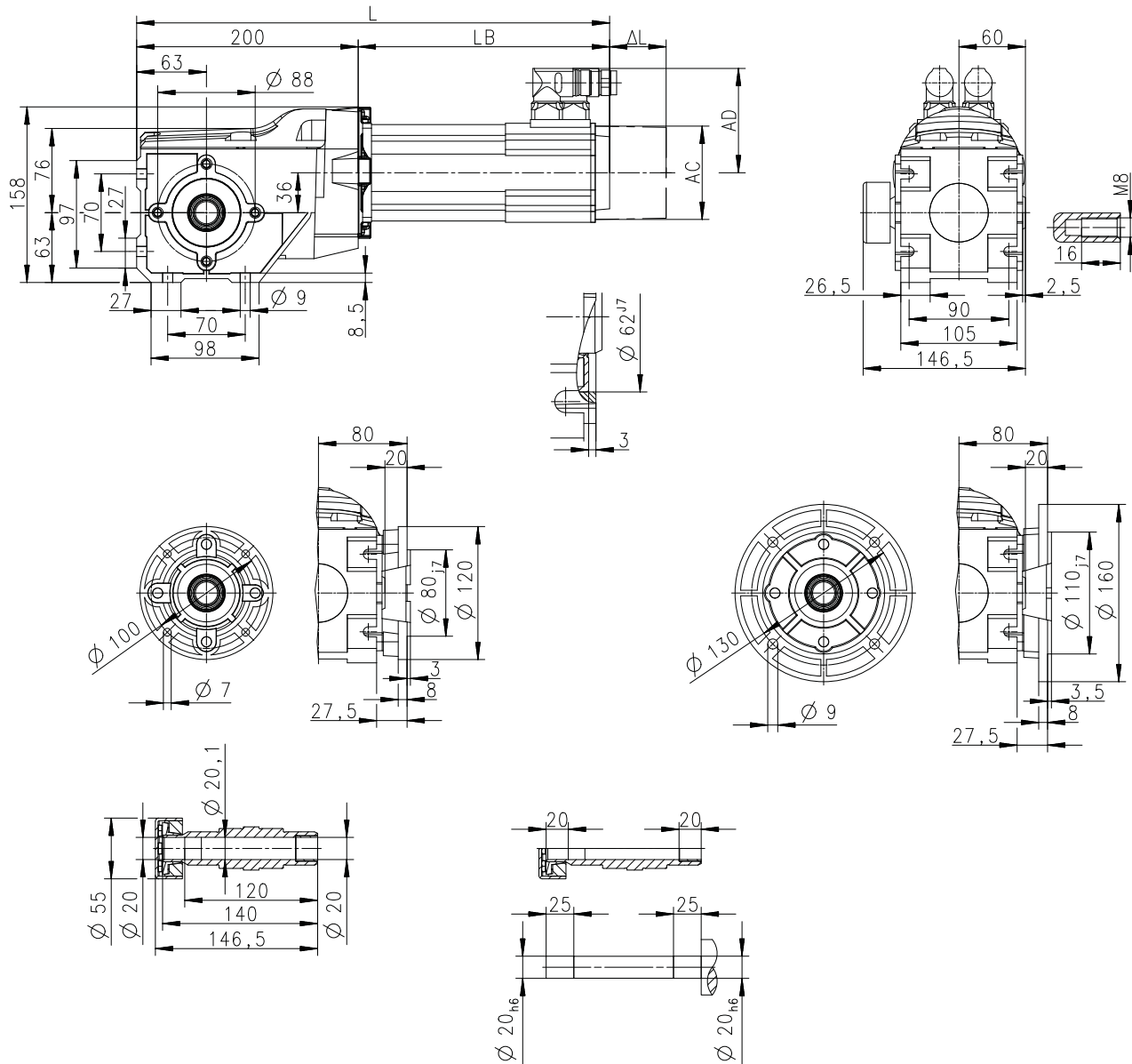


Technical data

Dimensions
Basic dimensions

g500-B110, 2-stage

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)

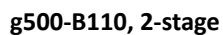


8800221-00

Motor			m850-	
			S120/S3960	S120/M3960
Total length	L	mm	382	420
Motor length	LB	mm	182	220
Length of motor options	ΔL	mm	46	46
Motor diameter	AC	mm	121	121
Motor/connection distance	AD	mm	102	102

Dimensions

Basic dimensions

[illegible]

Motor			m850-	
			S120/S3960	S120/M3960
Total length	L	mm	382	420
Motor length	LB	mm	182	220
Length of motor options	Δ L	mm	46	46
Motor diameter	AC	mm	121	121
Motor/connection distance	AD	mm	102	102

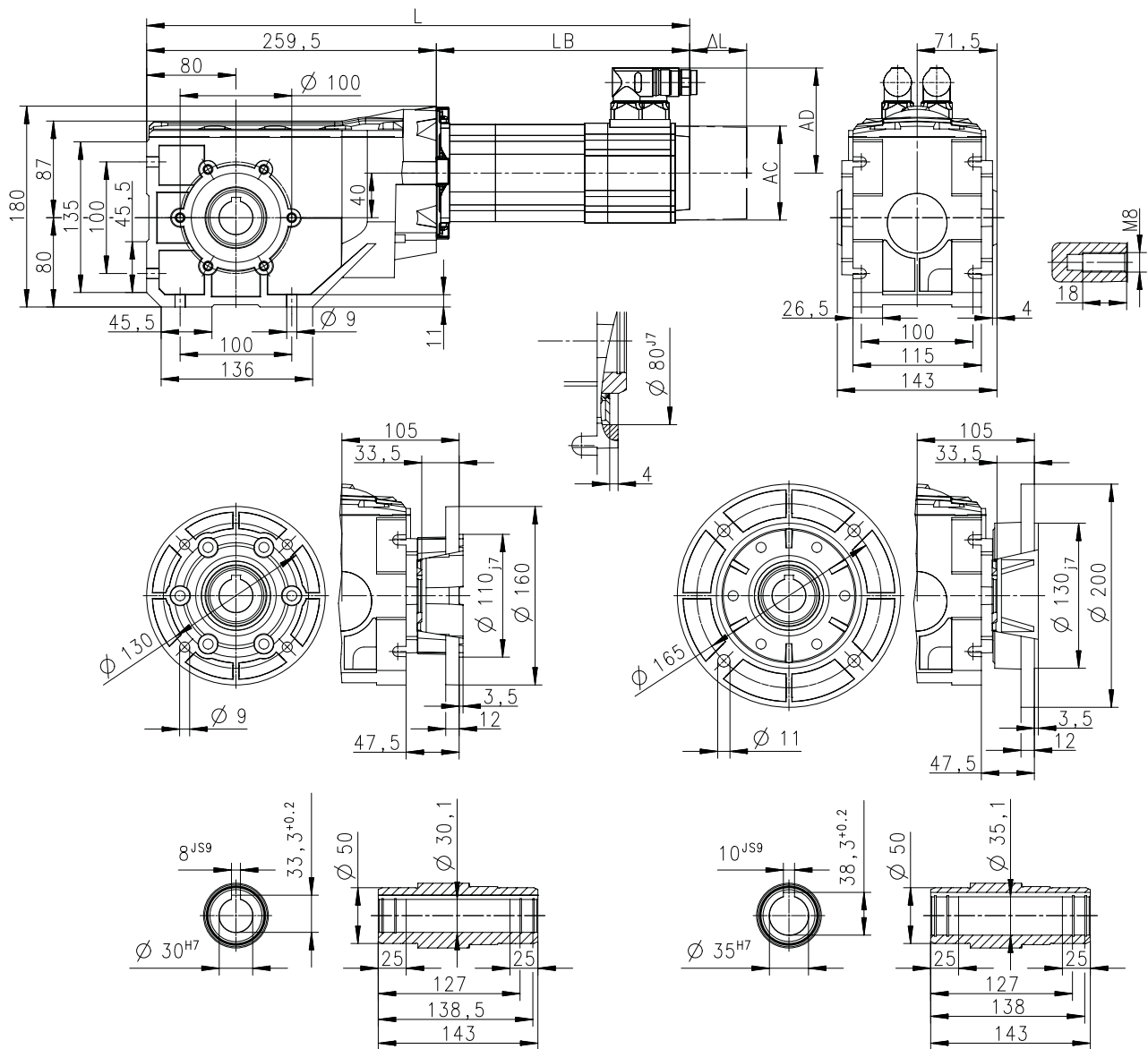


Technical data

Dimensions
Basic dimensions

g500-B240, 2-/3-stage

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800161-01

Motor			m850-				
			S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240
Total length	L	mm	441	479	517	444	484
Motor length	LB	mm	182	220	258	184	224
Length of motor options	Δ L	mm	46	46	46	53	53
Motor diameter	AC	mm	121	121	121	142	142
Motor/connection distance	AD	mm	102	102	102	114	114

Technical data

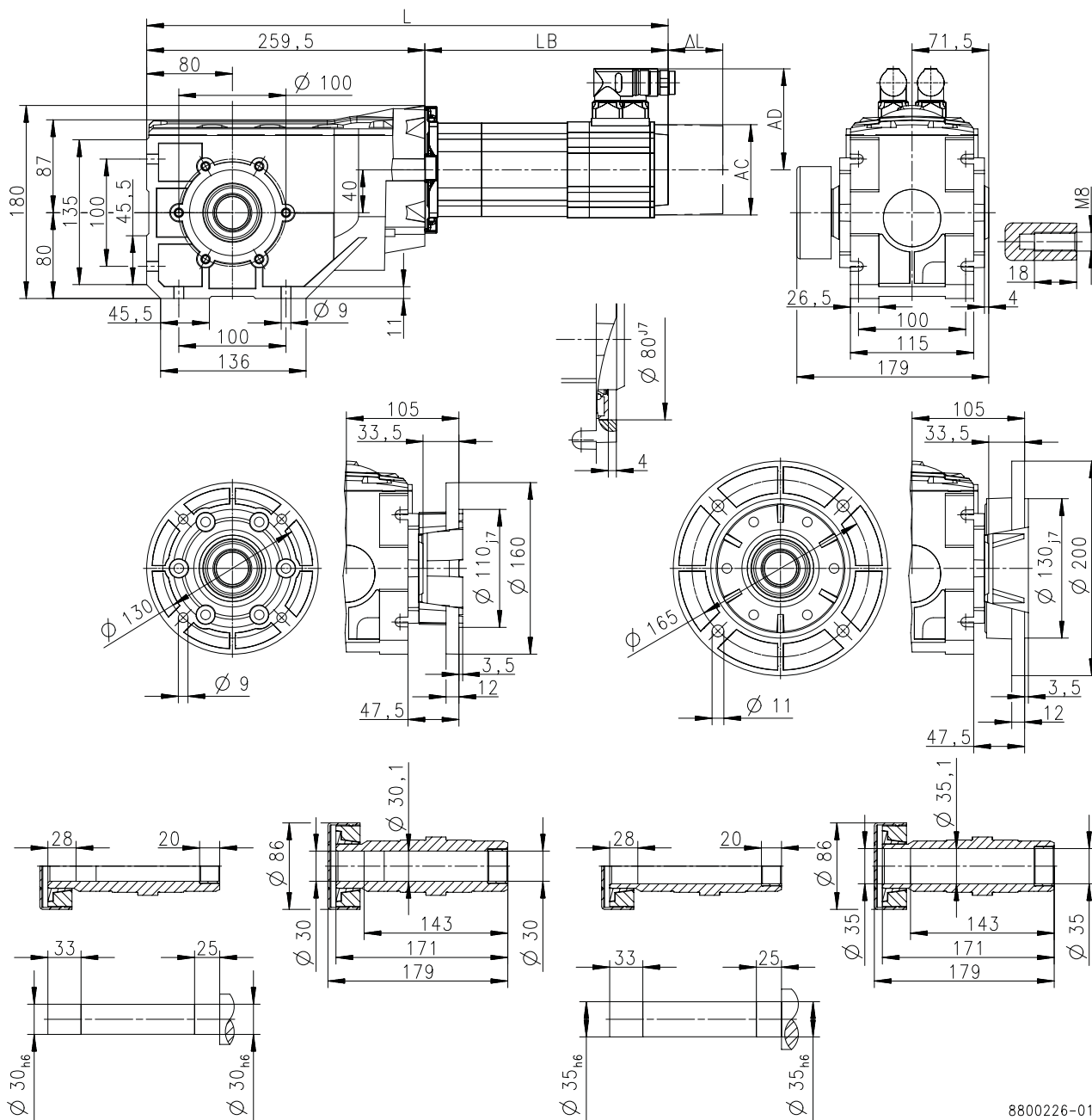
Dimensions

Basic dimensions



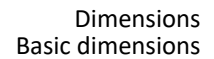
g500-B240, 2-/3-stage

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



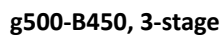
8800226-01

Motor			m850-				
			S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240
Total length	L	mm	441	479	517	444	484
Motor length	LB	mm	182	220	258	184	224
Length of motor options	ΔL	mm	46	46	46	53	53
Motor diameter	AC	mm	121	121	121	142	142
Motor/connection distance	AD	mm	102	102	102	114	114



Dimensions

Basic dimensions

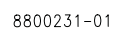


Motor			m850-					
			S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240	S140/L3240
Total length	L	mm	449	487	525	451	491	531
Motor length	LB	mm	182	220	258	184	224	264
Length of motor options	Δ L	mm	46	46	46	53	53	53
Motor diameter	AC	mm	121	121	121	142	142	142
Motor/connection distance	AD	mm	102	102	102	114	114	135



Basic dimensions

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)

83

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

84

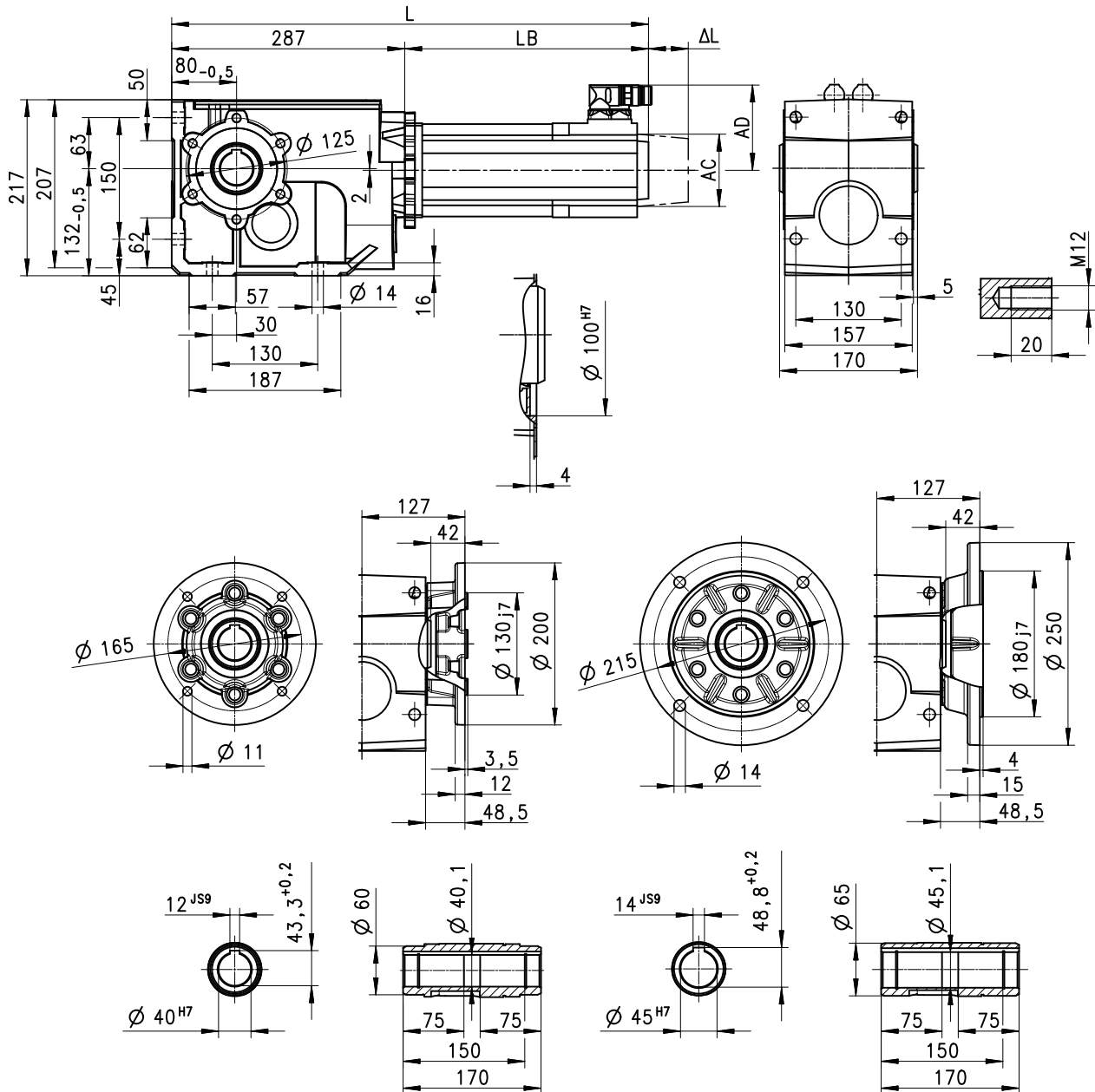


Technical data

Dimensions
Basic dimensions

g500-B600, 3-stage

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800569-02

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	469	507	545	471	511	551	512	560	624
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

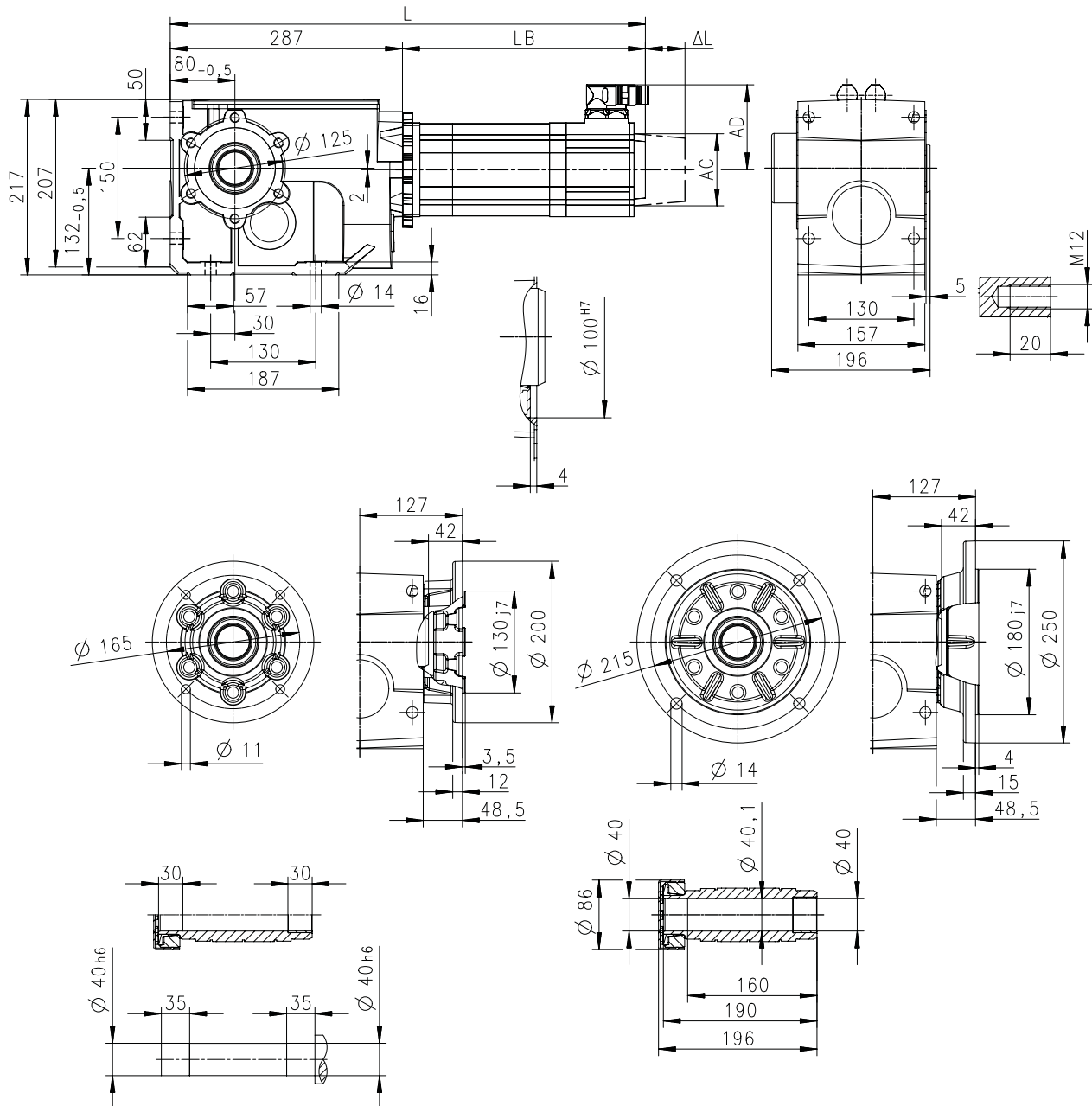
Technical data

Dimensions
Basic dimensions



g500-B600, 3-stage

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800571-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	469	507	545	471	511	551	512	560	624
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	ΔL	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

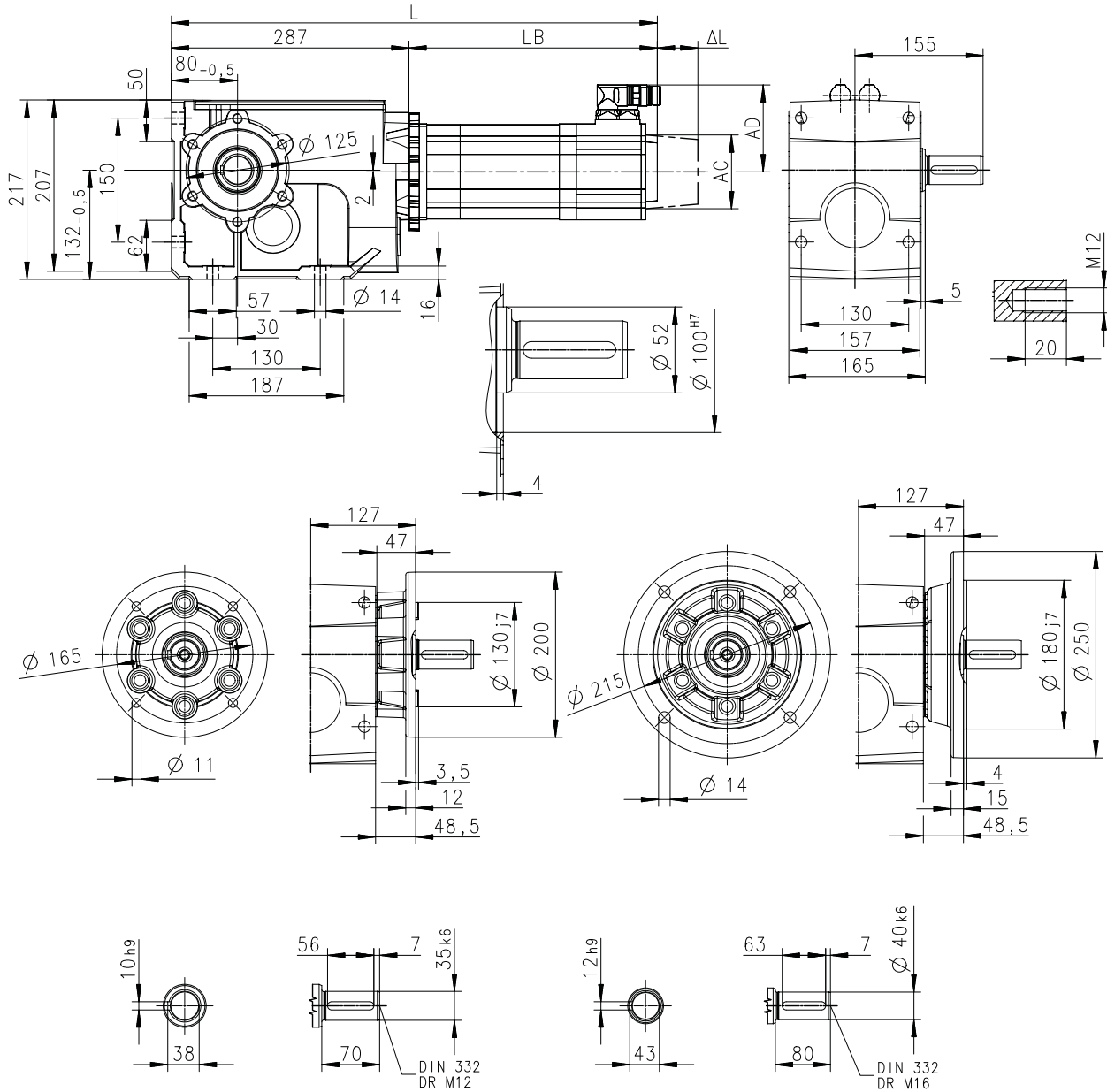


Technical data

Dimensions
Basic dimensions

g500-B600, 3-stage

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800570-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	469	507	545	471	511	551	512	560	624
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

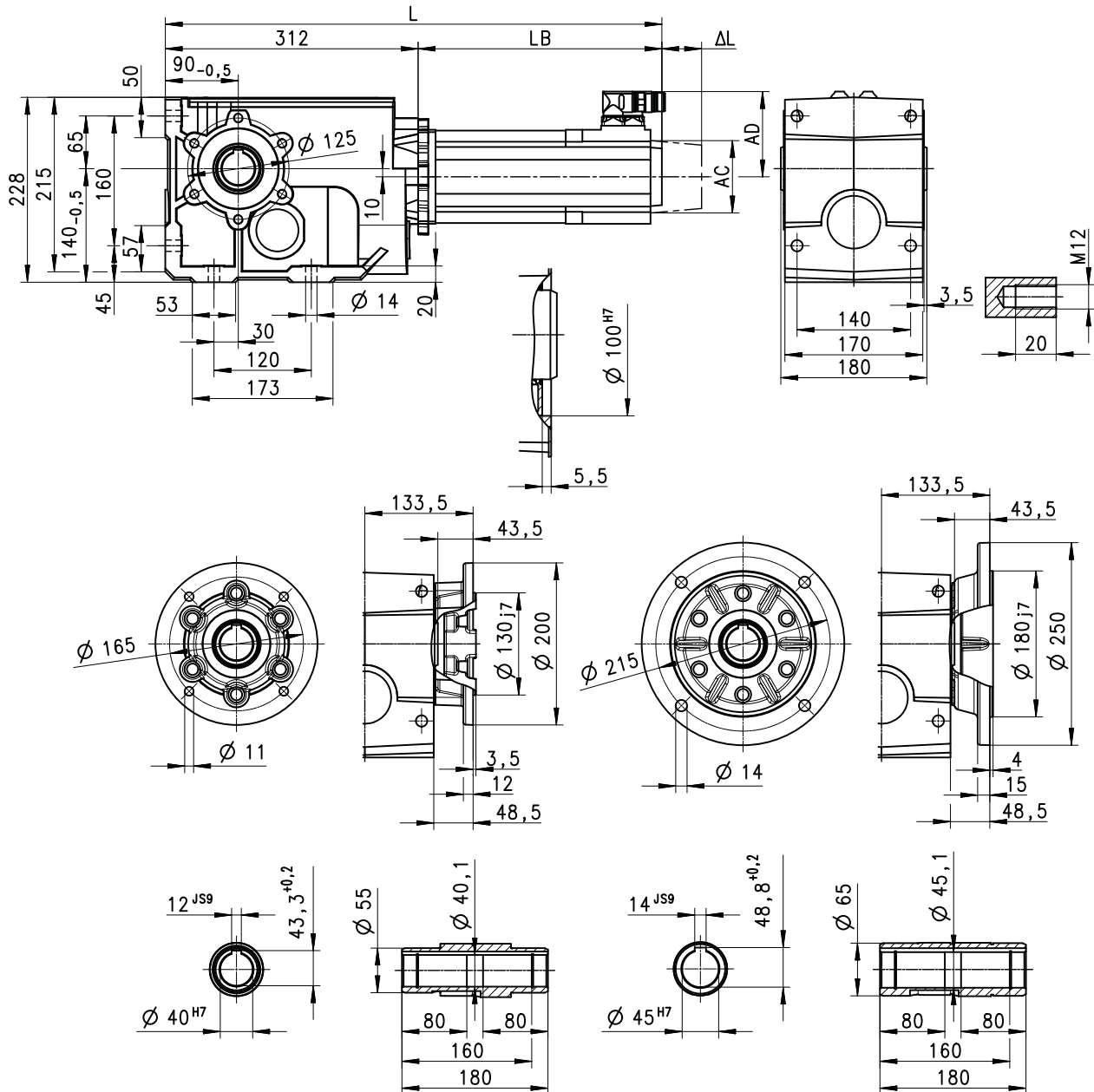
Technical data

Dimensions
Basic dimensions



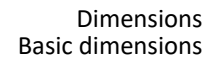
g500-B820, 3-stage

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



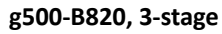
8800572-02

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	494	532	570	496	536	576	537	585	649
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158



Dimensions

Basic dimensions



Technical drawing of a 100 mm diameter hydraulic cylinder with 16 MPa pressure rating. The drawing includes a front view, a side view, a top view, a bottom view, and a cross-section of the end cap. Dimensions are given in mm. Key features include a 125 mm bore, 16 MPa pressure rating, and various mounting options. The drawing is labeled '100' and '16 MPa'.

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	494	532	570	496	536	576	537	585	649
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

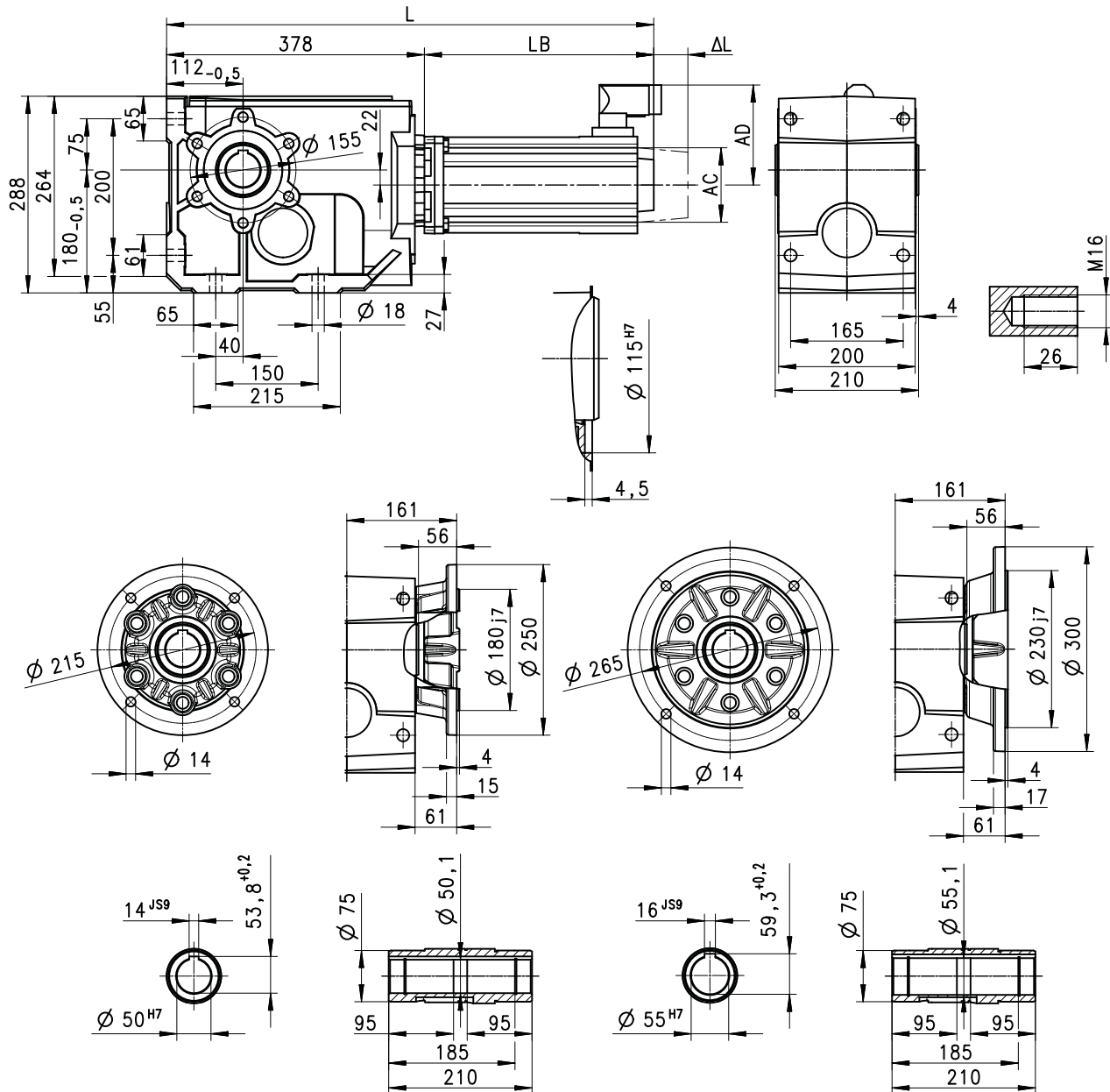


Technical data

Dimensions
Basic dimensions

g500-B1500, 3-stage

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800575-02

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	560	598	636	562	602	642	603	651	715
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	ΔL	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

Technical data

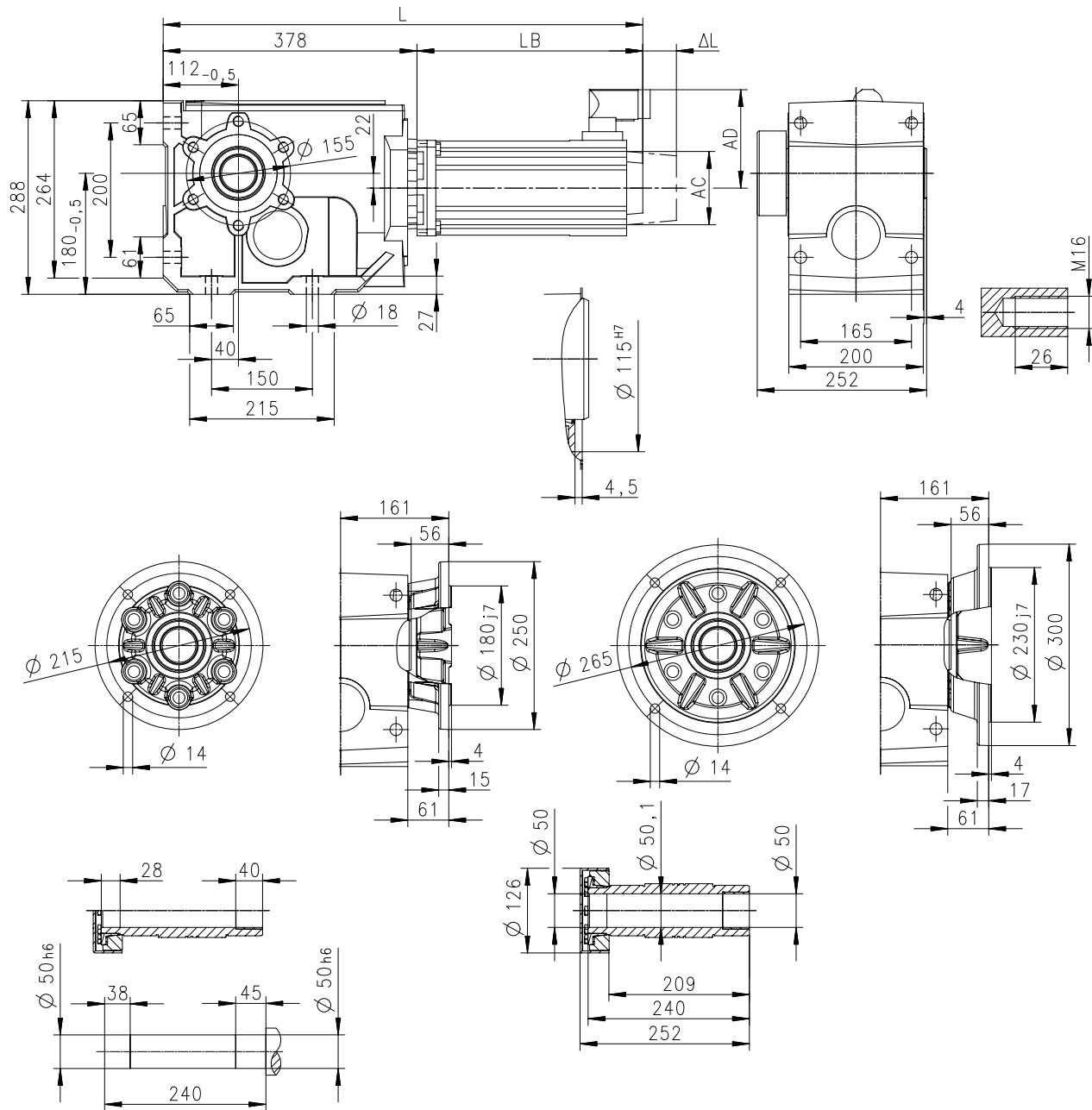
Dimensions

Basic dimensions



g500-B1500, 3-stage

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800577-00

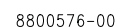
Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	560	598	636	562	602	642	603	651	715
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158



Dimensions

Basic dimensions

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)

93

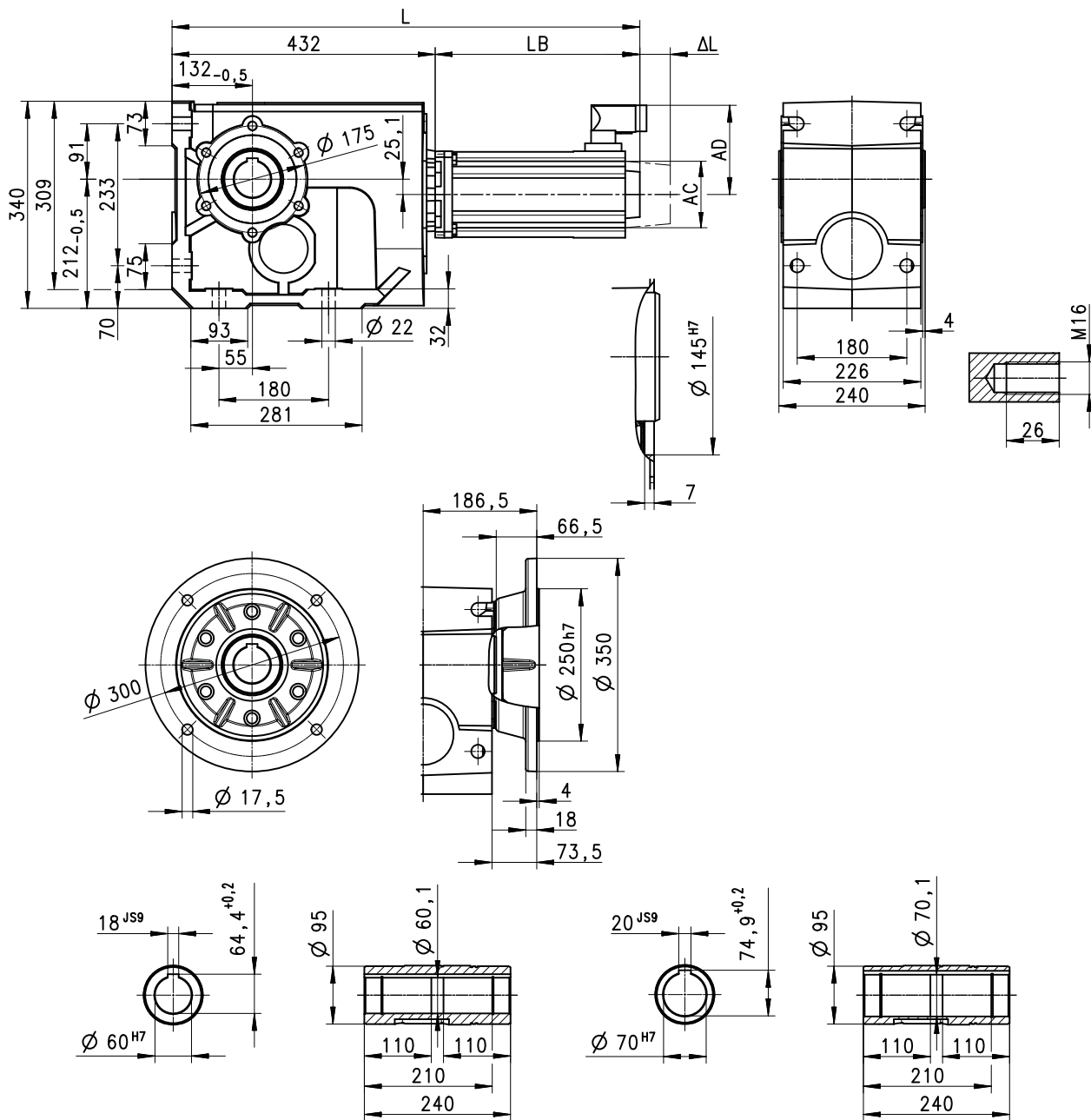
Technical data

Dimensions
Basic dimensions



g500-B2700, 3-stage

Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800578-02

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	614	652	690	616	656	696	657	705	769
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	ΔL	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

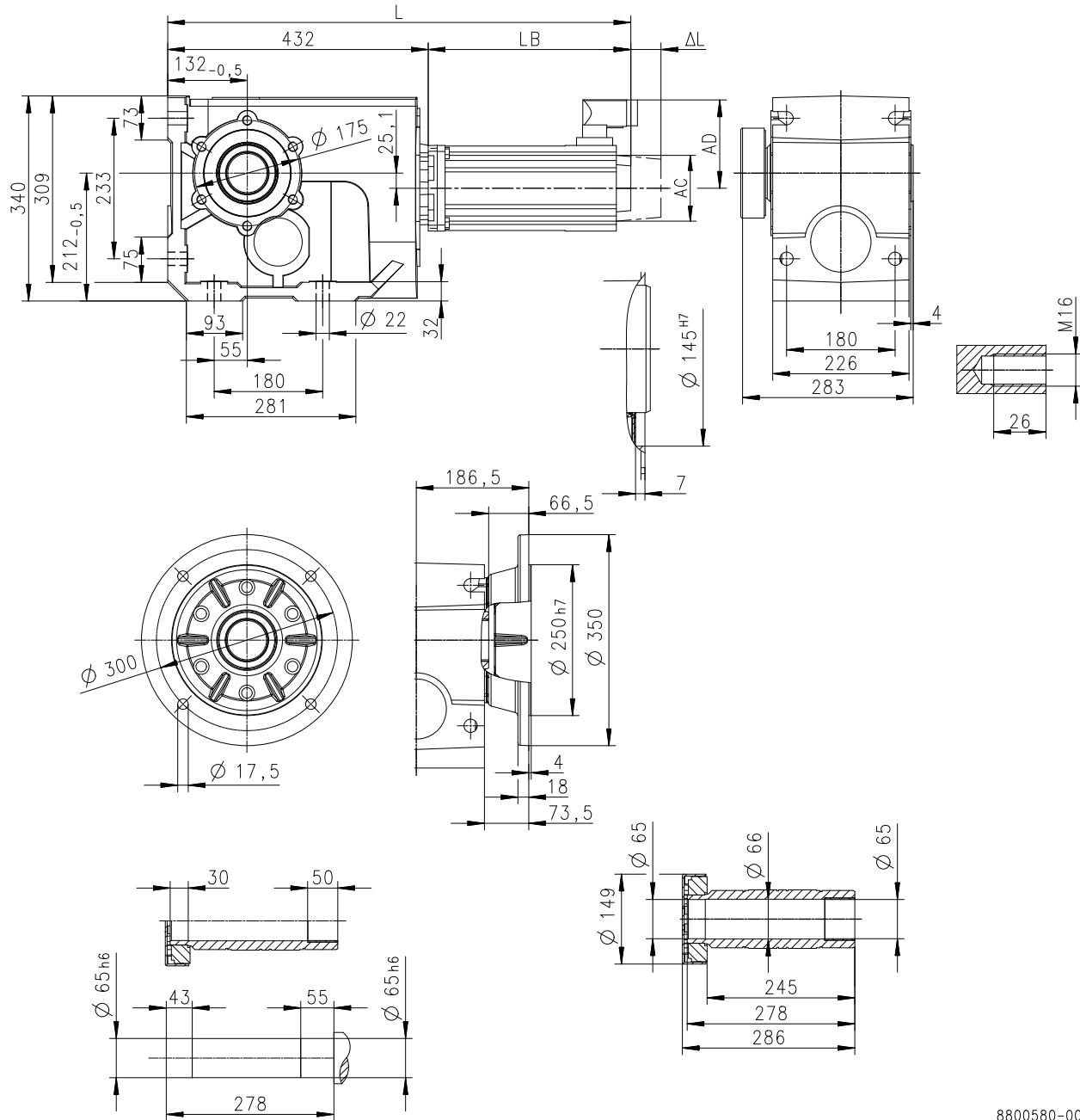


Technical data

Dimensions
Basic dimensions

g500-B2700, 3-stage

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800580-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	614	652	690	616	656	696	657	705	769
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	ΔL	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

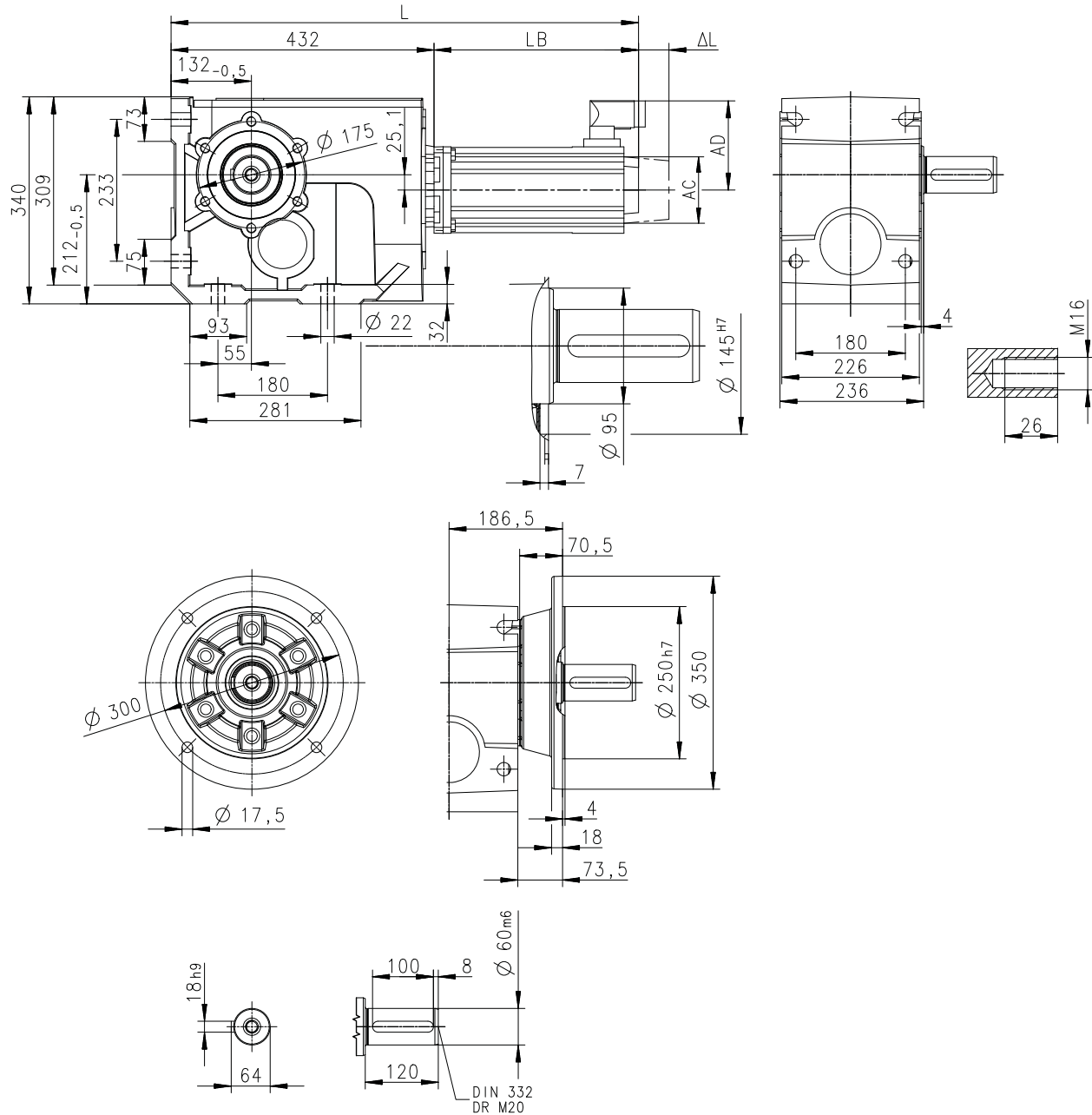
Technical data

Dimensions
Basic dimensions



g500-B2700, 3-stage

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800579-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	614	652	690	616	656	696	657	705	769
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	ΔL	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

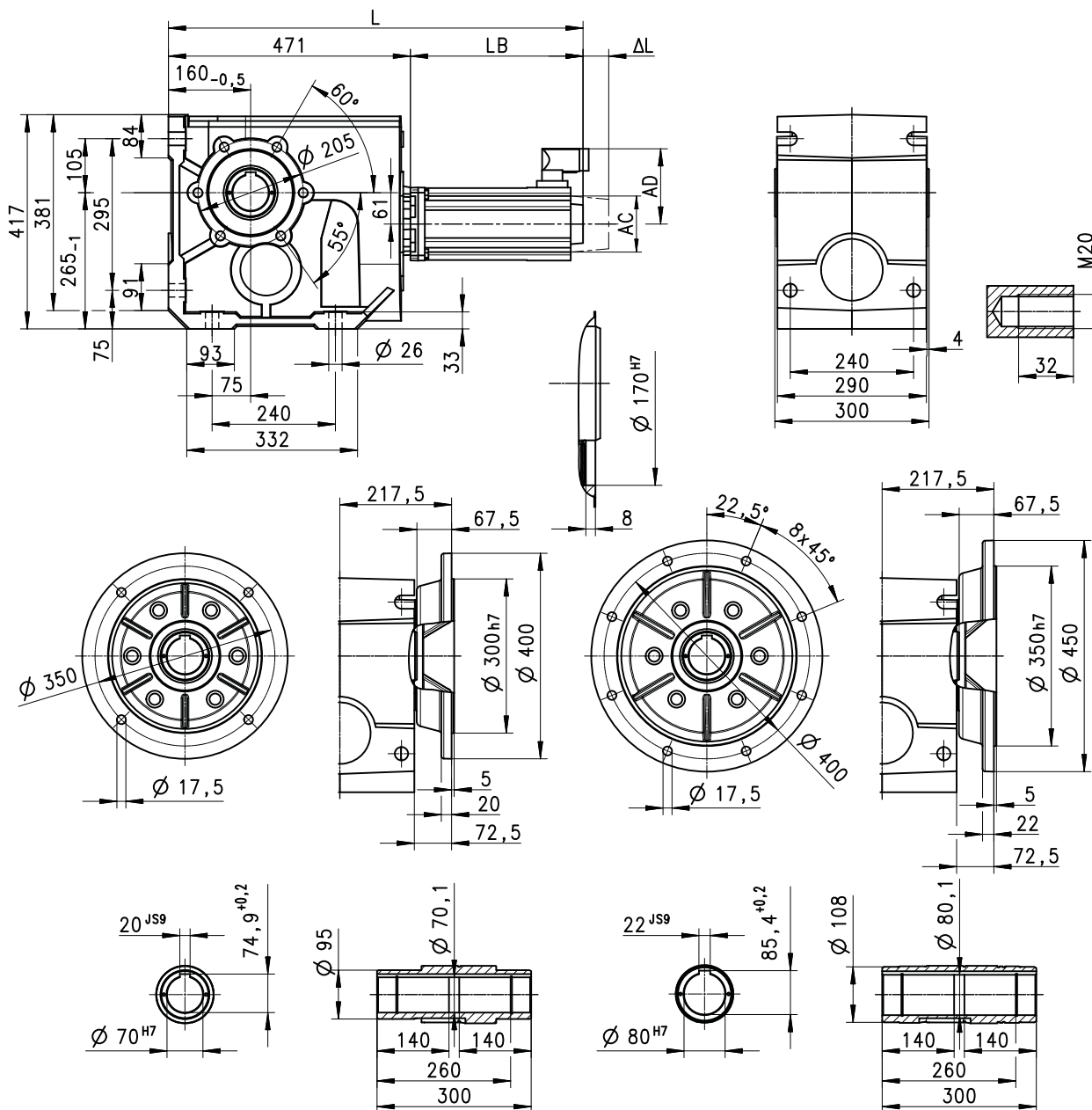


Technical data

Dimensions
Basic dimensions

g500-B4300, 3-stage

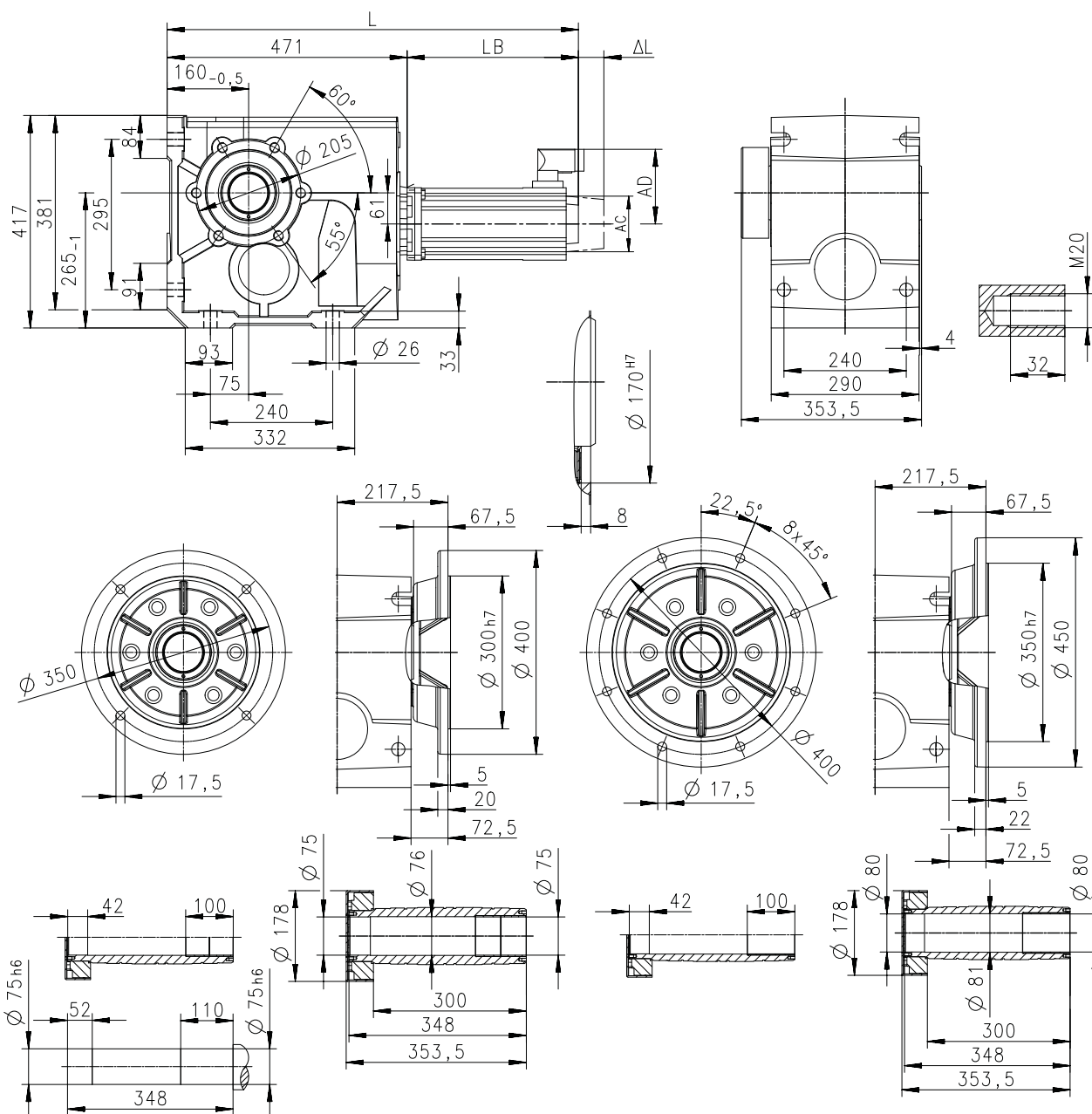
Gearbox version: Hollow shaft with foot (HAR/HBR/HAK)



8800581-02

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	653	691	729	655	695	735	696	744	808
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

Gearbox version: Hollow shaft with shrink disc, with foot (SAR/SBR/SAK)



8800583-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	653	691	729	655	695	735	696	744	808
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

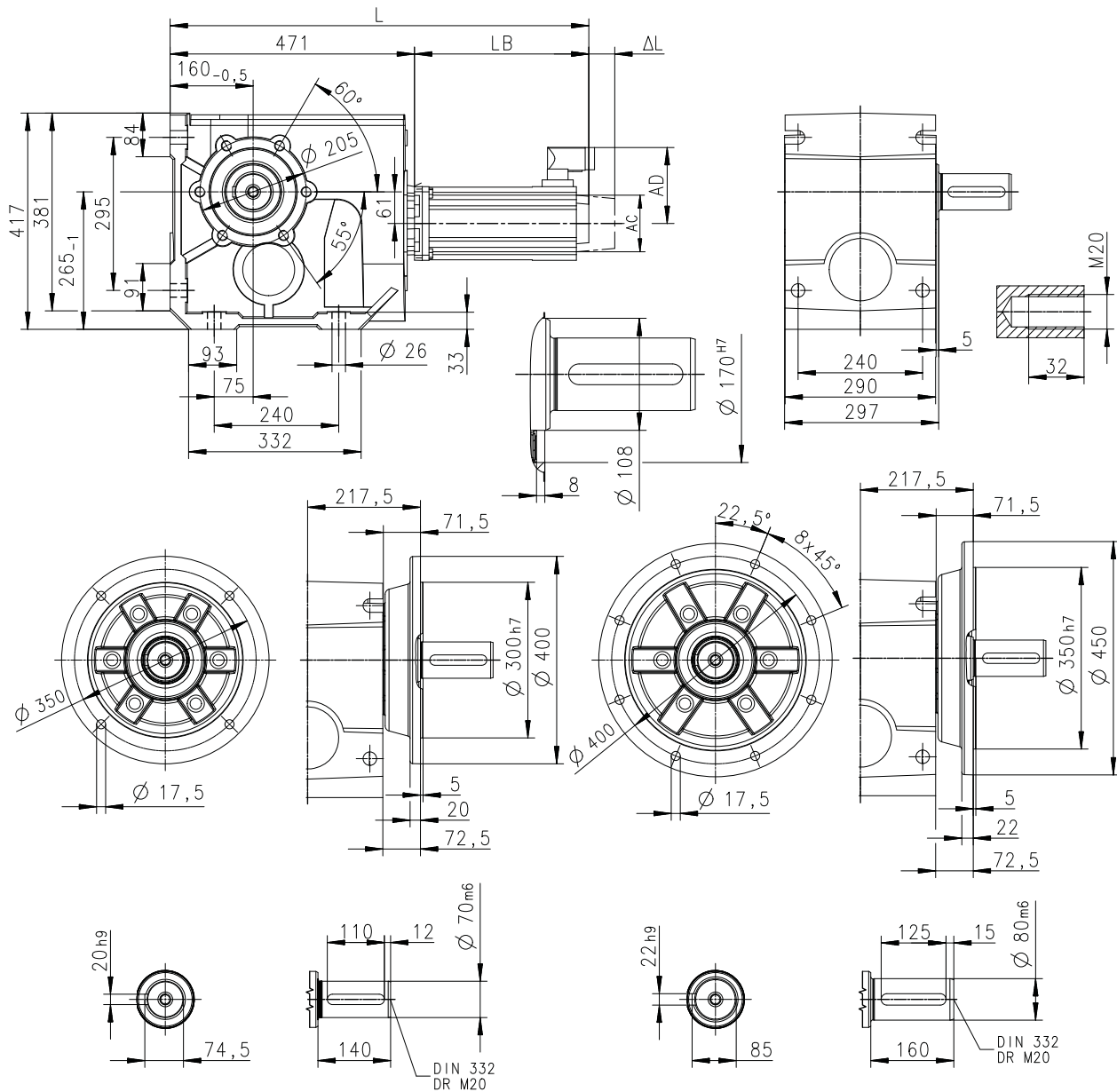


Technical data

Dimensions
Basic dimensions

g500-B4300, 3-stage

Gearbox version: Solid shaft with foot (VAR/VBR/VAK)



8800582-00

Motor			m850-								
			S120/ S3960	S120/ M3960	S120/ L3960	S140/ S3240	S140/ M3240	S140/ L3240	S190/ S3000	S190/ M3000	S190/ L2520
Total length	L	mm	653	691	729	655	695	735	696	744	808
Motor length	LB	mm	182	220	258	184	224	264	225	273	337
Length of motor options	Δ L	mm	46	46	46	53	53	53	68	68	68
Motor diameter	AC	mm	121	121	121	142	142	142	190	190	190
Motor/connection distance	AD	mm	102	102	102	114	114	135	137	158	158

Technical data

Dimensions
Gearbox with pre-stage



Gearbox with pre-stage

g500-B110, 3-stage

g500-B240 ... B4300, 4-stage

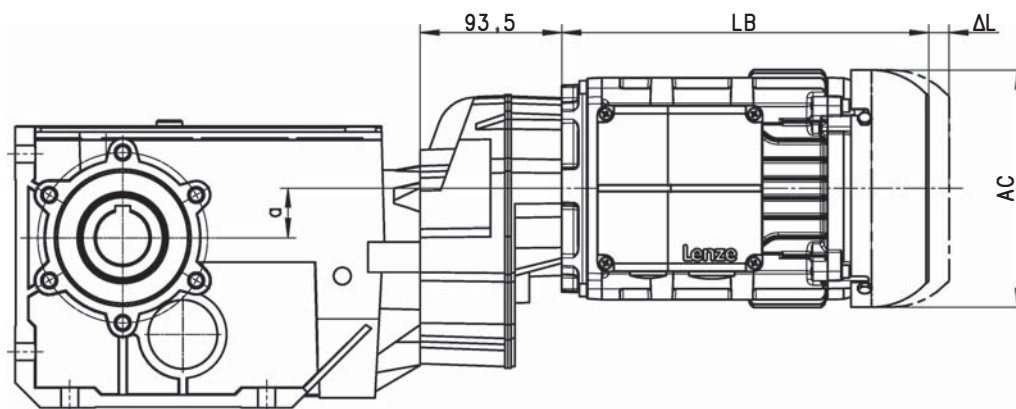


The geared motor dimensions can be found in the basic dimensions, except the total length "L" and the center distance "a".

► [Basic dimensions](#) 76

The total length "L" in the basic dimensions is extended by the 93.5 mm of the pre-stage.

Pay attention to the altered center distance "a" between the gearbox and motor shaft.



8801277-00

Gearboxes			g500-B110	g500-B240	g500-B450	g500-B600	g500-B820	g500-B1500	g500-B2700	g500-B4300
			3-stage	4-stage						
Center distance	a	mm	81	85	32.4	43	35	23	19.9	16

Additional lengths

Motors

Motor			m850-		
			S120/S3960 S120/M3960 S120/L3960	S140/S3240 S140/M3240 S140/L3240	S190/S3000 S190/M3000 S190/L2520
Spring-applied holding brake	Δ L	mm	46	53	68



Technical data

Weights
Basic weights

Weights

Basic weights



The basic weights are listed in the selection tables.

Weights with lubricant for mounting position M1, all data approximate values.
The exact values can be found in the delivery documents

► [Selection tables](#)  55

Observe ► [Additional weights](#)  101!

Additional weights

Gearboxes

Gearboxes			g500-B45	g500-B110	g500-B240	g500-B450
Solid shaft	m	kg	0.4	0.5	1.4	1.0
Shrink disc	m	kg	0.2	0.2	0.7	0.6
Flange	m	kg	0.3	0.4	0.7	0.9
Torque plate						
Threaded pitch circle	m	kg	0.3	0.5	1.3	2.5
Housing foot	m	kg	-	-	2.4	1.1
Housing foot, GKS compatible	m	kg	-	-	-	-
Shaft cover						
Shrink disc cover	m	kg	0.1	0.1	0.1	0.1
Hollow shaft cover, hoseproof	m	kg	0.1	0.1	0.1	0.2

Gearboxes			g500-B600	g500-B820	g500-B1500	g500-B2700	g500-B4300
Solid shaft	m	kg	1.5	1.9	3.7	6.0	15.5
Shrink disc	m	kg	0.6	1.2	1.7	2.3	4.3
Flange	m	kg	6.1	6.1	11.5	15.0	29.0
Torque plate							
Threaded pitch circle	m	kg	2.5	2.5	4.5	-	-
Housing foot	m	kg	2.8	3.0	4.3	10	13
Housing foot, GKS compatible	m	kg	5,0	5,0	8.2	16.5	30.5
Shaft cover							
Shrink disc cover	m	kg	0.1	0.1	0.2	0.3	0.4
Hollow shaft cover, hoseproof	m	kg	0.3	0.3	0.6	0.6	0.8

Motors

Motor			m850-		
			S120/S3960 S120/M3960 S120/L3960	S140/S3240 S140/M3240 S140/L3240	S190/S3000 S190/M3000 S190/L2520
Spring-applied holding brake	m	kg	2.0	3.0	6.7

Product extensions

Torque plates



Product extensions

Torque plates

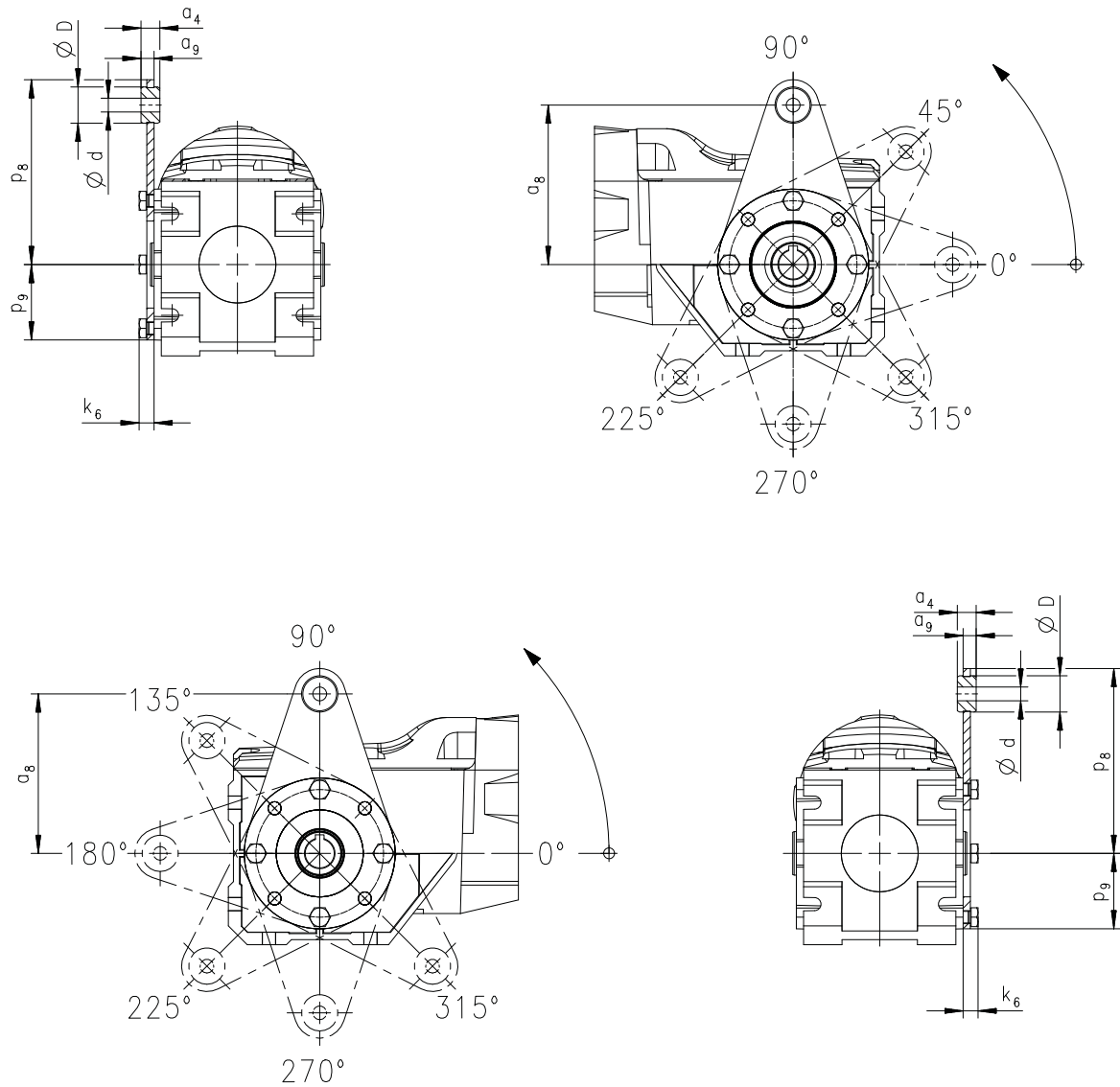
The torque support is usually effected by means of the foot or flange. The torque plates that can be fitted are another possibility. In this case, the torque support is provided only via one point and is suitable for shaft-mounted gearboxes, among other things. Supplied rubber buffers ensure a stress-free installation and absorb slight impacts.

The torque plates are available in two versions, for being installed at the existing threaded pitch circle or for the foot at the gearbox.

In addition, torque support for the g500-B45 gearbox can be effected via the holding fixture of the housing which is integrated on both sides.



Torque plate on threaded pitch circle
g500-B45 ... B110



e4001537-00

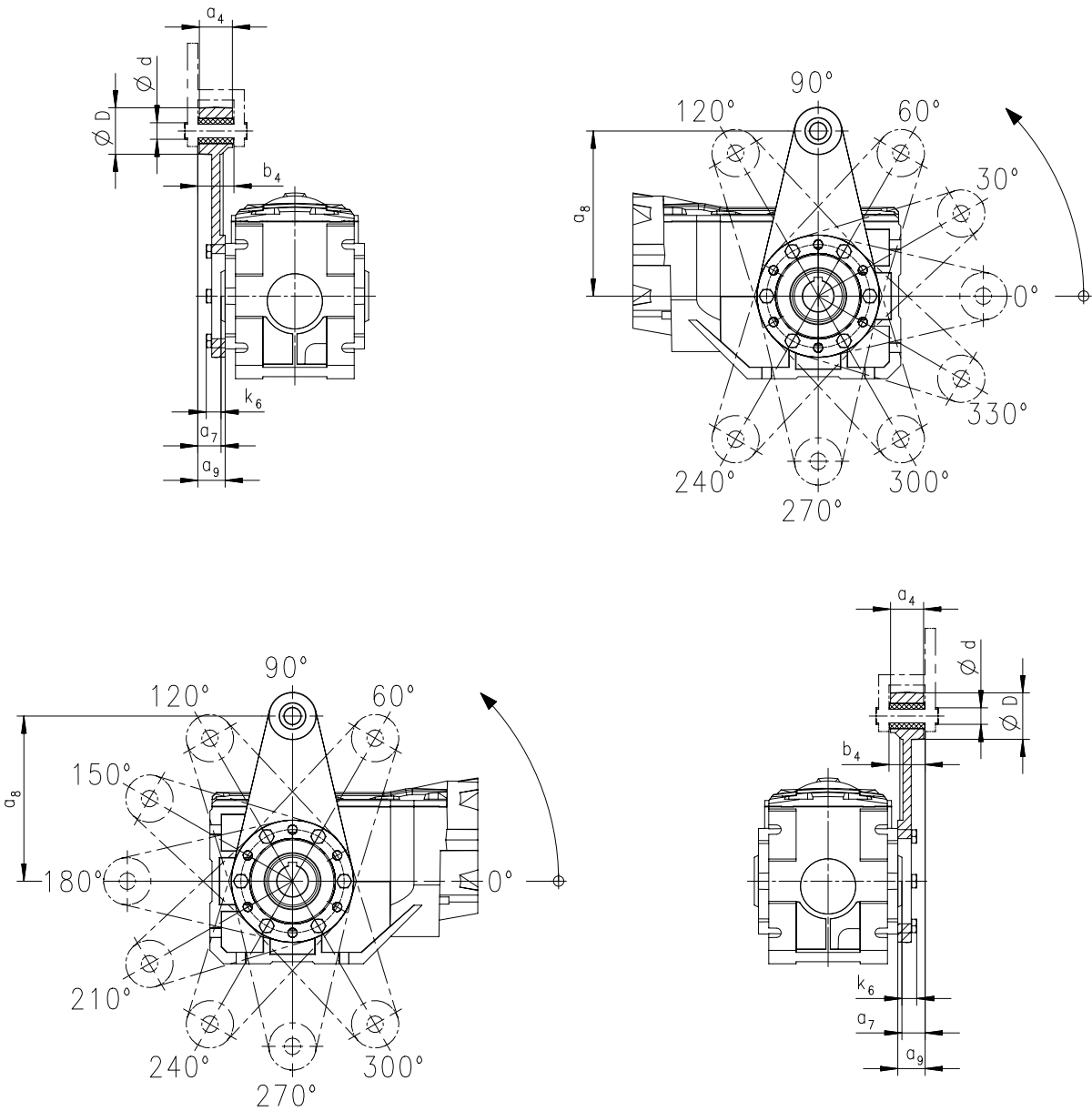
Gearboxes	Dimensions							
	a_4	a_8	a_9	d	D	p_8	p_9	k_6
	mm	mm	mm	mm	mm	mm	mm	mm
g500-B45	12.0	100	8.0	8.0	20,0	115	42.0	9.0
g500-B110	13.0	110	9.0	10.0	25.0	128	54.0	11.0

Product extensions

Torque plates



g500-B240 ... B600



e4001538-00

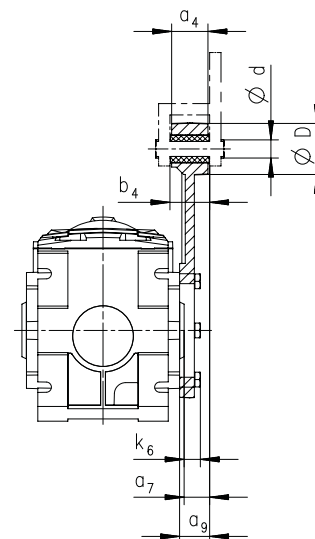
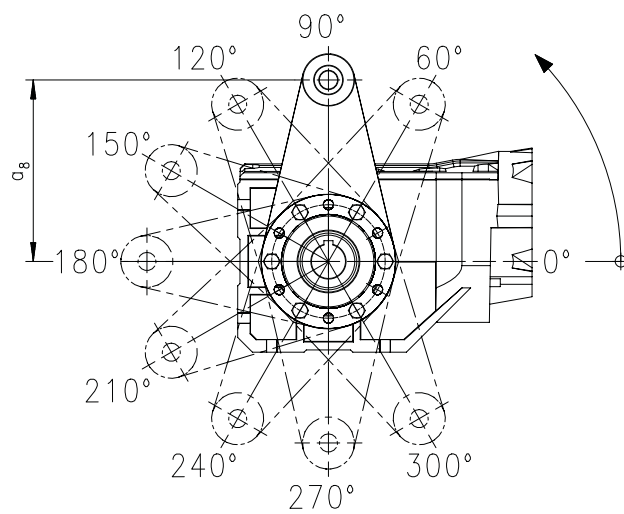
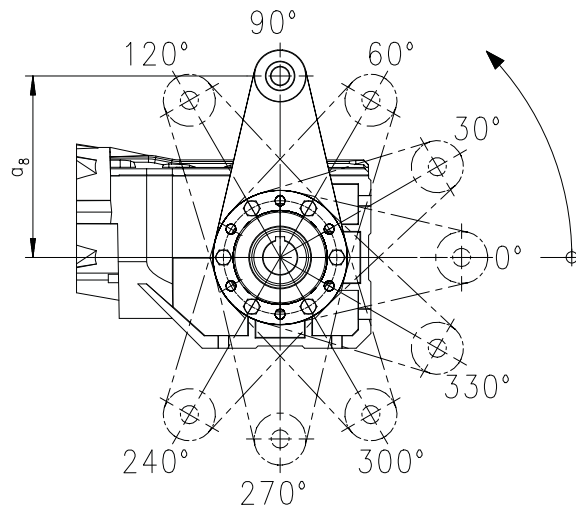
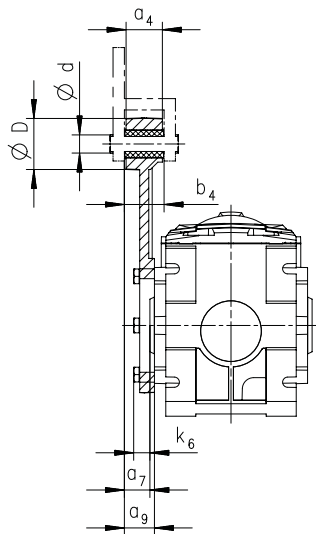
Gearboxes	Dimensions							
	a ₄	a ₇	a ₈	a ₉	b ₄	d	D	k ₆
	mm	mm	mm	mm	mm	mm	mm	mm
g500-B240	34.0	23.5	160	27.5	38.5	16.0	45.0	15.0
g500-B450	40,0	29.0	200	32.0	44.5	20,0	50.0	18.0
g500-B600	38.0	26.5	200	31.5	40,0	20,0	50.0	19.0



Product extensions

Torque plates

g500-B820 ... B1500



e4001538-00

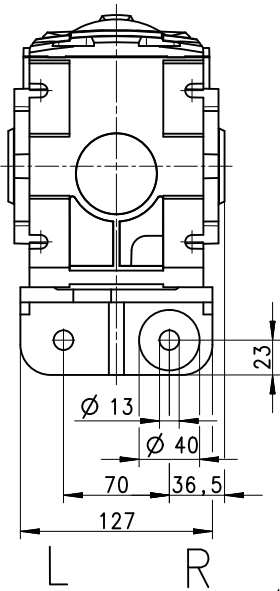
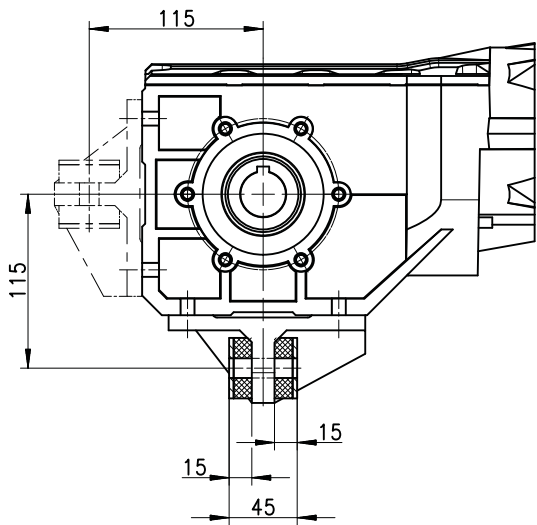
Gearboxes	Dimensions							
	a ₄	a ₇	a ₈	a ₉	b ₄	d	D	k ₆
	mm	mm	mm	mm	mm	mm	mm	mm
g500-B820	38.0	28.0	200	31.5	40.0	20.0	50.0	20.5
g500-B1500	44.0	32.0	250	36.0	46.0	25.0	65.0	24.0

Product extensions

Torque plates



Torque plate on housing foot g500-B240



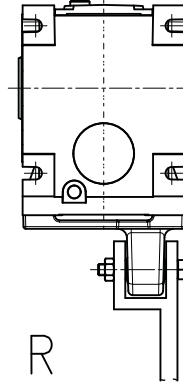
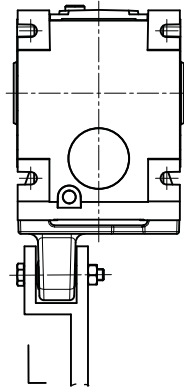
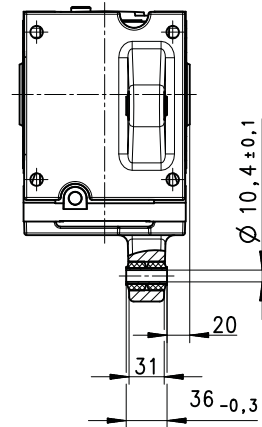
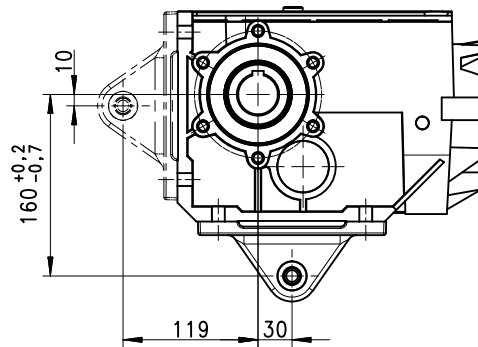
e4001541-01



Product extensions

Torque plates

g500-B450



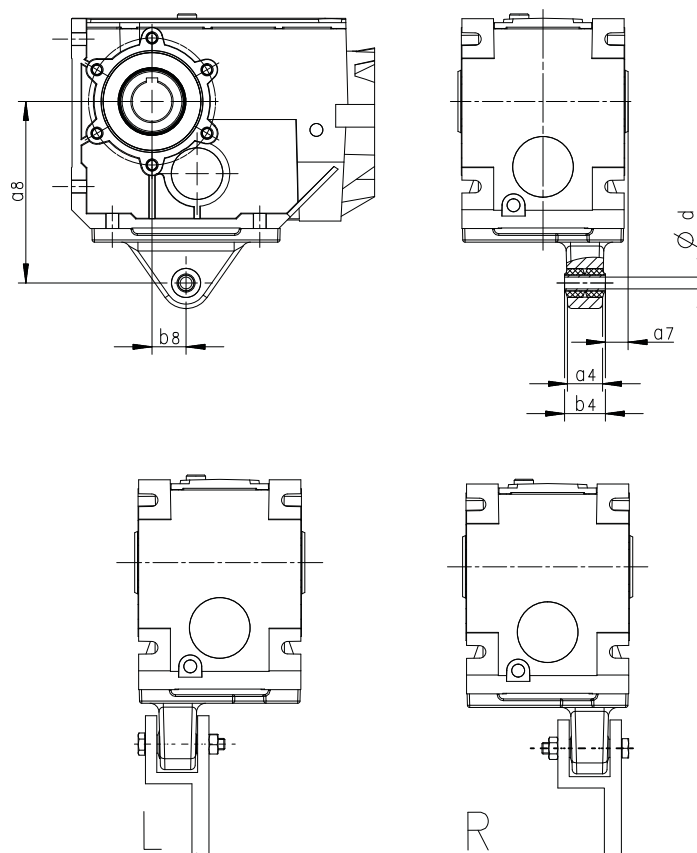
e4001554_01

Product extensions

Torque plates



g500-B600 ... B4300



e4002718-01

Gearboxes	Dimensions					
	d	a ₈	b ₈	a ₄	b ₄	a ₇
	mm	mm	mm	mm	mm	mm
g500-B600	16.4	192	40,0	55.0	60.0	18.0
g500-B820	16.4	200	45.0	55.0	60.0	25.0
g500-B1500	16.4	250	52.5	55.0	60.0	25.0
g500-B2700	25.0	300	60.0	72.0	80.0	30.0
g500-B4300	25.0	350	70.0	92.0	100	40,0



Product extensions

Torque plates

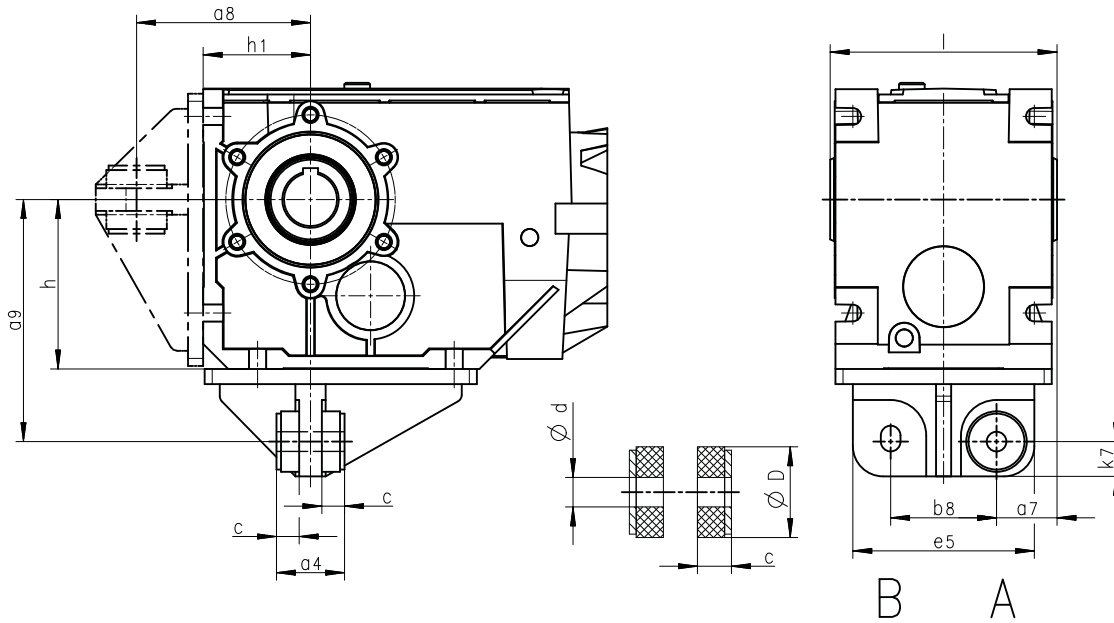
GKS compatible



The connection dimensions are identical to the previous product GKS for these torque plates.

The GKS gearbox can be replaced by the gearbox from the g500-B series.

g500-B600 ... B4300



Gearboxes		Dimensions											
	Replacement for	a_4	a_7	a_8	a_9	b_4	b_8	c	$\varnothing d$	$\varnothing D$	e_5	k_7	k_8
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
g500-B600	GKS06	72	45.0	145	195	72	80	27	17	50	135	28.0	26.0
g500-B820	GKS06	72	50.0	145	195	72	80	27	17	50	140	27.5	27.5
g500-B1500	GKS07	78	55.0	170	240	78	100	28	21	60	180	30.0	32.0
g500-B2700	GKS09	86	60.0	214	300	86	120	29	26	72	205	42.0	48.0
g500-B4300	GKS11	94	77.5	260	375	94	145	30	33	92	255	50.0	60.0

Product extensions

Shaft covers



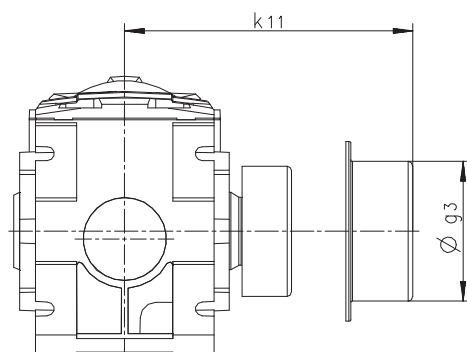
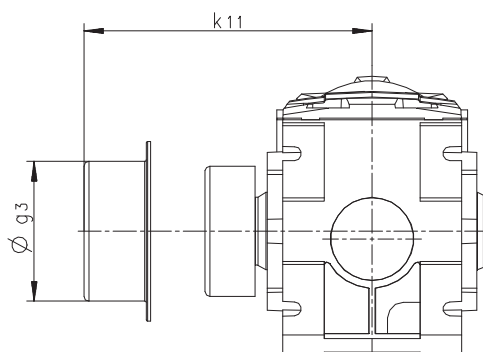
Shaft covers

The shrink disc cover is provided for the shrink disc to be protected from contact.

The hoseproof hollow shaft cover protects the hollow shaft from objects falling in. It is sealed by a flat gasket between cover and housing. Thus, the hollow shaft is protected from dust and water jets on this side.

Shrink disc cover

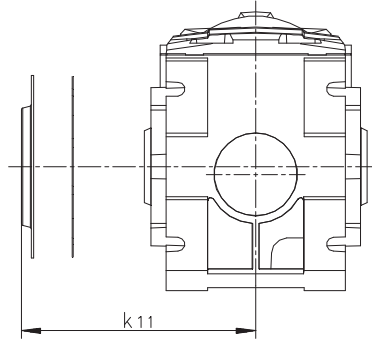
g500-B45 ... B4300



Product	Dimensions	
	g3	k11
	mm	mm
g500-B45	65.0	87.5
g500-B110	79.0	97.5
g500-B240	90.0	111
g500-B450	90.0	108
g500-B600	110	124
g500-B820	110	131
g500-B1500	128	148
g500-B2700	155	171
g500-B4300	188	205



Hollow shaft cover, hoseproof
g500-B45 B4300



Product	Dimensions
	k_{11}
	mm
g500-B45	55.0
g500-B110	65.0
g500-B240	75.0
g500-B450	79.5
g500-B600	90.0
g500-B820	97.0
g500-B1500	113
g500-B2700	131
g500-B4300	161

Product extensions

Motor connection
Connection via ICN connector



Motor connection

Connection via ICN connector

The electrical connection to the servo motors as a standard is established via ICN connectors.

The connection is made via two plug connectors, one for power and brake and one for feedback and temperature monitoring. Alternatively, Lenze offers One Cable Technology (OCT).

The connectors can be rotated by 270 ° and are provided with a bayonet catch. Since the catch of the connector is also compatible with conventional box nuts, existing mating connectors with a screw plug can continue to be used without any problems.



In order to provide for a quick and error-free connection of Lenze motors to Lenze inverters, we recommend using prefabricated Lenze system cables.

One Cable Technology (OCT)

With the aid of the open motor feedback protocol HIPERFACE DSL® and the digital absolute value encoders, the motor supports the future-oriented One Cable Technology (OCT).

Advantages

- All necessary wiring is done in only one connector.
- The use of hybrid cables allows for combined servo and feedback cables.
- This intelligently minimizes connecting cables, cable variants, and connection costs.
- The motor temperature is transmitted digitally together with the encoder signal. An additional connection for a motor temperature sensor is not required.
- Speed-dependent safety functions can be implemented by using the safety-rated absolute value encoder.



Pre-assembled hybrid cables for single-cable technology (OCT) can be found at the end of this chapter.

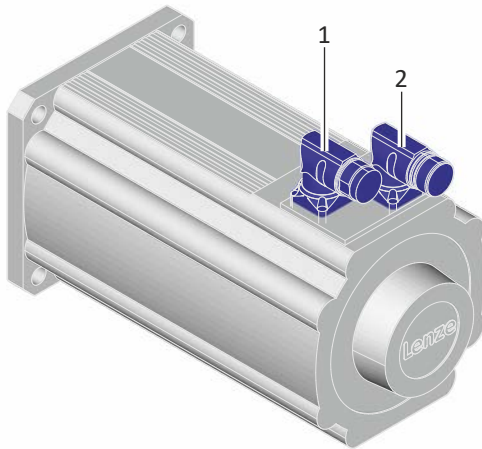


Product extensions

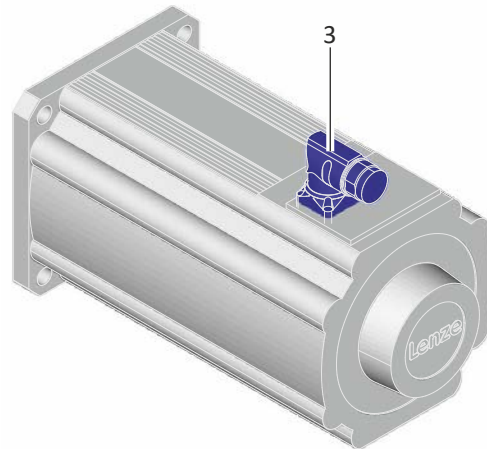
Motor connection
Connection via ICN connector

Position of the connections

Standard connection



One Cable Technology (OCT)



Position	Meaning	Position	Meaning
1	ICN-M23 connector, 6-pole ICN-M40 connector, 8-pole - Power connection - Brake connection - PE connection	3	For One Cable Technology (OCT) ICN-M23 connector, hybrid ICN-M40 connector, hybrid - Power connection - Brake connection - PE connection - Connection of digital absolute value encoder - Connection of temperature monitoring
2	ICN-M23 connector - Feedback connection - Connection of temperature monitoring		

Motor/ICN connector assignment

Standard connection: Power and brake

One Cable Technology (OCT): Power connection, brake, feedback and temperature monitoring

Motor	Connector	Motor	Connector	Motor	Connector
m850-S120/S3960	ICN-M23	m850-S140/S3240	ICN-M23	m850-S190/S3000	ICN-M23
m850-S120/M3960	ICN-M23	m850-S140/M3240	ICN-M23	m850-S190/M3000	ICN-M40
m850-S120/L3960	ICN-M23	m850-S140/L3240	ICN-M40	m850-S190/L2520	ICN-M40

Product extensions

Motor connection
Connection via ICN connector

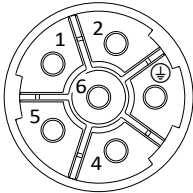


Standard connection

Connection of power and brake

ICN-M23 connector assignment

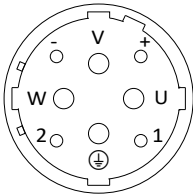
6-pole



ICN M23 6-pole		
Contact	Name	Meaning
PE	PE	PE conductor
1	BD1	DC +/-AC brake
2	BD2	DC -/AC brake
4	U	Power phase U
5	V	Power phase V
6	W	Power phase W

ICN-M40 connector assignment

8-pole



ICN M40 8-pole		
Contact	Name	Meaning
+	BD1	Holding brake +
-	BD2	Holding brake -
PE	PE	PE conductor
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W
1		Not assigned
2		Not assigned



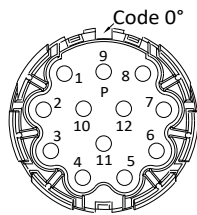
Product extensions

Motor connection
Connection via ICN connector

Feedback and temperature monitoring connection

ICN-M23 connector assignment

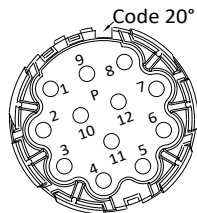
Resolver



ICN M23 for resolvers		
Contact	Name	Meaning
1	+Ref	Transformer windings
2	-Ref	Transformer windings
3	+VCC ETS	Supply: Electronic nameplate (Only for motors and inverters that support this function)
4	+COS	Cosine stator windings
5	-COS	Cosine stator windings
6	+SIN	Sine stator windings
7	-SIN	Sine stator windings
8		Not assigned
9		Not assigned
10	Schirm	Encoder housing shield
11	+	Temperature monitoring: PT1000
12	-	Temperature monitoring: PT1000

ICN-M23 connector assignment

Incremental and SinCos absolute value encoder Hiperface©



ICN M23 for incremental and SinCos absolute value encoder Hiperface		
Contact	Name	Meaning
1	B	Track B / +SIN
2	A ⁻	Track A inverse /-COS
3	A	Track A / + COS
4	+UB	Supply +
5	GND	Mass
6	Z ⁻	Zero track inverse /-RS485
7	Z	Zero track / + RS485
8		Not assigned
9	B ⁻	Track B inverse/-SIN
10	Schirm	Encoder housing shield
11	+	Temperature monitoring: PT1000
12	-	Temperature monitoring: PT1000

Product extensions

Motor connection
Connection via ICN connector



Motor/connector assignment

NOTICE

When making your selection, the motor data and permissible currents of the cables according to the system cable system manual must be observed.

Power terminal connectors

Motor code		m850-				
		S120/S3960	S120/M3960	S120/L3960	S140/S3240	S140/M3240
Plug		ICN-M23 6-pole				
Motor cable	mm ²	1.0/1.5/2.5				
Screw plug						
Order code		EWS0001				
Coding in the system cable type code		M01				
Bayonet lock						
Order code		EWS1001				
Coding in the system cable type code		M04				

Motor code		m850-				
		S140/L3240		S190/S3000	S190/M3000	S190/L2520
Plug		ICN-M40 8-pole		ICN-M23 6-pole	ICN-M40 8-pole	
Motor cable	mm ²	2.5/4.0	6.0/10/16	1.0/1.5/2.5	6.0/10/16	
Screw plug						
Order code		EWS0012	EWS0013	EWS0001	EWS0013	
Coding in the system cable type code		M02	M03	M01	M03	
Bayonet lock						
Order code		EWS1012	EWS1013	EWS1001	EWS1013	
Coding in the system cable type code		M05	M06	M04	M06	

Feedback connectors

Feedback	Resolver	SinCos absolute value Hiperface
Plug	ICN-M23	ICN-M23
Screw plug		
Order code	EWS0006	EWS0010
Coding in the system cable type code	F01	F02
Bayonet lock		
Order code	EWS1006	EWS1010
Coding in the system cable type code	F05	F06

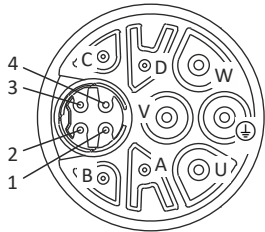


One Cable Technology (OCT)

Connection of power, brake, feedback and temperature monitoring

ICN-M23 connector assignment, hybrid

For One Cable Technology (OCT) with digital absolute value encoder



ICN M23 Hybrid for One Cable Technology (OCT) with digital absolute value encoder		
Contact	Name	Meaning
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W
PE	PE	PE
A	BD1	Holding brake +
B	BD2	Holding brake -
C	+	Optional temperature monitoring: PTC +
D	-	Optional temperature monitoring: PTC -
1		Not assigned
2	+	VCC/data +
3	-	GND/data -
4		Not assigned

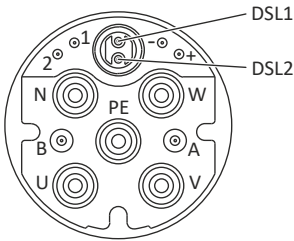
Product extensions

Motor connection
Connection via ICN connector



ICN-M40 connector assignment, hybrid

For One Cable Technology (OCT) with digital absolute value encoder



ICN M40 Hybrid for One Cable Technology (OCT) with digital absolute value encoder		
Contact	Name	Meaning
U	U	Power phase U
V	V	Power phase V
W	W	Power phase W
A	BD1	Holding brake +
B	BD2	Holding brake -
PE	PE	PE
N		Not assigned
DSL1	+	VCC/data +
DSL2	-	GND/data -
+		Not assigned
-		Not assigned
1	+	Optional temperature monitoring: PTC +
2	-	Optional temperature monitoring: PTC -



Product extensions

Motor connection
Connection via ICN connector

Hybrid cables for One Cable Technology (OCT)

Connector with bayonet lock	ICN-M23 Hybrid
Order code for hybrid cable 1.5 mm ²	
Cable length 2.0 m	EYP0080A0020M11A00
Cable length 3.5 m	EYP0080A0035M11A00
Cable length 5.0 m	EYP0080A0050M11A00
Cable length 7.5 m	EYP0080A0075M11A00
Cable length 10 m	EYP0080A0100M11A00
Cable length 15 m	EYP0080A0150M11A00
Cable length 20 m	EYP0080A0200M11A00
Cable length 50 m	EYP0080A0500M11A00
Cable length 100 m	EYP0080A1000M11A00
Order code for hybrid cable 2.5 mm ²	
Cable length 2.0 m	EYP0081A0020M11A00
Cable length 3.5 m	EYP0081A0035M11A00
Cable length 5.0 m	EYP0081A0050M11A00
Cable length 7.5 m	EYP0081A0075M11A00
Cable length 10 m	EYP0081A0100M11A00
Cable length 15 m	EYP0081A0150M11A00
Cable length 20 m	EYP0081A0200M11A00
Connector with bayonet lock	ICN-M40 Hybrid
Order code for hybrid cable 4.0 mm ²	
Cable length 2.0 m	EYP0085A0020M12A00
Cable length 3.5 m	EYP0085A0035M12A00
Cable length 5.0 m	EYP0085A0050M12A00
Cable length 7.5 m	EYP0085A0075M12A00
Cable length 10 m	EYP0085A0100M12A00
Cable length 15 m	EYP0085A0150M12A00
Cable length 20 m	EYP0085A0200M12A00
Cable length 50 m	EYP0085A0500M12A00
Cable length 100 m	EYP0085A1000M12A00
Order code for hybrid cable 6.0 mm ²	
Cable length 2.0 m	EYP0086A0020M12A00
Cable length 3.5 m	EYP0086A0035M12A00
Cable length 5.0 m	EYP0086A0050M12A00
Cable length 7.5 m	EYP0086A0075M12A00
Cable length 10 m	EYP0086A0100M12A00
Cable length 15 m	EYP0086A0150M12A00
Cable length 20 m	EYP0086A0200M12A00
Cable length 50 m	EYP0086A0500M12A00
Cable length 100 m	EYP0086A1000M12A00



Brakes

⚠ CAUTION!

They may not be used as safety elements (particularly with hoist axes) without additional measures being implemented.

The brakes used are not fail-safe brakes in the sense that prospective disruptive factors, e.g. oil ingress, can lead to a reduction in torque!

- ▶ The brakes must only be used as holding brakes for holding the axes at a standstill or in the deenergised state.
- ▶ The brake must not be used as a service brake.

⚠ CAUTION!

If no suitable voltage (incorrect value, incorrect polarity) is applied to the brake, the brake will be applied and can be overheated and destroyed by the motor continuing to rotate.

Motor supply cables

If long motor supply cables are used, pay attention to the ohmic voltage drop along the cable and compensate for it with a higher voltage at the input end of the cable.

The following applies to Lenze system cables:

$U[V] = U_B[V] + 0.08 \frac{[V]}{[A] \times [m]} \times I_{Lg}[m] \times I_B[A]$	U	V	Resulting supply voltage
	U _B	V	Rated voltage of the brake
	I _{Lg}	m	Cable length
	I _B	A	Rated current of the brake

NOTICE

- ▶ The brakes become active when the supply voltage has been switched off (closed-circuit principle).
- ▶ When using the brakes purely as holding brakes, virtually no wear occurs on the friction surfaces.
- ▶ The friction surfaces must always be free from oil and grease because even small amounts of grease or oil will considerably reduce the braking torque.

NOTICE

In case of travel axes, the compliance of the permissible ratio of mass inertia load/brake motor (J_L/J_{MB}) ensures that the permissible maximum switching energy of the brake will not be exceeded and at least the values given for the emergency stop functions from the given speed (see rated data) are applied.

For hoist axes, the load torque resulting from the weight acts additionally. In this case, the specifications for (J_L/J_{MB}) do not apply.



To simplify matters, the friction energy per switching cycle can be calculated using the formula below and must not exceed the limit value for emergency stops, which depends on the switching rate:

$Q = \frac{1}{2} \times J_{\text{ges}} \times \left(2\pi \times \frac{\Delta n}{60} \right)^2 \times \frac{M_N}{M_N - M_L}$	Q	J	Friction energy
	J_{total}	kgm ²	Total mass inertia (motor + load)
	Δn	rpm	Differential speed
	M_N	Nm	Rated torque of the brake
	M_L	nM	Load torque



The shortest operating times of the brakes are achieved by DC switching of the voltage and an external suppressor circuit (varistor or spark suppressor).

Without suppressor circuit, the operating times may increase. A varistor/ spark suppressor limits the breaking voltage peaks. It must be ensured that the power limit of the suppressor circuit is not exceeded. This limit depends on the brake current, brake voltage, disengagement time and the switching operations per time unit.

Furthermore the suppressor circuit is necessary for interference suppression and for increasing the service life of the relay contacts (external, is not integrated into the motor).



It is not possible to readjust the brake.

Product extensions

Brakes
Spring-applied brakes



Spring-applied brakes

Rated data

NOTICE

Engagement and disengagement times apply to rated voltage ($\pm 0\%$) and suppressor circuit of the brakes with a varistor with DC switching. Without a suppressor circuit, the times may be longer.

The currents are the maximum values when the brake is cold (value used for dimensioning the current supply). The values for a motor at operating temperature are considerably lower.

Requirements with regard to the DC 24 V brake: smoothed DC voltage, ripple $\leq 1\%$.

Maximum switching energy for each emergency stop with $n = 3000$ rpm for a maximum of 3-6 emergency stops per hour.

Motor			m850-S120/ S3960	m850-S120/ M3960	m850-S120/ L3960	m850-S140/ S3240	m850-S140/ M3240	m850-S140/ L3240
Supply voltage range	V _{in}	V	21.6 ... 26.4					
Supply voltage	V _{rated}	V	24					
Bemessungsdrehmoment								
At 20 °C	M _{rated}	Nm	20			34		
At 120 °C	M _{rated}	Nm	18			32		
Rated current	I _{rated}	A	1.2			1.4		
Engagement time t1	t ₁	ms	30			50		
Disengagement time t2	t ₂	ms	110			150		
Friction energy	Q _E	kJ	3.1					
Weight	m	kg	2.0			3.0		
Massenträgheitsmoment								
Brake	J	kgcm ²	0.75			2.01		
Brake motor	J _{MB}	kgcm ²	7.5	13.3	19.2	18.1	32.5	46.9
Load/brake motor ratio	J _L /J _{MB}		74	47	32	34	19	13

Motor			m850-S190/S3000	m850-S190/M3000	m850-S190/L2520
Supply voltage range	V _{in}	V	21.6 ... 26.4		
Supply voltage	V _{rated}	V	24		
Bemessungsdrehmoment					
At 20 °C	M _{rated}	Nm	102		
At 120 °C	M _{rated}	Nm	100		
Rated current	I _{rated}	A	2.1		
Engagement time t1	t ₁	ms	40		
Disengagement time t2	t ₂	ms	230		
Friction energy	Q _E	kJ	5.7		
Weight	m	kg	6.70		
Massenträgheitsmoment					
Brake	J	kgcm ²	10.42		
Brake motor	J _{MB}	kgcm ²	72.6	128.9	204.3
Load/brake motor ratio	J _L /J _{MB}		15	8	5



Feedback

For speed control with a servo inverter, the servo motor can be equipped with the following feedback systems:

Inverter	Feedback without functional safety		
	Resolver	Absolute value encoder	Digital absolute value encoder for OCT
i950 servo inverter	RS0	AM128-8V-H	AM20-8V-D
i700 servo inverter	RS0	AM128-8V-H	-
8400 TopLine inverter drives	RS0	AM128-8V-H	-
9400 HighLine servo drives	RS0	AM128-8V-H	-

Inverter	Feedback with functional safety		
	Resolver	Absolute value encoder	Digital absolute value encoder for OCT
i950 servo inverter	RV03	AM128-8V-K2	AM20-8V-D2
9400 HighLine servo drives	RV03	AM128-8V-K2	-

Feedbacks in the environment of functional safety

Motors can perform speed-dependent safety functions for safe speed and/or safe relative position monitoring in a drive system by Lenze inverters or Controllers. In case of inverters, these functions are implemented by integrable safety modules and in case of Controllers by the additionally required Safety Controller.

When planning systems/installations of this kind, always observe the following:

- When using just one single feedback system in the environment of these safety applications, the applicable safety engineering standard EN 61800-5-2 (adjustable speed electrical power drive systems - Part: 5-2: Safety requirements - Functional) stipulates special requirements for the connection between feedback system and motor shaft.
- This is due to the fact that two-channel safety systems at this point in the mechanical system are actually designed as single-channel systems. If this mechanical connection is designed with considerable overdimensioning, the standard permits exclusion of the fault "encoder-shaft breakage" or "encoder-shaft slip". As such, the permissible angular acceleration limit values must not be exceeded for the individual drive solutions.

You can find the limit values in the corresponding feedback data of the individual motor ranges.

Speed-dependent safety functions

Examples of speed-dependent safety functions:

- Safe stop 1 (SS1)
- Safe operational stop (SOS)
- Safely limited speed (SLS)
- Safe maximum speed (SMS)
- Safe direction (SDI)
- Operation mode selector (OMS) with confirmation (ES)
- Safe speed monitor (SSM)
- Safely limited increment (SLI)

Product extensions

Feedback
Resolver



Resolver

The stator-supplied, 2-pole resolver with two stator windings shifted by 90 degrees and a rotor winding with a transformer winding can record both the speed and the rotor position, just like a single-turn absolute value encoder. The rotor position can be determined within one mechanical motor revolution after a voltage failure.

Feedback type			Resolver	
Feedback			RS0	RV03
Speed-dependent safety functions			No	Yes
Design			Mounting	
Resolution - angle		'	0.8	0.8
Min. accuracy		'	-10	-10
Max. accuracy		'	10	10
Absolute positioning			1 revolution	1 revolution
Max. speed	$n_{\max}$	rpm	8000	8000
Max. DC input voltage	$V_{\text{in,max}}$	V	10	10
Max. input frequency	$f_{\text{in,max}}$	kHz	4	4
Ratio stator/rotor			0.3	0.3
Min ratio tolerance		%	-5	-5
Max ratio tolerance		%	5	5
Rotor impedance	Z_{ro}	Ω	51+j90	51+j90
Stator impedance	Z_{so}	Ω	102+j150	102+j150
Impedance	Z_{rs}	Ω	44+j76	44+j76
Min. insulation resistance at DC 500 V	R_{min}	M Ω	10	10
Number of pole pairs			1	1
Max. angle error Min		'	-10	-10
Max. angle error Max		'	10	10

Speed-dependent safety functions

Feedback			RV03
Max. permissible angular acceleration	α	rad/s ²	19000
Functional safety			
IEC 61508			SIL3
EN 13849-1			Up to Performance Level e



Product extensions

Feedback
Absolute value encoder

Absolute value encoder

Absolute value encoders can detect the speed, the rotor position, and the machine position with a very high resolution. They are used for the positioning of dynamic applications and do not require homing.



With the aid of the open feedback protocol HIPERFACE DSL® and in connection with the digital absolute value encoder AM20-8V-D, the motor supports the future-oriented One Cable Technology (OCT).

Feedback type			Digital absolute value encoder		SinCos absolute value encoder	
Feedback			AM20-8V-D	AM20-8V-D2	AM128-8V-H	AM128-8V-K2
Speed-dependent safety functions			No	Yes	No	Yes
Design			Mounting	Mounting	Mounting	Mounting
Encoder type			Multi-turn	Multi-turn	Multi-turn	Multi-turn
Resolution		bit	20	20	-	-
Pulses			-	-	128	128
Output signals			Digital	Digital	SinCos 1 Vss	SinCos 1 Vss
Interfaces			Hiperface	Hiperface	Hiperface	Hiperface
Absolute revolution			4096	4096	4096	4096
Resolution - angle			0.02	0.02	0.4	0.4
Min. accuracy		'	-	-	-1.3	-1.3
Max. accuracy		'	-	-	1.3	1.3
Fehlergrenze Positionswert						
System accuracy			1.7	1.7	-	-
Integral nonlinearity			1	1	-	-
Min. DC input voltage	$V_{in,min}$	V	-	-	7	7
Max. DC input voltage	$V_{in,max}$	V	-	-	12	12
Max. current consumption	I_{max}	A	0.15	0.15	0.06	0.06
Limit frequency	f_{max}	kHz	-	-	200	200

Speed-dependent safety functions

Feedback			AM20-8V-D2	AM128-8V-K2
Max. permissible angular acceleration	α	rad/s ²	240000	240000
Functional safety				
IEC 61508			SIL2	
EN 13849-1			Up to Performance Level d	

Product extensions

Temperature monitoring
Thermal detectors PT1000



Temperature monitoring

Thermal detectors PT1000

The thermal detector used continuously monitors the motor temperature. The temperature information is transferred to the inverter using the system cable of the feedback system. **This is not a full motor protection!**

This makes it possible to determine the motor temperature in the permissible operating range with great accuracy.

The thermal sensors used continuously monitor the motor temperature. The temperature information is transferred to the inverter using the system cable of the feedback system. **This is not a full motor protection!**

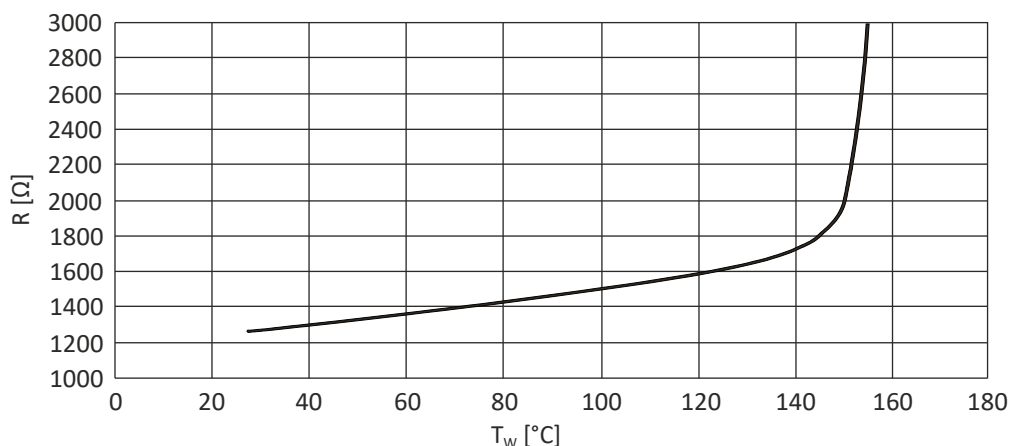
The motors are monitored via three thermal sensors connected in series (1x PT1000 + 2x PTC 150 °C). This makes it possible to determine the motor temperature in the permissible operating range and at the same time execute the overtemperature response configured in the inverter in one of the winding strands.



The three thermal sensors connected in series are identified on the nameplate by the short designation "PT1k+2PTC".



When supplying the thermal sensors with a measurement current of 1 mA, the connection between the temperature and the resistance measured applies.



R Resistance
 T_w Winding temperature



Product codes

Gearbox product code

Example		G	50	A	B	045	M	H	B	R	2	C	1A
Product type	Gearboxes	G											
Product family			50										
Generation				A B									
Gearbox type	Bevel gearbox				B								
Output torque	45 Nm					045							
	110 Nm					111							
	240 Nm					124							
	450 Nm					145							
	600 Nm					160							
	820 Nm					182							
	1500 Nm					215							
	2700 Nm					227							
	4300 Nm					243							
	8000 Nm					280							
	13000 Nm					313							
	20000 Nm					320							
Type of construction	Geared motor						M						
	Gearboxes						N						
Shaft type	Solid shaft with featherkey							V					
	Hollow shaft with keyway							H					
	Hollow shaft with shrink disc							S					
Housing type	Foot mounting + centering								A				
	Foot mounting								B				
	With centering								C				
	Threaded pitch circle								D				
Flange mounting	Without flange									R			
	Flange with through holes									K			
Number of stages	2-stage										2		
	3-stage										3		
	4-stage										4		
Motor mounting	Integrated motor											C	
	IEC adapter with jaw coupling											N T	
	IEC adapter with plug-in hollow shaft											H	
	NEMA adapter with jaw coupling											A	
	NEMA adapter with plug-in hollow shaft											B	
	Servomotor adapter with plug-in hollow shaft											S	
	Servomotor adapter with jaw coupling											E D G	
Drive size													1A ... □H 08 ... 82

Product codes



Product code of m850 synchronous servo motor

Example		M	8	5	A	S	120	S	25	5	S	0	R	C	C	0
Meaning	Variant	Product code														
Portfolio segment		M														
Product family	8		8													
Product level	5			5												
Product generation	1				A											
Product type	Synchronous servo motor					S										
Flange height	120						120									
	140						140									
	190						190									
Motor length	Short							S								
	Medium							M								
	Long							L								
Speed	25 x 100 rpm								25							
	30 x 100 rpm								30							
	32 x 100 rpm								32							
	40 x 100 rpm								40							
Degree of protection	IP5x								5							
	IP6x								6							
Cooling	No cooling									S						
Brake attachment	No brake										0					
	Spring-applied brake										F					
	Permanent magnet brake										P					
Encoder mounting	Resolver											R				
	Absolute value encoder											A				
	Digital absolute value encoder											D				
	Hiperface DSL®															
Product approval	CE												C			
	CE; cULus												L			
Manufacturer	Lenze													C		
Internal key																0



Motor data

Rated data
Inverter mains connection 400 V, Self-ventilated motors

Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors

Motor			m850-S120/ S3960	m850-S120/ M3960	m850-S120/ L3960	m850-S140/ S3240	m850-S140/ M3240	m850-S140/ L3240
Standstill torque	M_0	Nm	6.50	11.0	15.0	11.0	21.0	28.0
Rated torque	M_{rated}	Nm	4.80	7.40	9.00	8.50	14.0	17.4
Max. torque	M_{max}	Nm	14.5	29.0	44.0	26.0	53.5	80.0
Rated speed	n_{rated}	rpm	3960	3960	3960	3240	3240	3240
Max. speed	n_{max}	rpm	6000	6000	6000	6000	6000	6000
Rated power	P_{rated}	kW	2	3.1	3.7	2.9	4.8	5.9
Standstill current	I_0	A	5.50	8.80	12.1	7.40	14.0	18.0
Rated current	I_{rated}	A	4.30	6.40	7.80	6.30	10.0	12.2
Max. current	I_{max}	A	15.0	28.0	42.0	23.0	45.5	66.0
Rated voltage	V_{rated}	V	330	330	320	340	330	330
Rated frequency	f_{rated}	Hz	330	330	330	270	270	270
Moment of inertia	J	kgcm ²	6.50	12.4	18.2	15.7	30.1	44.6
Efficiency	η		0.902	0.914	0.914	0.879	0.915	0.926
Torque constant	$K_{t_{0\ 150}}$ °C	Nm/A	1.18	1.25	1.24	1.49	1.50	1.56
Voltage constant	$K_{E_{LL\ 150}}$ °C	V/ (1000/ min)	68.99	73.1	72.93	86.81	88.36	90.67
Stator terminal resistance	$R_{UV\ 20}$ °C	Ω	2.24	1.02	0.63	1.436	0.562	0.366
Stator terminal resistance	$R_{UV\ 150}$ °C	Ω	3.376	1.537	0.949	2.164	0.847	0.552
Stator inductance	L	mH	11.5	6.73	4.58	9.90	5.22	3.76
Weight	m	kg	6.5	9.25	12.0	9.50	14.5	19.5

Motor data

Rated data

Inverter mains connection 400 V, Self-ventilated motors



Motor			m850-S190/S3000	m850-S190/M3000	m850-S190/L2520
Standstill torque	M_0	Nm	27.0	46.0	67.0
Rated torque	M_{rated}	Nm	16.0	24.0	35.0
Max. torque	M_{max}	Nm	71.0	120	200
Rated speed	n_{rated}	rpm	3000	3000	2520
Max. speed	n_{max}	rpm	4500	4500	4500
Rated power	P_{rated}	kW	5	7.5	9.2
Standstill current	I_0	A	16.0	26.8	30.8
Rated current	I_{rated}	A	10.3	15.4	17.7
Max. current	I_{max}	A	64.0	87.0	112
Rated voltage	V_{rated}	V	340	330	345
Rated frequency	f_{rated}	Hz	250	250	210
Moment of inertia	J	kgcm ²	60.8	117	193
Efficiency	η		0.905	0.919	0.929
Torque constant	$K_{t_{0\ 150}}^{\circ C}$	Nm/A	1.69	1.72	2.18
Voltage constant	$K_{E_{LL\ 150}}^{\circ C}$	V/ (1000/ min)	99.24	101.13	124.86
Stator terminal resistance	$R_{UV\ 20}^{\circ C}$	Ω	0.452	0.196	0.16
Stator terminal resistance	$R_{UV\ 150}^{\circ C}$	Ω	0.681	0.295	0.241
Stator inductance	L	mH	5.46	2.90	2.76
Weight	m	kg	19.8	28.5	41.0



Torque characteristics



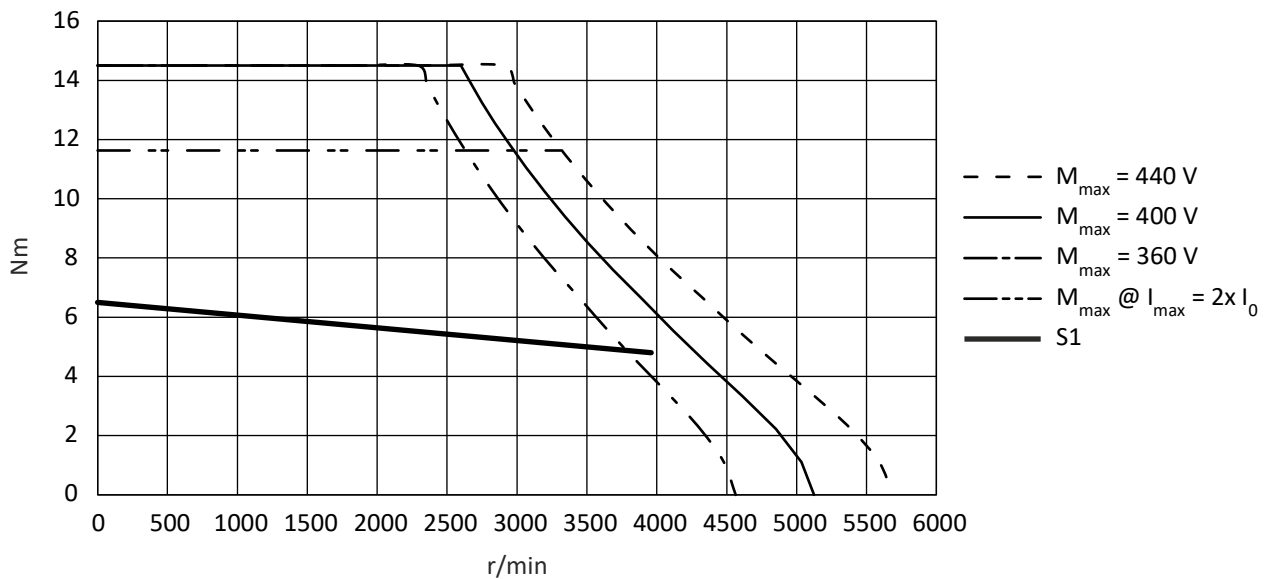
The torque/speed characteristic for your motor/inverter combination can be found on the Internet:

<http://www.lenze.com> → Product Finder → M-n characteristics

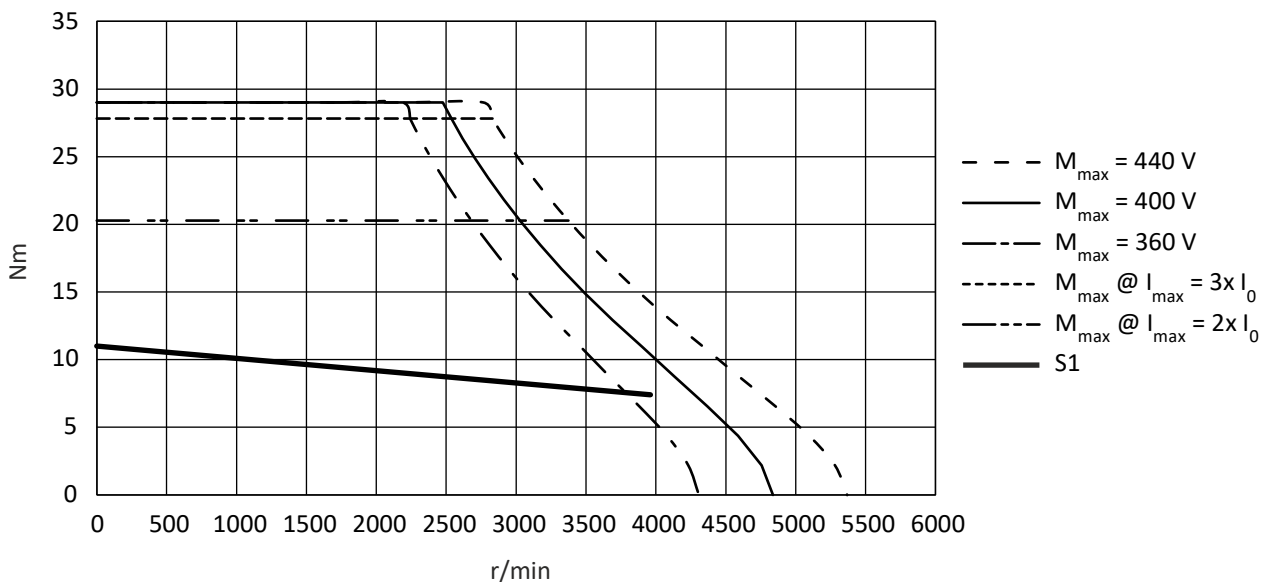


The following data apply to a mains voltage 3 x 400 V of the inverter.

m850-S120/S3960

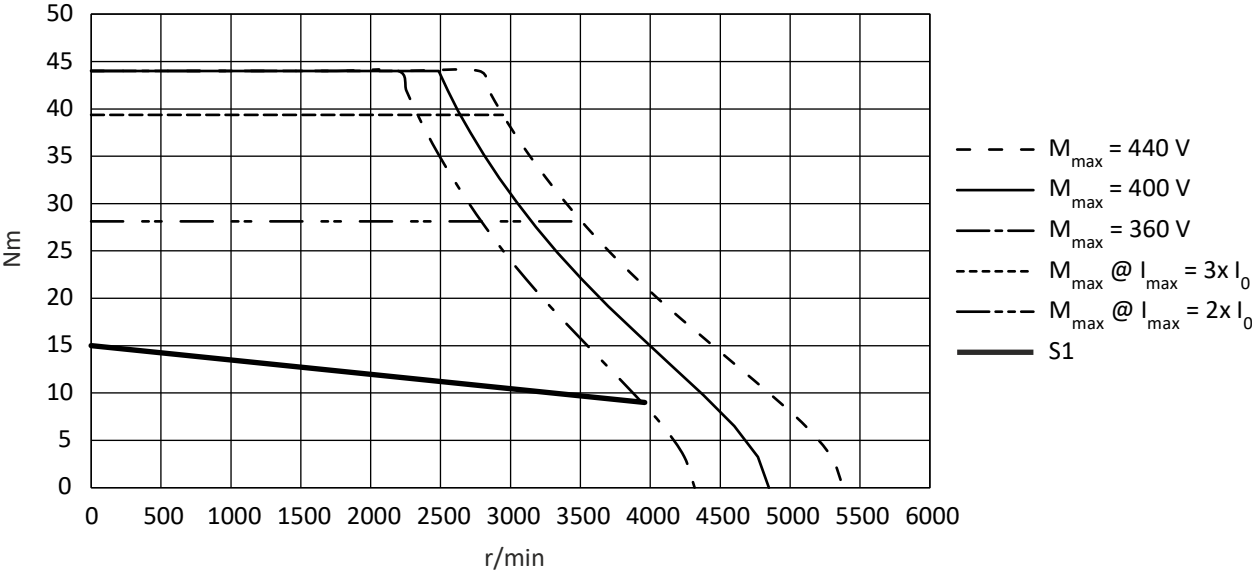


m850-S120/M3960

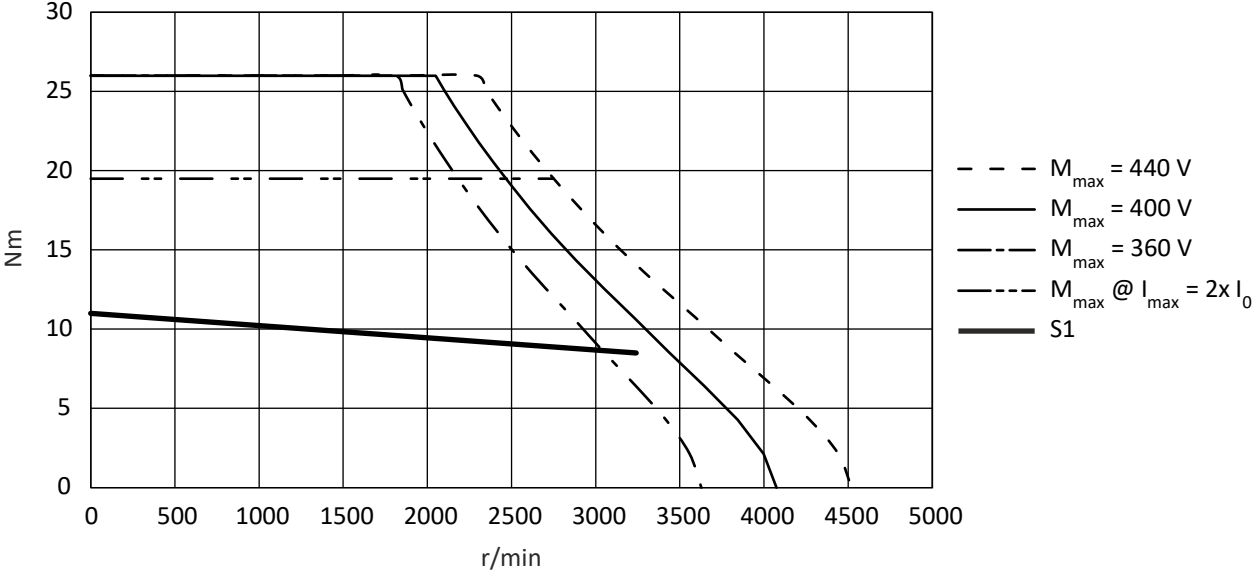




m850-S120/L3960



m850-S140/S3240

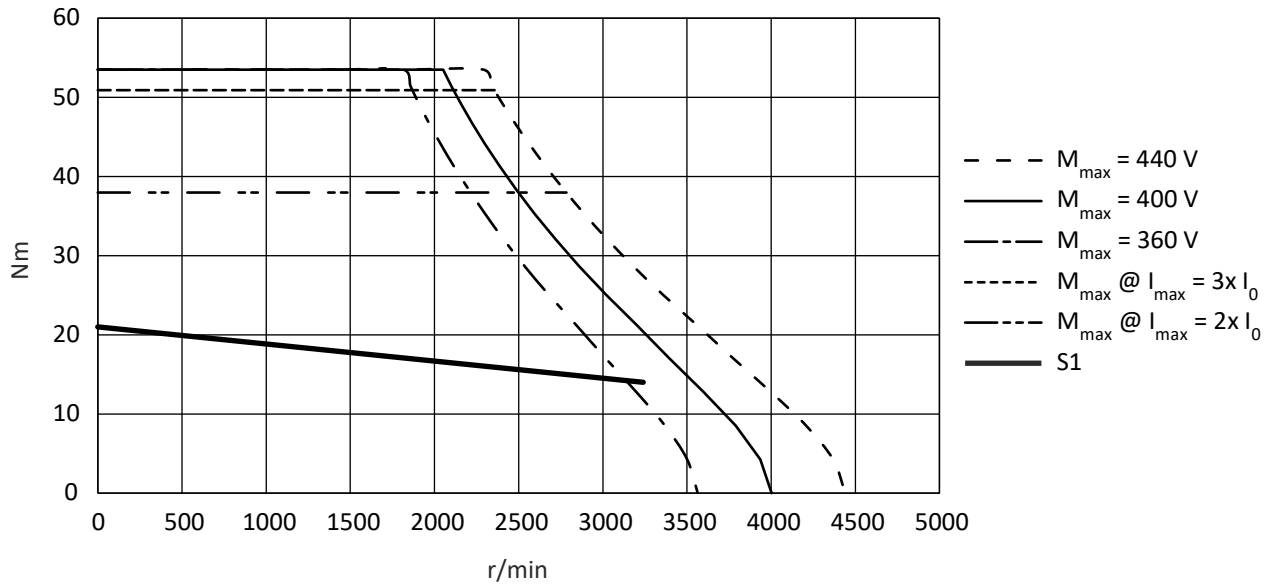




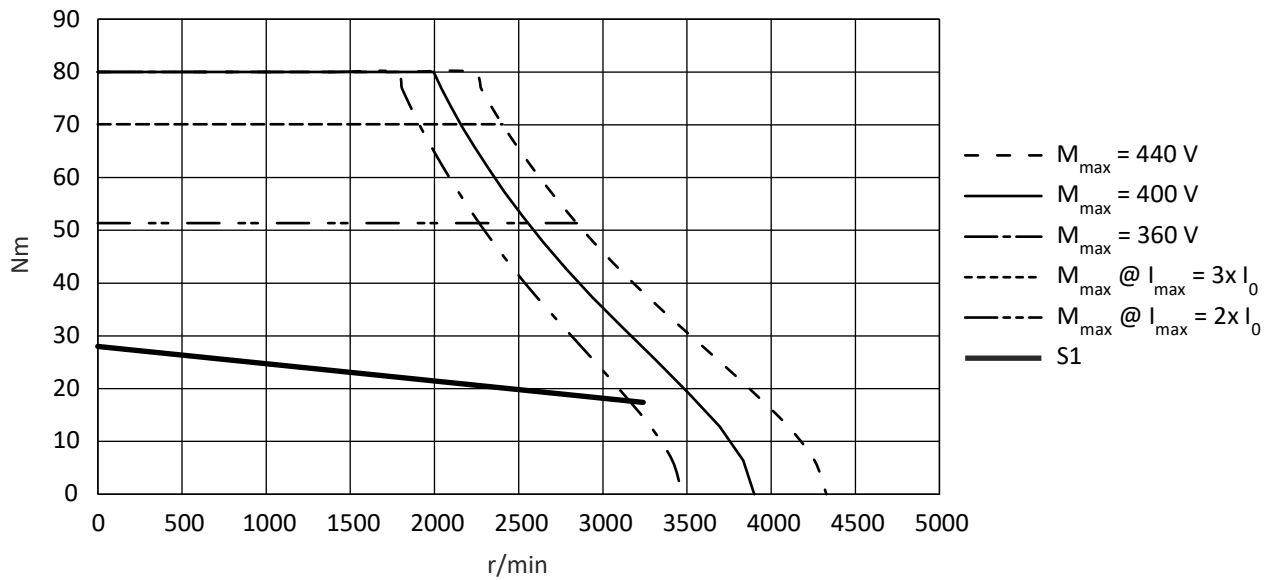
Motor data

Torque characteristics

m850-S140/M3240



m850-S140/L3240

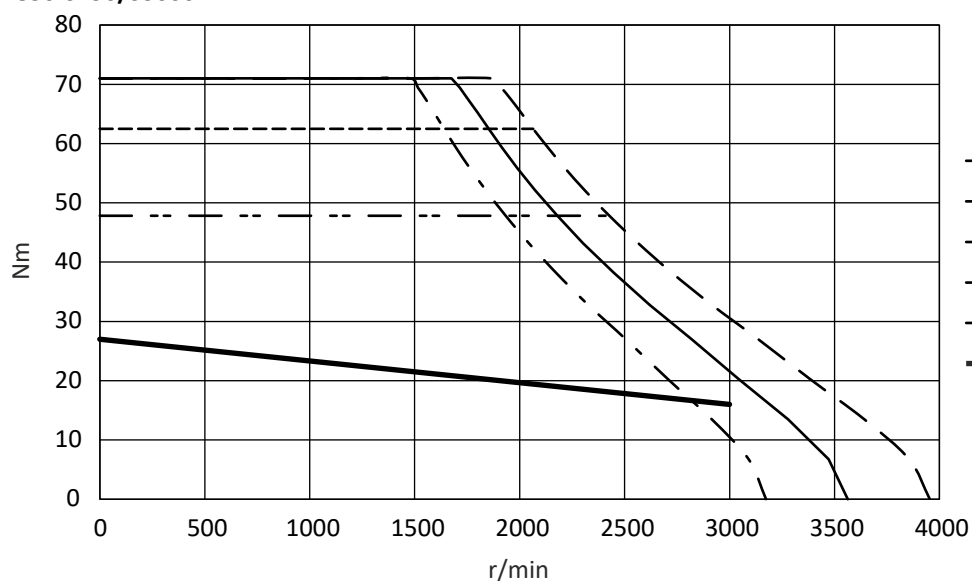


Motor data

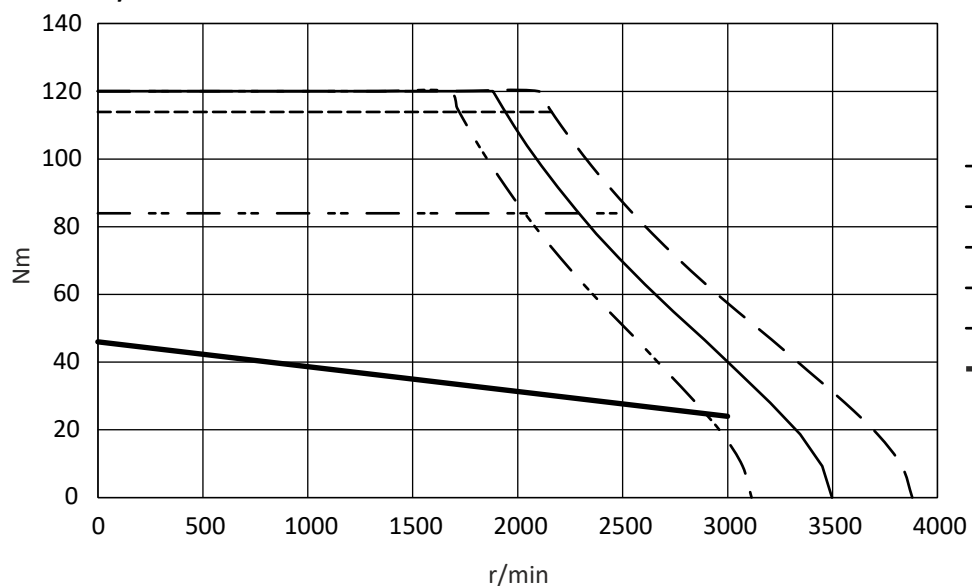
Torque characteristics



m850-S190/S3000



m850-S190/M3000

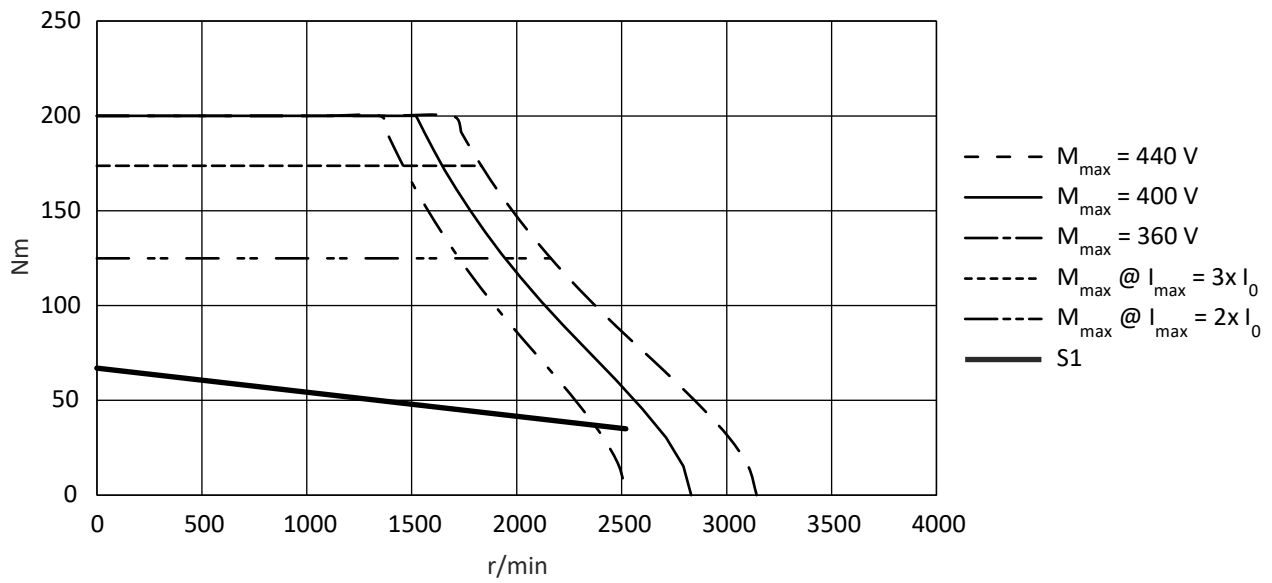




Motor data

Torque characteristics

m850-S190/L2520





Environmental notes and recycling

Lenze has been certified to the worldwide environmental management standard for many years (DIN EN ISO 14001). As part of our environmental policy and the associated climate responsibility, please note the following information on hazardous ingredients and the recycling of Lenze products and their packaging:



Lenze products are partly subject to the EU Directive on the restriction of certain hazardous substances in electrical and electronic equipment 2011/65/EU: RoHS Directive [UKCA: S.I. 2012/3032 - The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012] . This is documented accordingly in the EU declaration of conformity and with the CE mark.



The crossed-out wheeled bin symbol is located on the equipment. This information indicates that used electrical and electronic products must not be disposed of with normal household waste.
The EU Directive 2012/19/EU: Directive on waste electrical and electronic equipment (WEEE) [UKCA: S.I. 2013/3113 - The Waste Electrical and Electronic Equipment Regulations 2013] , which has been transposed into national law by the respective EU member states, applies to the disposal of equipment. As a customer, you have the option of disposing of the electrical and electronic equipment that you have purchased from us and that is subject to WEEE via the Lenze branch in your country.
Lenze addresses in Europe: <https://www.lenze.com/en-de/company/global-presence>

Some Lenze products contain batteries/rechargeable batteries in accordance with EU Directive 2006/66/EC: Battery Directive [UKCA: S.I. 2009/890 - The Waste Batteries and Accumulators Regulations 2009] . Any batteries/rechargeable batteries included are designed to last the life of the product and do not need to be replaced or otherwise removed by the end user.



Lenze products are usually sold with cardboard or plastic packaging. This packaging complies with EU Directive 94/62/EC: Directive on packaging and packaging waste [UKCA: S.I. 1997/648 - The Producer Responsibility Obligations (Packaging Waste) Regulations 1997] . The required disposal route is indicated by material-specific labels with the "recycling triangle". Example: "21 - other cardboard"

REACH

Lenze products are subject to REGULATION (EC) No 1907/2006: REACH Regulation [UKCA: S.I. 2008/2852 - The REACH Enforcement Regulations 2008] . When used as intended, exposure of substances to humans, animals and the environment is excluded.

Lenze products are industrial electrical and electronic products and are disposed of professionally. Both the mechanical and electrical components such as electric motors, gearboxes or inverters contain valuable raw materials that can be recycled and reused. Proper recycling and thus maintaining the highest possible level of recyclability is therefore important and sensible from an economic and ecological point of view.

- Coordinate professional disposal with your waste disposal company.
- Separate mechanical and electrical components, packaging, hazardous waste (e.g. gear oils) and batteries/rechargeable batteries wherever possible.
- Dispose of the separated waste in an environmentally sound and proper manner (no household waste or municipal bulky waste).

What?	Material	Disposal instructions
Pallets	Wood	Return to manufacturers, freight forwarders or reusable materials collection system
Packaging material	Paper, cardboard, pasteboard, plastics	Collect and dispose of separately
Products		
Electronic devices	Metal, plastics, circuit boards, heatsinks	As electronic waste give to professional disposer for recycling
Gearbox	Oil	Drain oil and dispose of separately
	Casting, steel, aluminium	Dispose as metal scrap
Motors	Casting, copper, rotors, magnets, potting compound	As engine scrap give to professional disposer for recycling
Dry-cell batteries/rechargeable batteries		As used batteries give to professional disposer for recycling



Further information on Lenze's environmental and climate responsibility and on the topic of energy efficiency can be found on the Internet:

www.Lenze.com → search word: "Sustainability"



Appendix

Good to know

Operating modes of the motor

In continuous operation a motor reaches its permissible temperature limit if it outputs the rated power dimensioned for continuous operation. However, if the motor is only subjected to load for a short time, the power output by the motor may be greater without the motor reaching its permissible temperature limit. This behaviour is referred to as overload capacity.

Depending on the duration of the load and the resulting temperature rise, the required motor can be selected reduced by the overload capacity.

Operating modes S1 ... S10 as specified by EN 60034-1 describe the basic stress of an electrical machine.

The most important operating modes

Continuous operation S1	Short-time operation S2
Operation with a constant load until the motor reaches the thermal steady state. The motor may be actuated continuously with its rated power.	Operation with constant load; however, the motor does not reach the thermal steady state. During the following standstill, the motor winding cools down to the ambient temperature again. The increase in power depends on the load duration.

Appendix

Good to know
Enclosures



Intermittent operation S3	Non-intermittent periodic operation S6
Sequence of identical duty cycles comprising operation with a constant load and subsequent standstill. Start-up and braking processes do not have an impact on the winding temperature. The steady-state is not reached. The guide values apply to a cycle duration of 10 minutes. The power increase depends on the cycle duration and on the load period/downtime ratio.	Sequence of identical duty cycles comprising operation with a constant load and subsequent no-load operation. The motor cools down during the no-load phase. Start-up and braking processes do not have an impact on the winding temperature. The steady-state is not reached. The guide values apply to a cycle duration of 10 minutes. The power increase depends on the cycle duration and on the load period/idle time ratio.

P Power
t Time
 t_L Idle time
 θ Temperature

P_v Power loss
 t_B Load period
 t_S Cycle duration

Enclosures

The protection class indicates the suitability of a product for specific ambient conditions with regard to humidity as well as the protection against contact and the ingress of foreign particles. The protection classes are classified in the EN 60034-5/ EN IEC 60529.

The first code number after the code letters IP indicates the protection against the ingress of foreign particles and dust. The second code number refers to the protection against the ingress of humidity.

Code number 1	Degree of protection	Code number 2	Degree of protection
0	No protection	0	No protection
1	Protection against the ingress of foreign particles $d > 50$ mm. No protection in case of deliberate access.	1	Protection against vertically dripping water (dripping water).
2	Protection against medium-sized foreign particles, $d > 12$ mm, keeping away fingers or the like.	2	Protection against diagonally falling water (dripping water), 15° compared to normal service position.
3	Protection against small foreign particles $d > 2.5$ mm. Keeping away tools, wires or the like.	3	Protection against spraying water, up to 60° from vertical.
4	Protection against granular foreign particles, $d > 1$ mm, keeping away tools, wire or the like.	4	Protection against spraying water from all directions.
5	Protection against dust deposits (dust-protected), complete protection against contact.	5	Protection against water jets from all directions.
6	Protection against the ingress of dust (dust-proof), complete protection against contact.	6	Protection against choppy seas or heavy water jets (flood protection).

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