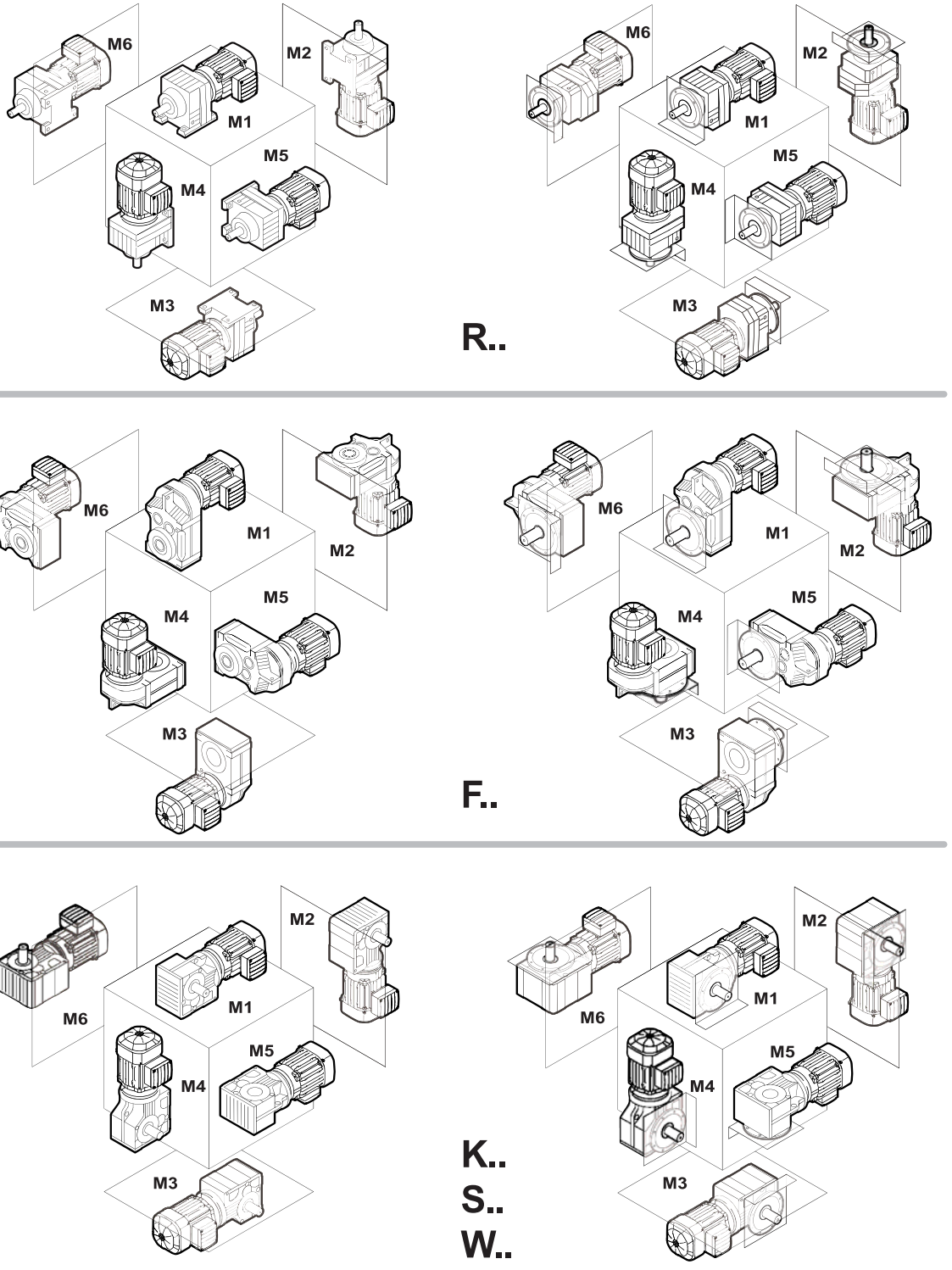
5 Gear unit mounting positions and order information

5.1 General mounting position information – R, F, K, S, W gear units

The following illustration shows the SEW-EURODRIVE mounting positions M1 – M6:



15649312267

24832936/EN – 09/2018

5.1.1 Change of mounting position

Make sure to read the following information when you operate the gearmotor in a mounting position other than the one indicated in the order:

- Adjust the lubricant fill quantity to the changed mounting position.
- Adjust the position of the breather valve.
- When changing the mounting position to M4: Contact SEW-EURODRIVE. Depending on the drive's operating mode, an oil expansion tank might be necessary (see chapter "Oil expansion tank" (→ 🗎 21)).
- For helical-bevel gearmotors: Contact SEW-EURODRIVE if you want to change to mounting position M5 or M6, independent of the initial mounting position.
- For helical-worm gearmotors: Contact SEW-EURODRIVE when changing to mounting position M2 or M3.
- For helical gearmotors: Contact SEW-EURODRIVE when changing to mounting position M2.
- If you change the mounting position to a mounting position that requires more oil, SEW-EURODRIVE recommends to perform a thermal check/project planning again.

5.1.2 Universal mounting position M0

SPIROPLAN® W10.. – W30.. gear units are available to order in the universal mounting position M0. These small SPIROPLAN® gear units are entirely enclosed due to their small size and have no breather valve. You can use them in any mounting position M1 – M6 without having to adjust the gear unit.

All W10.. – W30.. gear units of one size have the same oil fill quantity.

5.1.3 Mounting position MX

Mounting position MX is available for all gear units of the sizes R..7, F..7, K..7, K..9, S..7, and SPIROPLAN® W..7.

In contrast to the M0 mounting position, gear units in MX mounting position must be adjusted according to the mounting position prior to startup.

For mounting position MX, the gear units are delivered with the maximally possible amount of oil and sealed with oil screw plugs. A breather valve is included with each drive. The oil fill volume must be adapted according to the mounting position of the gear unit (see chapter "Lubricant fill quantities" (→ 🗎 122)). Customers will also have to install the enclosed breather valve at the proper location depending on the mounting position, see chapter "Mounting position sheets" (→ 🗎 74).

Before startup, always check that the oil level is correct.

Compound gear units in MX mounting position

In MX mounting position, both gear units (primary and subsequent gear unit) are in the same mounting position.

5.1.4 Position of breather valve/oil drain plug in motor flange

As shown in the mounting position sheets in chapter "Mounting position sheets" (→ 🗎 74), the position of the breather valve and oil drain plug depend on the gearmotor mounting position.

24832936/EN – 09/2018

The following table shows the position of the breather valve and the oil drain plug depending on the mounting position:

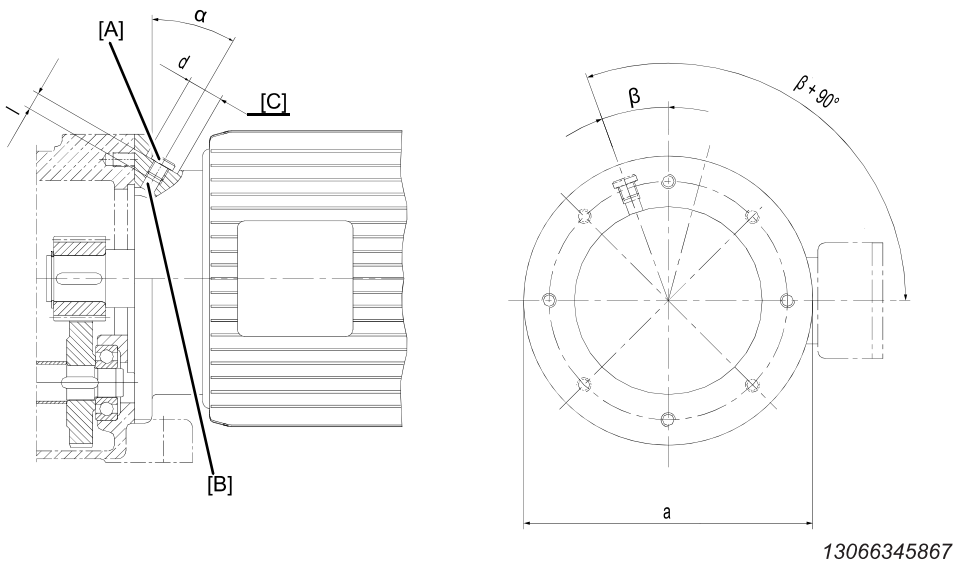
Mounting position	Breather valve position	Oil drain plug position
M1, M3, M5, M6	In the gear unit housing	In the gear unit housing
M4	**In the motor flange**	In the gear unit housing
M2	In the gear unit housing	**In the motor flange**

If the breather valve (M4 mounting position) or the oil drain plug (M2 mounting position) is positioned in the motor flange, the position depends on the terminal box position.

INFORMATION

The positions of the breather valve/oil drain plug in the mounting position sheets in chapter "Mounting position sheets" (→ 🗎 74) and the following chapters always refers to the standard terminal box position 0°. Note that the position of the breather valve / oil drain plug is changed depending on the possible terminal box positions (90°, 180°, 270°).

The following illustration shows the exact position of the breather valve/oil drain plug in the motor flange.



13066345867

[A] Position of breather valve / oil drain plug
[B] Continuous core drilling
[C] Counterbored bore
[α] Drill angle
[d] Diameter of the countersinking
[l] Thread length
[a] Flange diameter
[β] Position angle

Dimension tables

The following tables contain the dimensions regarding the position of the breather valve and the oil drain plug depending on the motor size.

DR2S.. motor type	a In mm	α in °	β in °	Thread designation	Ø d In mm	l In mm
DR2S56	105	0	45	M10×1	–	10

24832936/EN – 09/2018

DRN.. motor type	a In mm	α in °	β in °	Thread designation	Ø d In mm	l In mm
DRN63	105	0	45	M10×1	–	10
	120				15	
	160					
	200	30	22.5	M12x1.5	18	12
DRN71	105	0	45	M10×1	–	10
	120				15	
	160					
	200	30	22.5	M12x1.5	18	12
	250					
	300	90		M22x1.5	28	14
DRN80	105	0	45	M10×1	–	10
	120	15	22.5		15	
	160	30				
	200			M12x1.5	18	12
	250					
	300	90		M22x1.5	28	14
DRN90	120	30	22.5	M10×1	15	12
	160					
	200			M12x1.5	15	16
	250				18	12
	300			M22x1.5	28	
DRN100	120	30	22.5	M10×1	15	10
	160					12
	200			M12x1.5	18	
	250					
	300			M22x1.5	28	14
	350					
DRN112M DRN132S	160	30	22.5	M10×1	15	10
	200			M12x1.5	18	12
	250					
	300			M22x1.5	28	14
	350					
	400	45				10
	450			M33×2	40	16
DRN132M/L	160	30	22.5	M10×1	15	10
	200	15		M12x1.5	18	14
	250	30				
	300			M22x1.5	28	12
	350					14
	400					13
	450	75		M33×2	40	16
	550	90		M42×2	50	18
DRN160	200	30	22.5	M10×1	15	17
	250			M12x1.5	18	15
	300			M22x1.5	28	12
	350					
	400					16
	450			M33×2	40	
	550	90		M42×2	50	

24832936/EN – 09/2018

DRN.. motor type	a In mm	α in °	β in °	Thread designation	Ø d In mm	l In mm
DRN180	250	30	22.5	M12x1.5	18	15
	300			M22x1.5	28	
	350					
	400					16
	450			M33×2	40	
	550	90		M42×2	50	17
DRN200	250	30	22.5	M12x1.5	18	15
	300			M22x1.5	28	
	350					14
	400					16
	450			M33×2	40	
	550			M42×2	50	19
DRN225	300	30	22.5	M22x1.5	28	15
	350					14
	400					16
	450			M33×2	40	17
	550			M42×2	50	29
DRN250 DRN280	350	15	22.5	M22x1.5	28	14
	400		21			
	450		22.5	M33×2	40	16
	550			M42×2	50	
DRN315	450	30	22.5	M33×2	40	30
	550		11.25	M42×2	50	20

5.2 Order information

INFORMATION

The following order information is required for R, F, K, S, and W gear units or gearmotors in addition to the mounting position to exactly determine the drive design.

This information is also required for gearmotors that do not depend on a particular mounting position.

5.2.1 Order information for all gear units and gearmotors

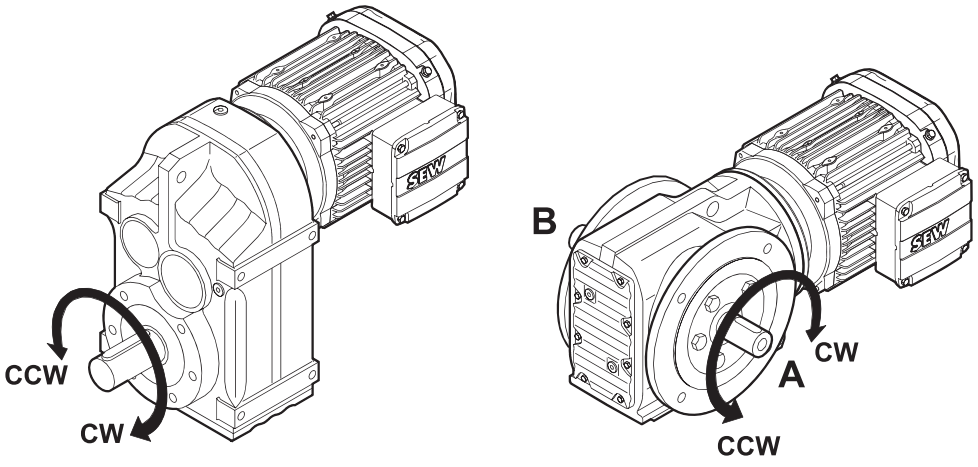
Observe the following notes for all gear units and gearmotors from SEW-EURODRIVE.

Output direction of rotation with backstop

The purpose of a backstop is to prevent unwanted directions of rotation. During operation, the backstop permits rotation only in the specified direction. If the drive has an RS backstop, you have to indicate the direction of rotation of the output for the drive.

The direction of rotation is specified as viewed onto the output shaft (LSS):

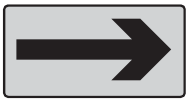
- CW rotation
- CCW rotation



4579708555

In right-angle gear units, you also have to indicate whether the direction of rotation is given looking onto the A or B-side.

The permitted direction of rotation is indicated by a direction arrow on the housing:



15985405835

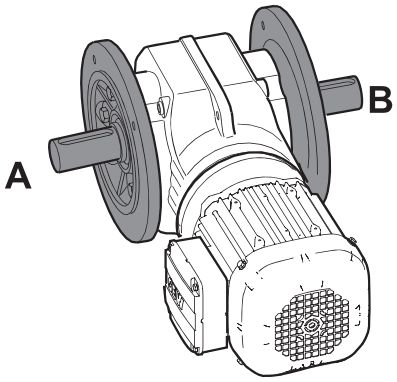
A replacement label is enclosed for the customer.

Position of the output shaft and the output flange

In right-angle gear units, you also have to indicate the position of the output shaft and the output flange:

- A or B or AB

24832936/EN – 09/2018

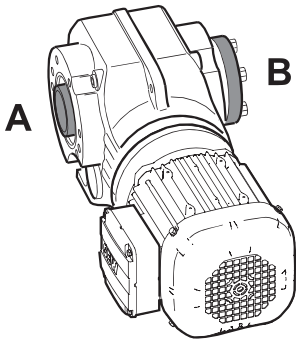


4579723275

Position of the output end in right-angle gear units

In shaft mounted right-angle gear units with a shrink disk, you also have to indicate whether the A- or B-side is the output side. In the figure below, the A-side is the output side. The shrink disk is located opposite the output side.

In shaft-mounted right-angle gear units, the designation "output side" is equivalent to the designation "position of the output shaft" used for right-angle gear units with solid shaft.



4579730955

INFORMATION

For the permitted mounting surfaces (= hatched area), refer to the mounting position sheets (see chapter "Mounting position sheets" (→ 🗎 74)).

5.2.2 Position of motor terminal box and cable entry

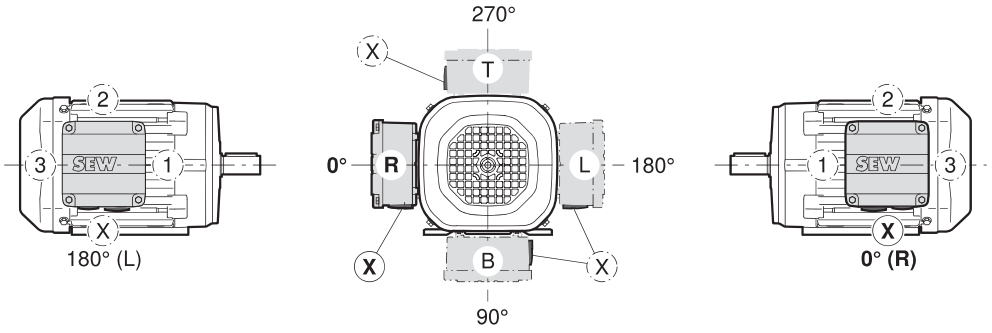
The position of the motor terminal box has so far been indicated with 0°, 90°, 180° or 270° as viewed onto the fan guard (= B-side), see also the following figure. A change in the standard DIN EN 60034 specifies that the following designations will have to be used for terminal box positions for foot-mounted motors in the future:

- As viewed onto the output shaft = A-side
- Designation as R (right), B (bottom), L (left) and T (top)

This new designation applies to foot-mounted motors without a gear unit in mounting position B3 (= M1). For gearmotors, the previous designation is maintained. The following figure shows both designations. Where the mounting position of the motor changes, R, B, L and T are rotated accordingly. In motor mounting position B8 (= M3), T is at the bottom.

24832936/EN – 09/2018

The position of the cable entry can be selected as well. "X" (= normal position), "1", "2" or "3" are possible, as shown in following figure.



3975310859

Unless indicated otherwise, you will receive the terminal box type 0° with "X" cable entry. SEW-EURODRIVE recommends selecting cable entry "2" with mounting position M3.

INFORMATION

Only cable entries "X" and "2" are possible for DR2S56.. and DRN63.. motors. Exception: This limitation does not apply with IS plug connectors.

INFORMATION

When the **terminal box is in the 90° (B) position**, check to see if the gearmotor has to be supported.

Software support

Not all cable entry positions X, 1, 2, 3 and terminal box positions 0°(R), 90°(B), 180°(L), 270°(T) are possible in any case. Some additional features for the motor require a connection inside the terminal box, which means this terminal box is larger than the standard terminal box due to the normative air gaps and creepage distances. The dimension sheets only depict the standard terminal box.

Dimensions not listed in the dimension sheets are available on the SEW-EURODRIVE website via the respective CAD data.

5.2.3 Sample orders

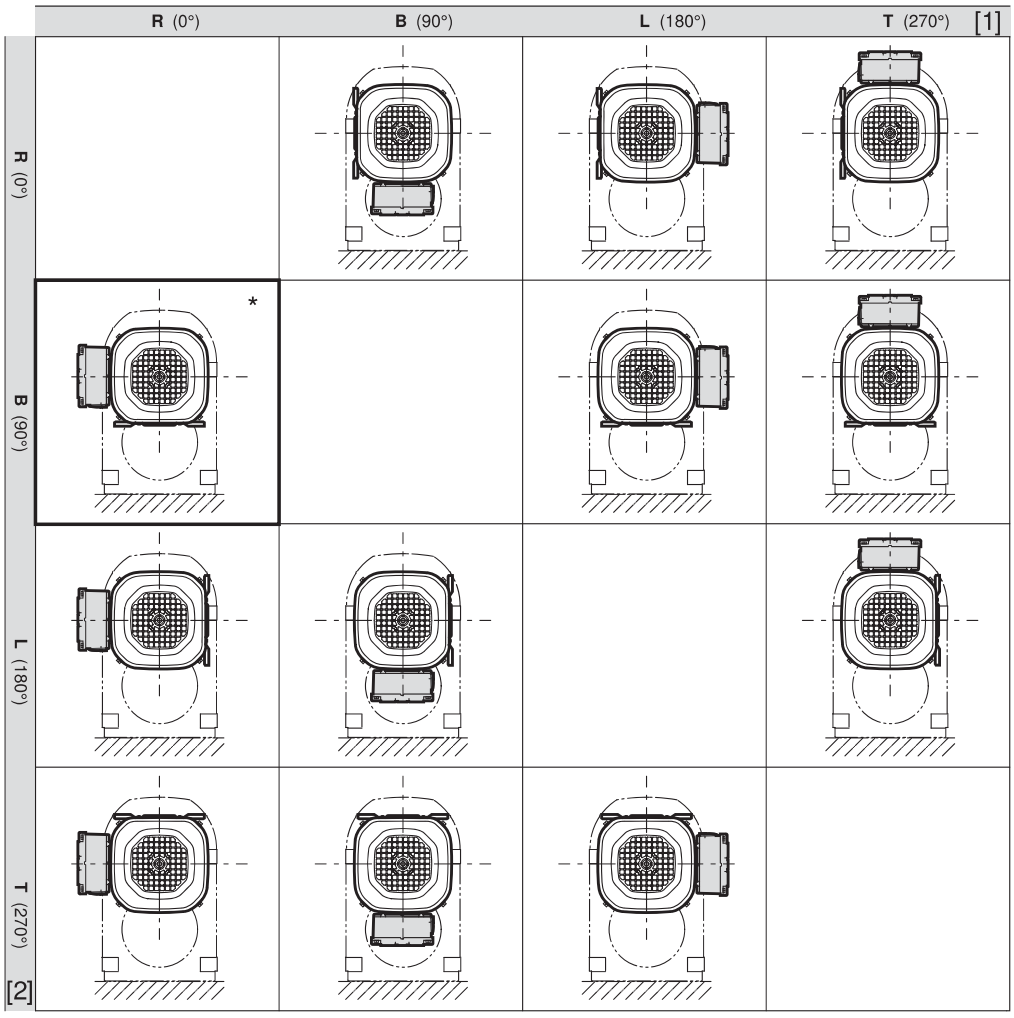
Type (examples)	Mounting position	Shaft position	Flange position	Terminal box position	Cable entry position	Output direction of rotation
K47 DRK71M4/RS	M2	A	-	0°	"X"	CW
SF77 DRS90L4	M6	AB	AB	90°	"3"	-
KA97/II2GD EDRE132M4/2GD	M4	B	-	270°	"2"	-
KH107 DRN160M4	M1	A	-	180°	"3"	-
KAF67AM90	M3	A	B	-	-	-
K47 DRE90MJ4	M2	A	-	0°	"X"	-
R67 DR2S80M4	M1	-	-	90°	"X"	-
KA29/II2GD EDRN90L4/3G	M4	B	-	270°	"2"	-

24832936/EN – 09/2018

5.2.4 Position motor terminal box and foot for gearmotors with motor option /FM

With gearmotors, the motor is designed as flange-mounted motor for mounting to gear units. It is also possible to provide the motor with feet that can be used for customer components. The load values of the feet are available from SEW-EURODRIVE on request. The position of the foot must be specified in the order.

The following figure shows the possible positions of the terminal box and the feet for gearmotors with motor option /FM.



13588943243

[1] Terminal box positions [2] Foot positions

*) If not specified otherwise in the order, the gearmotor is delivered with foot position B (90°) and terminal box position R (0°).

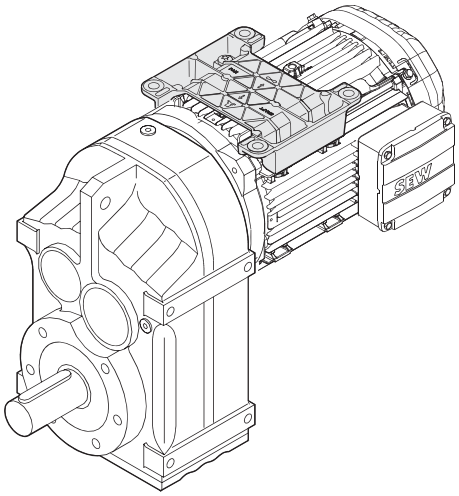
INFORMATION

For motors in size 63 the foot is always positioned at 90° and the terminal box at 270°.

INFORMATION

The foot on the motor is not suited to attach a complete gearmotor.

Example: Gearmotor with motor option /FM:



13678896779

Order information on mounting position of the complete drive, foot positions, terminal box and cable entry:

Mounting position entire drive:	M1
Terminal box position:	R (0°)
Cable entry:	X
Foot position:	T (270°)

24832936/EN – 09/2018

5.3 Key to the mounting position sheets

INFORMATION

The positions of the breather valve, oil level plug, and oil drain plug specified in the mounting position sheets are binding and comply with the assembly specifications.

The motors are only depicted symbolically on the mounting position sheets.

INFORMATION

For gear units with solid shaft: The displayed shaft is always on the A end.

For shaft-mounted gear units: The shaft with dashed lines represents the customer shaft. The output end (= output shaft position) is always shown on the A-side.

INFORMATION

SPRIOPLAN® gearmotors are not dependent on the mounting position, except for W..37 and W..47 gearmotors in mounting position M4. However, mounting positions M1 to M6 are also shown for SPIROPLAN® gearmotors to assist you in working with this documentation.

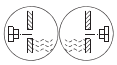
INFORMATION

SPIROPLAN® gearmotors W..10 to W..30 cannot be equipped with breather valves, oil level plugs or drain plugs.

SPIROPLAN® gearmotors W..37 and W..47 are equipped with breather valves in mounting position M4 and with oil drain plugs in mounting position M2.

5.3.1 Symbols used

The following table shows the icons used in the mounting position sheets.

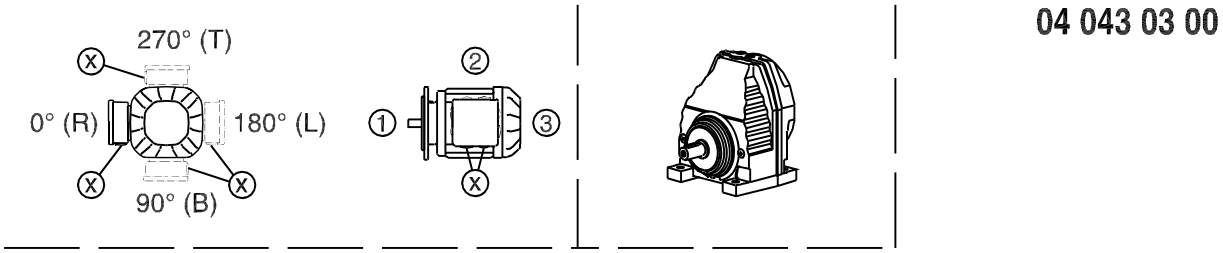
Icon	Meaning
	Breather valve
	Oil level plug [1]
	Oil drain plug

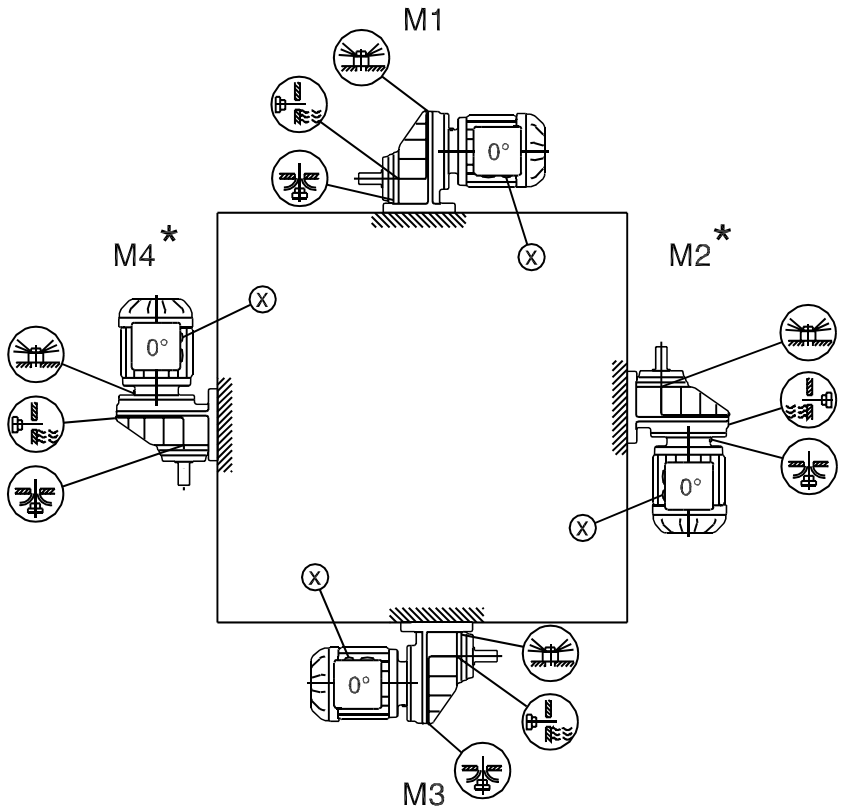
1) Does not apply to the 1st gear unit (large gear unit) of compound gear units. See chapter "Position of the oil level plug of compound gear units".

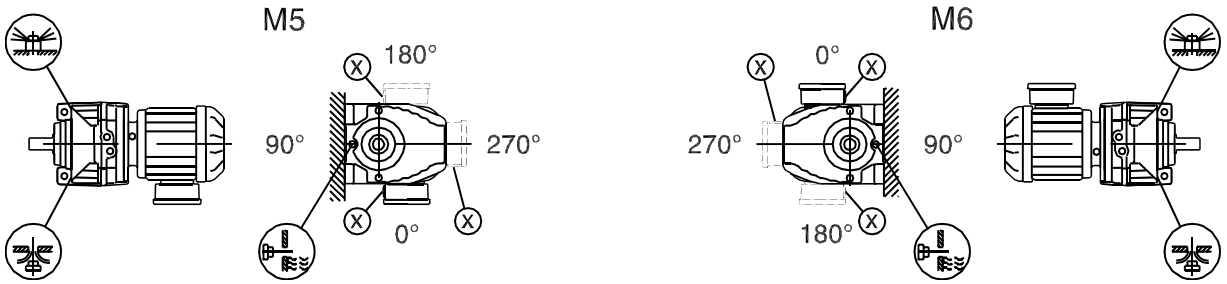
5.4 Mounting position sheets

5.4.1 Mounting positions of helical gearmotors

RX57-RX107





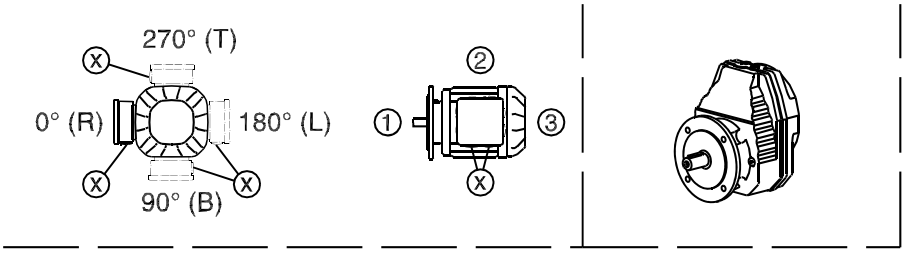


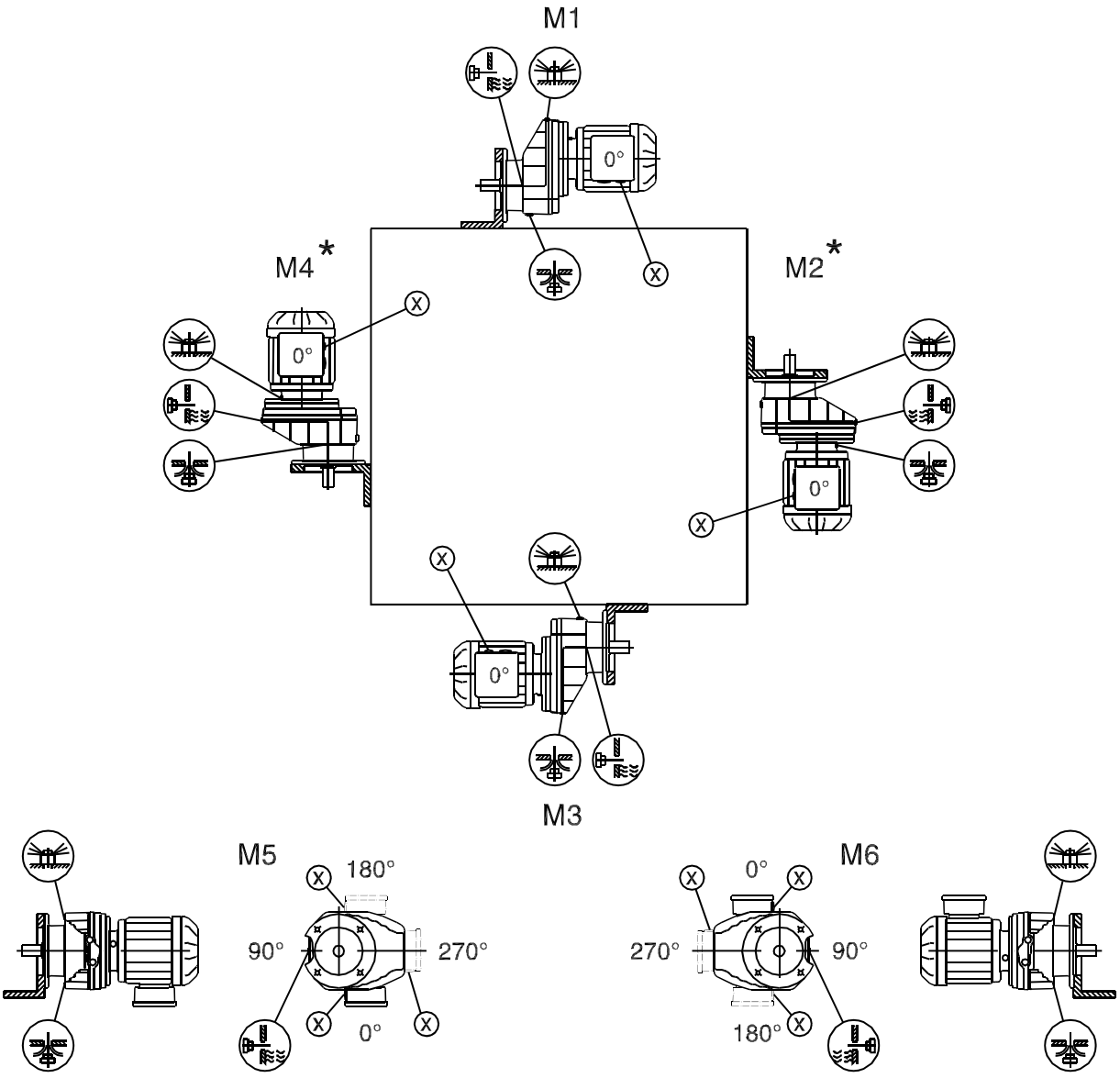
* (→ 🗎 49)

24832936/EN – 09/2018

RXF57-RXF107

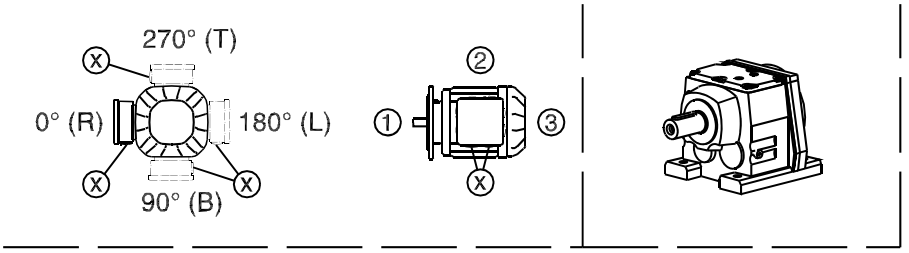
04 044 03 00



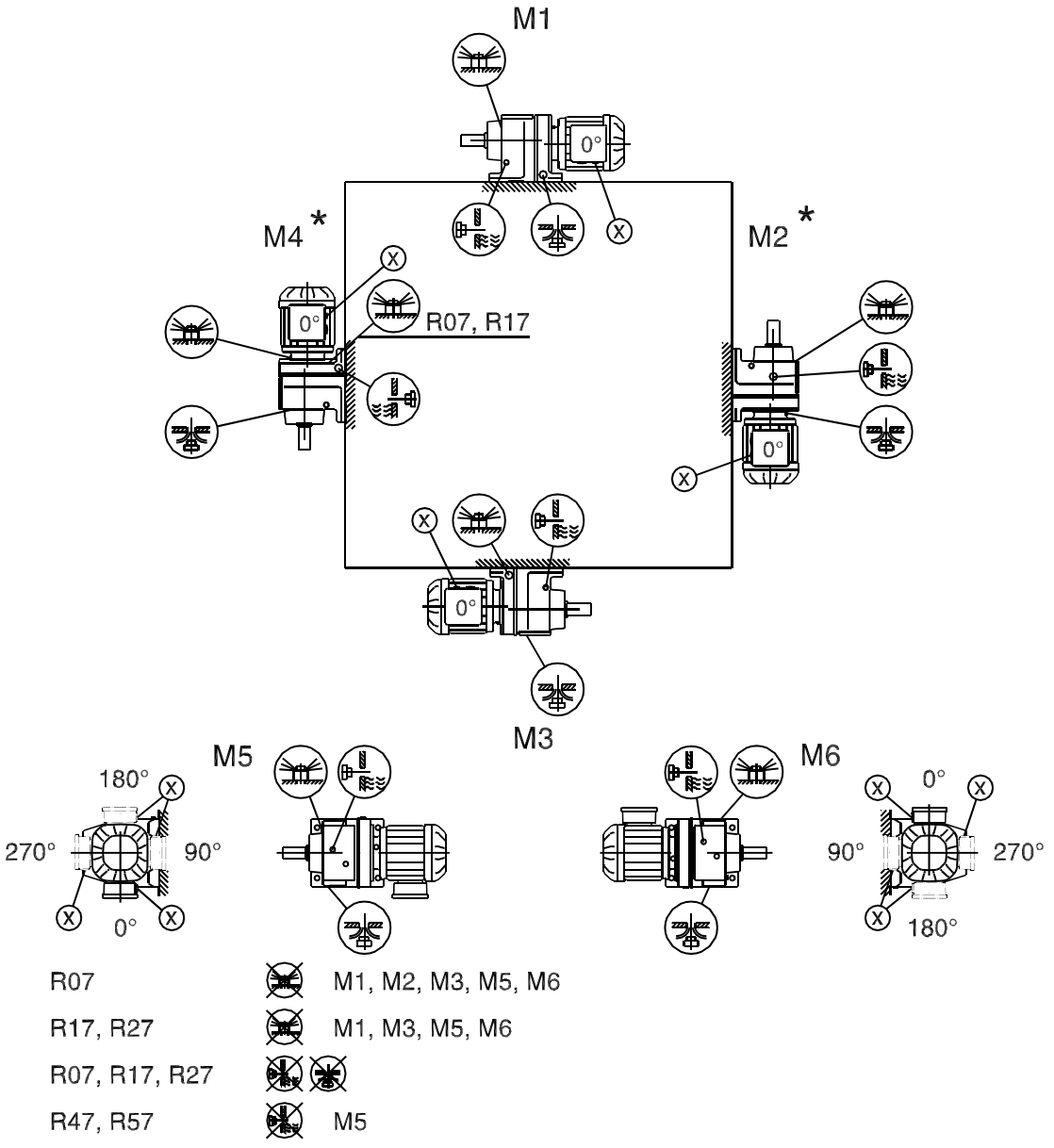


* (→ 49)

R07-R167



04 040 04 00



R07	⊗	M1, M2, M3, M5, M6
R17, R27	⊗	M1, M3, M5, M6
R07, R17, R27	⊗ ⊗	
R47, R57	⊗	M5

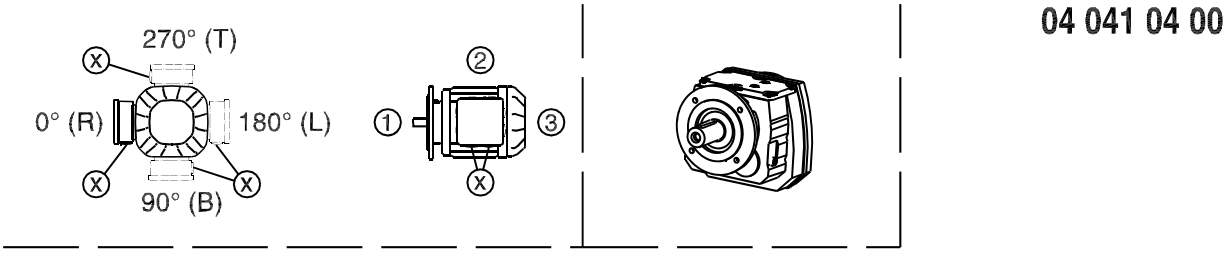
* (→ 🗎 49)

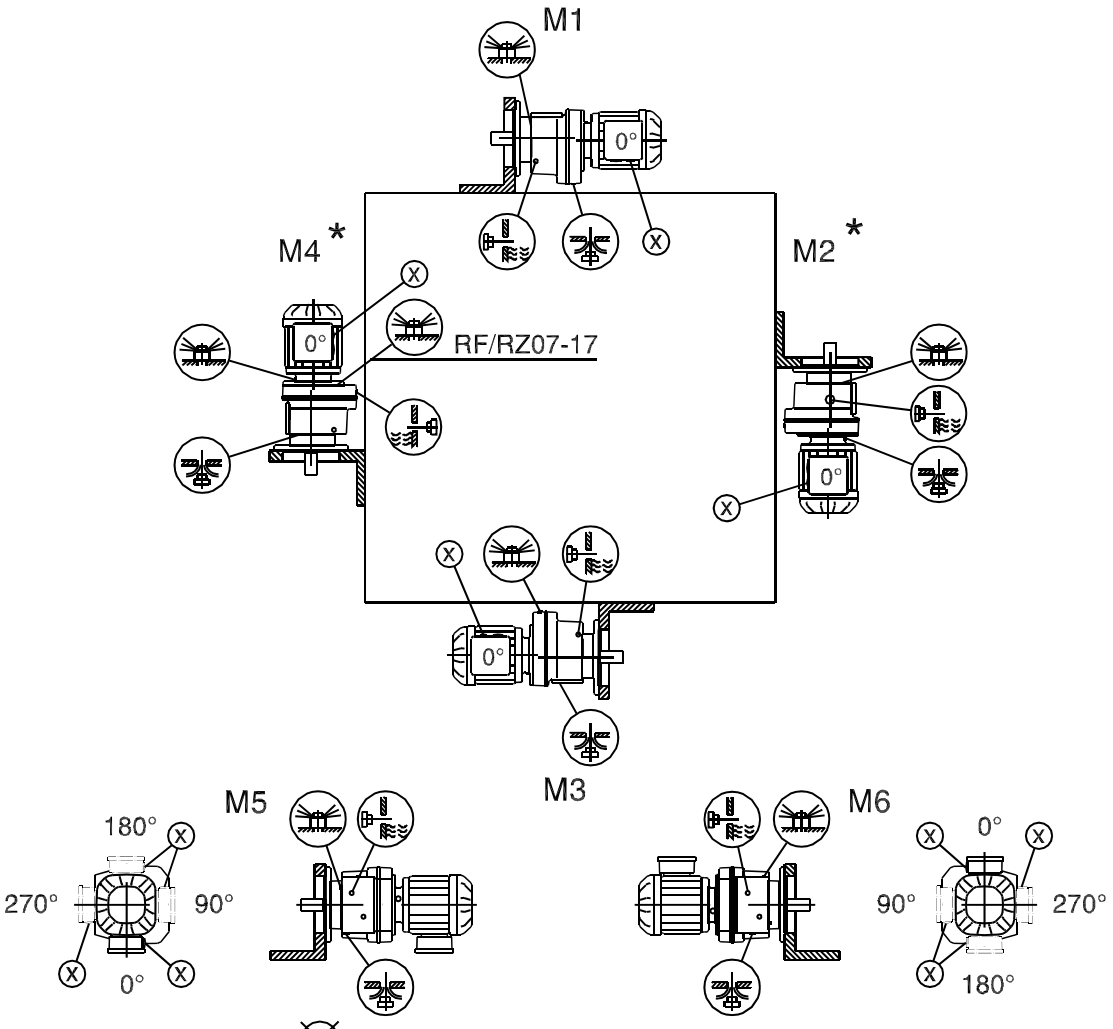
Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

RF07-RF167, RZ07-RZ87

04 041 04 00



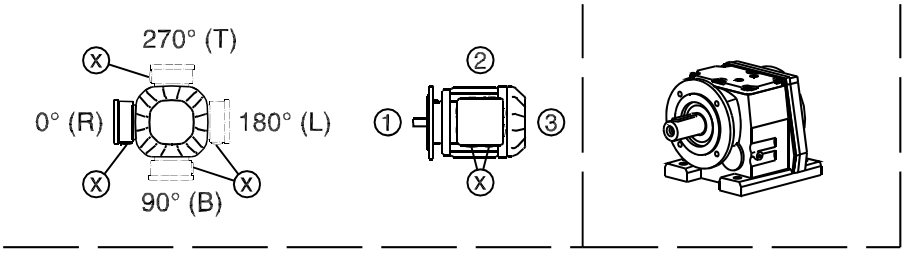


RF/RZ07	M1, M2, M3, M5, M6
RF/RZ17, 27	M1, M3, M5, M6
RF/RZ07, 17, 27	
RF/RZ47, 57	M5

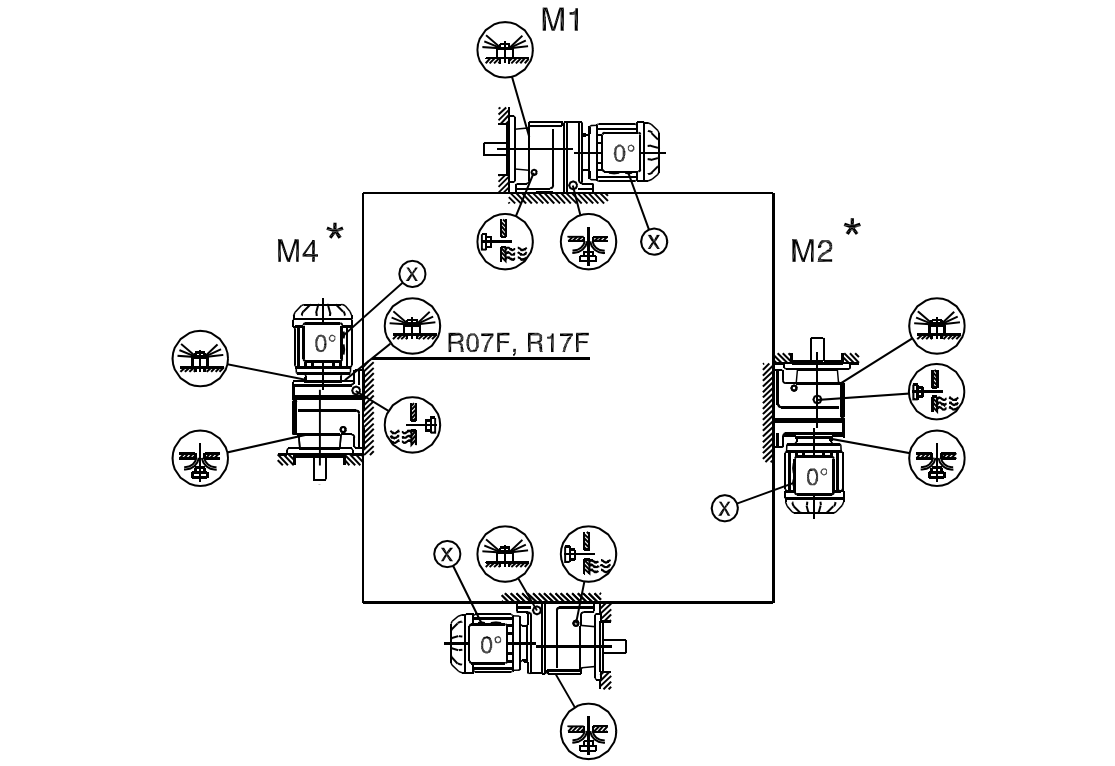
* (→ 🗎 49)

24832936/EN – 09/2018

R07F-R87F



04 042 04 00



R07F	M1, M2, M3, M5, M6
R17F, R27F	M1, M3, M5, M6
R07F, R17F, R27F	
R47F, R57F	M5

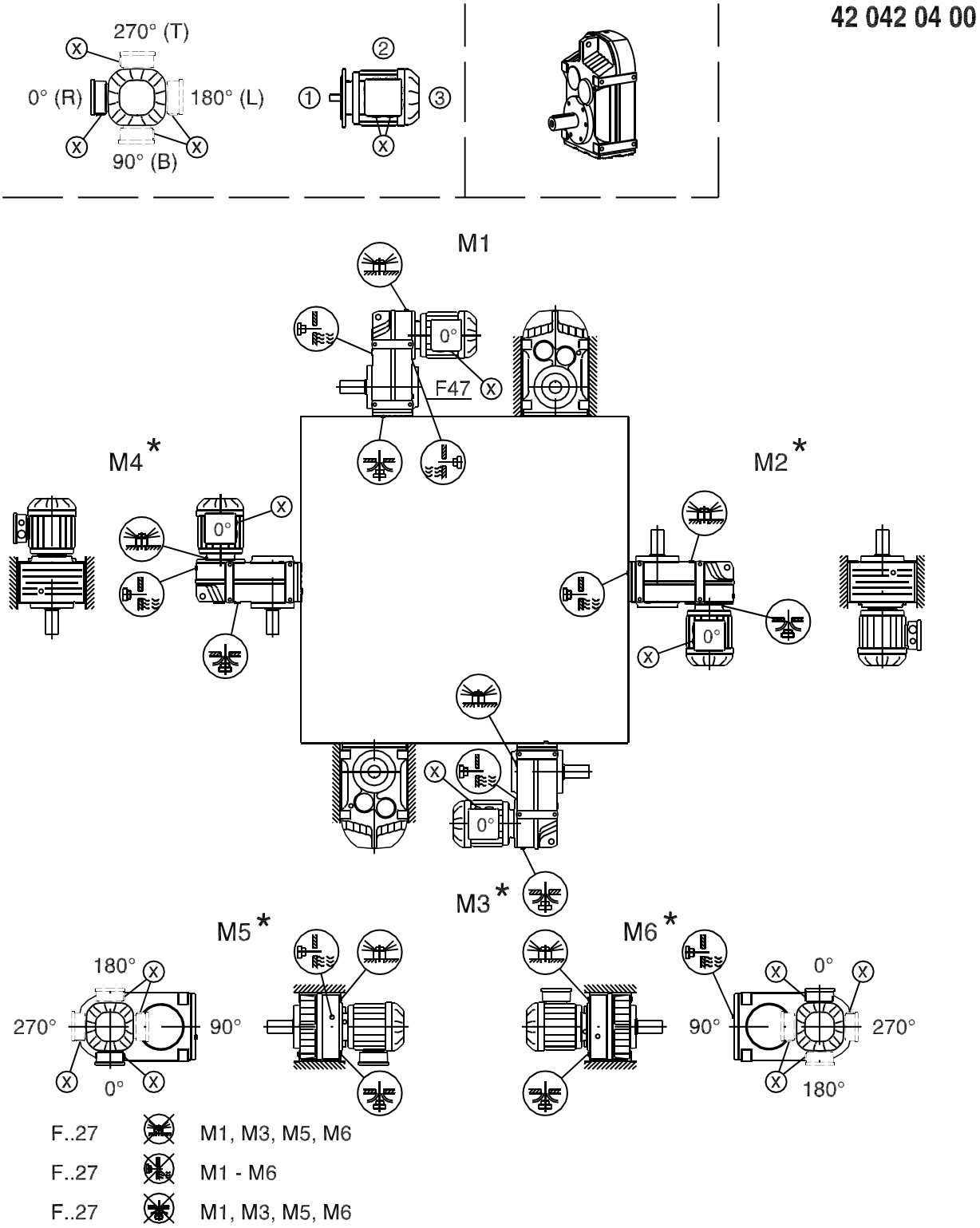
* (→ 🗎 49)

Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

5.4.2 Mounting positions of parallel-shaft helical gearmotors

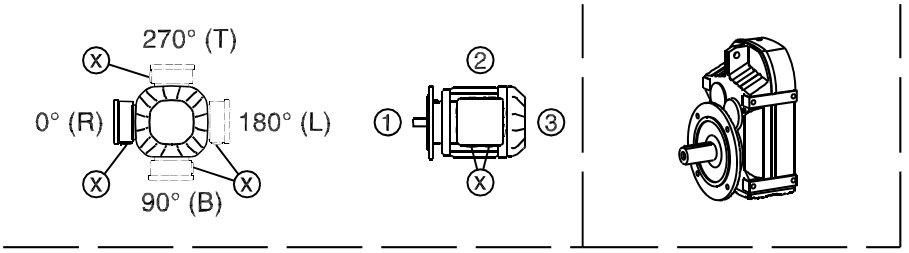
F/FA..B/FH27B-157B, FV27B-107B

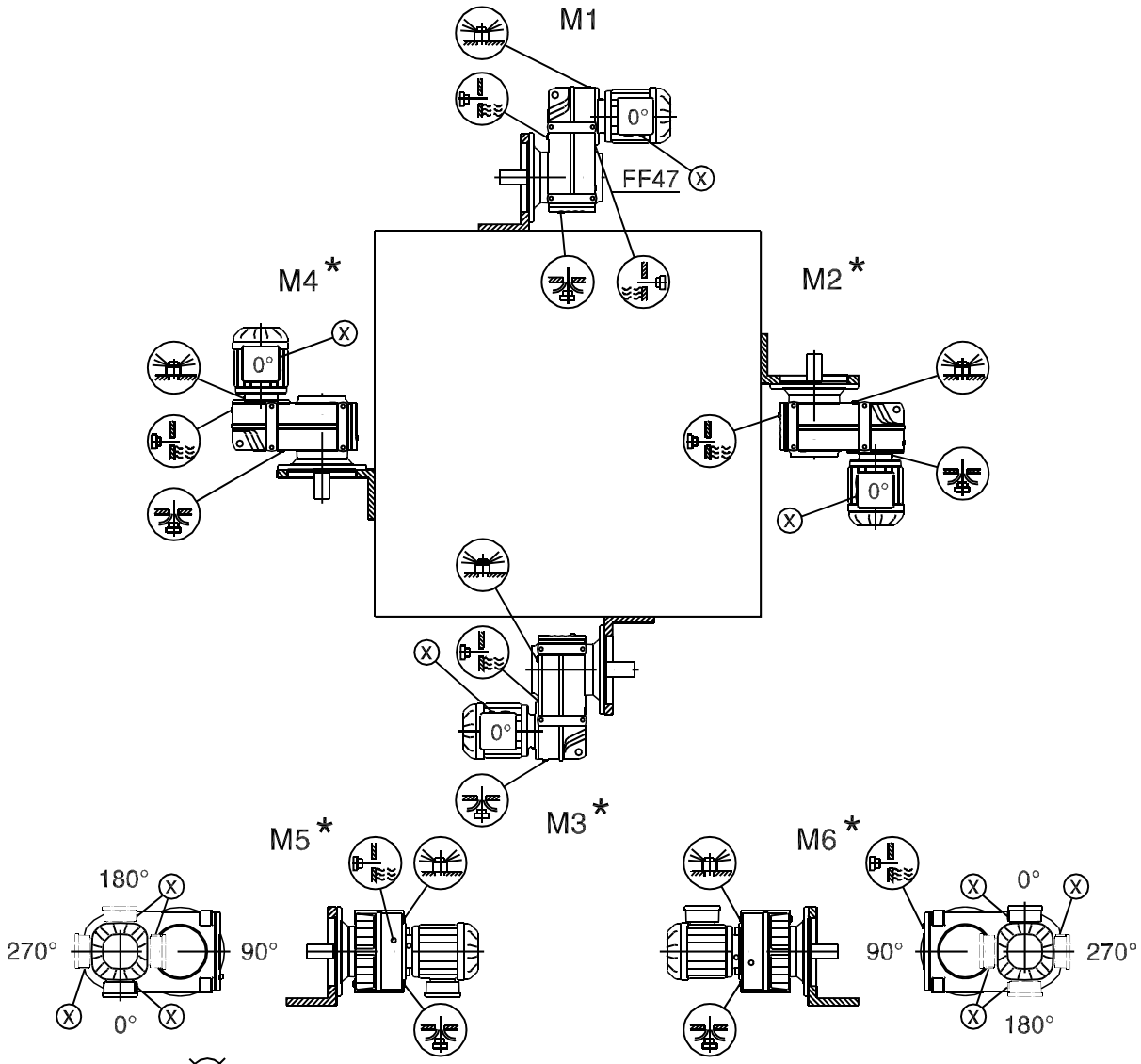


* (→ 🗎 49)

FF/FAF/FHF/FZ/FAZ/FHZ27-157, FVF/FVZ27-107, FM/FAM67-157

42 043 04 00





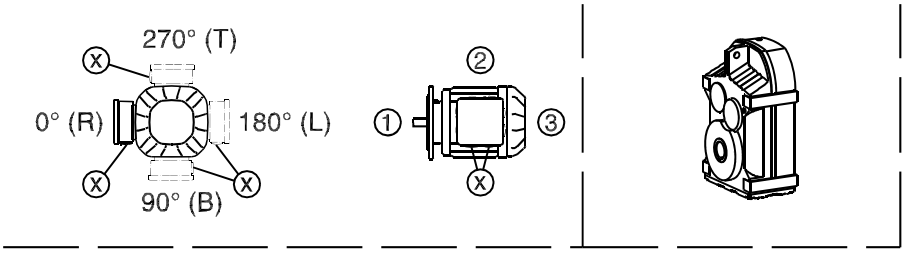
F..27		M1, M3, M5, M6
F..27		M1 - M6
F..27		M1, M3, M5, M6

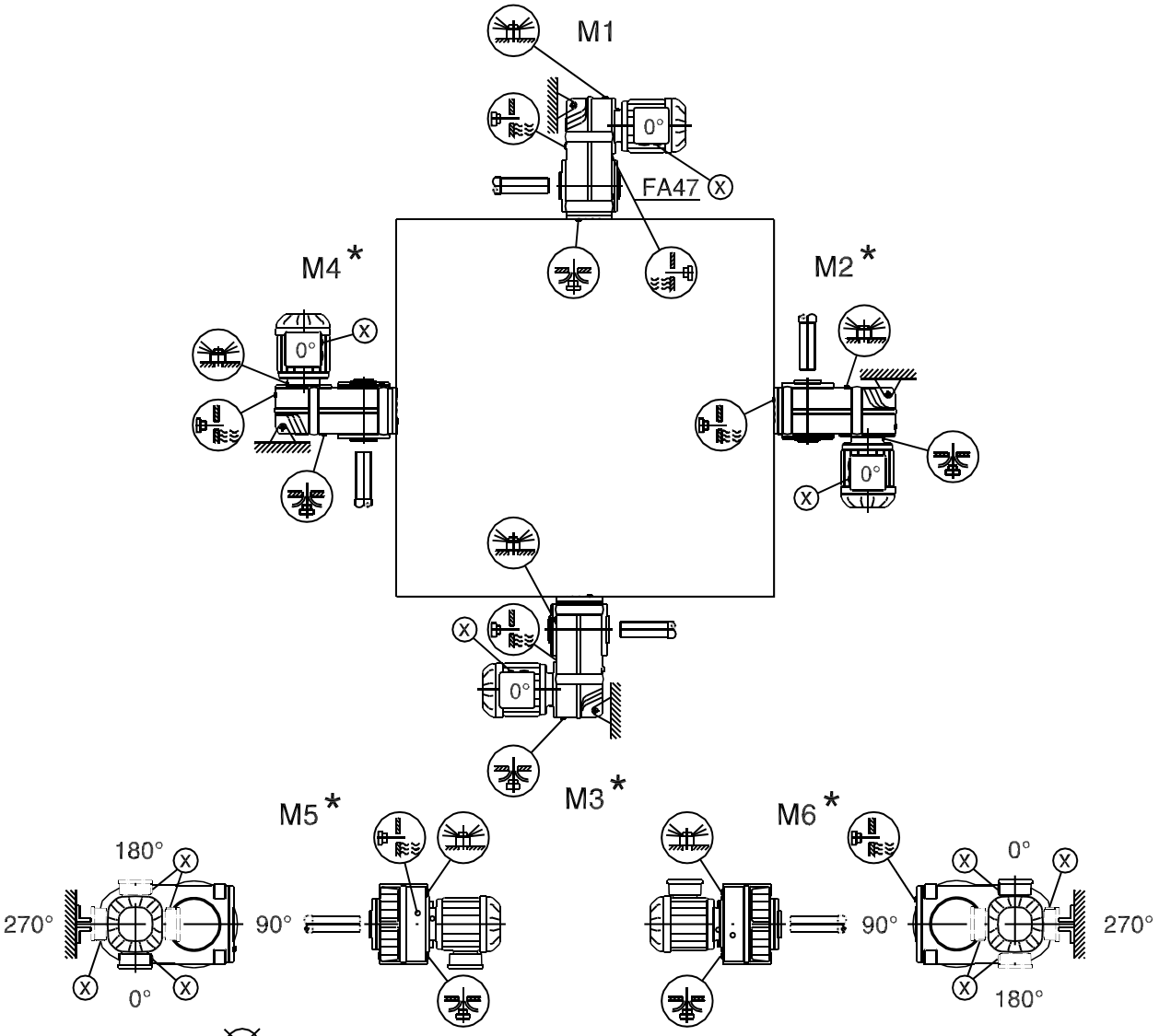
* (→ 49)

24832936/EN – 09/2018

FA/FH27-157, FV27-107, FT37-97

42 044 04 00





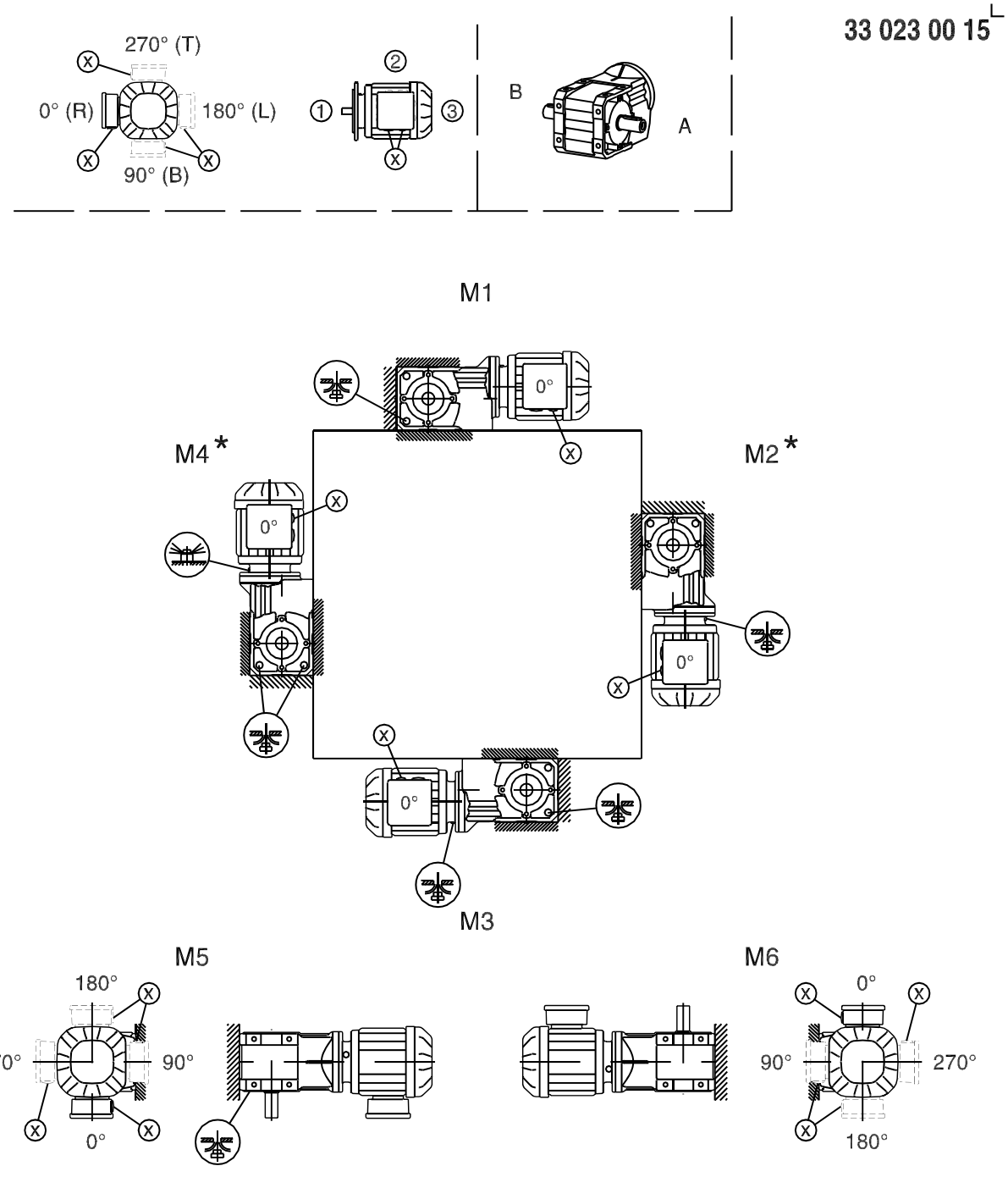
F..27		M1, M3, M5, M6
F..27		M1 - M6
F..27		M1, M3, M5, M6

* (→ 🗎 49)

24832936/EN – 09/2018

5.4.3 Mounting positions of helical-bevel gearmotors

K/KA..B/KH19B-29B

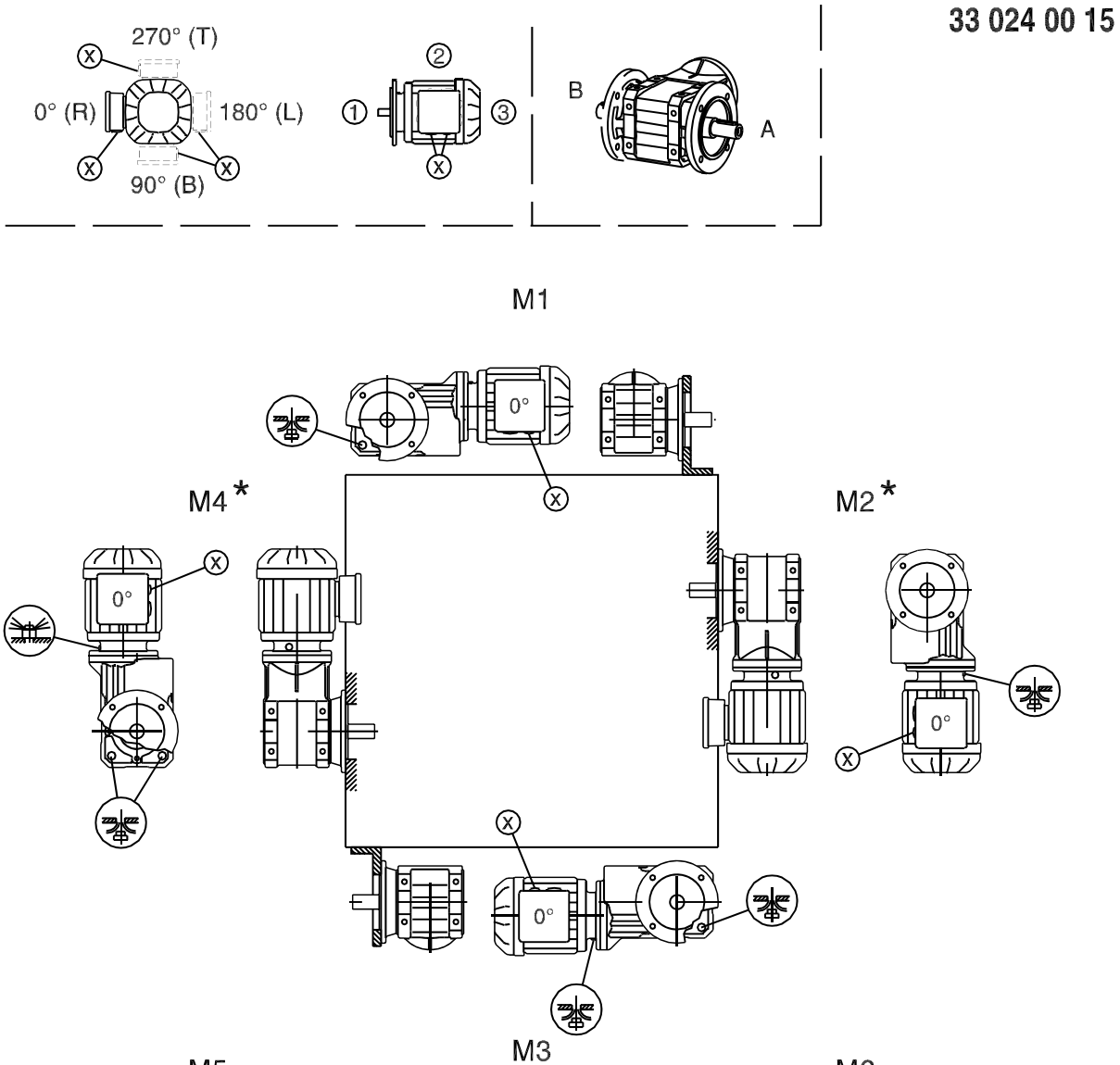


* (→ 🗎 49)

Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

KF..B/KAF..B/KHF19B-29B

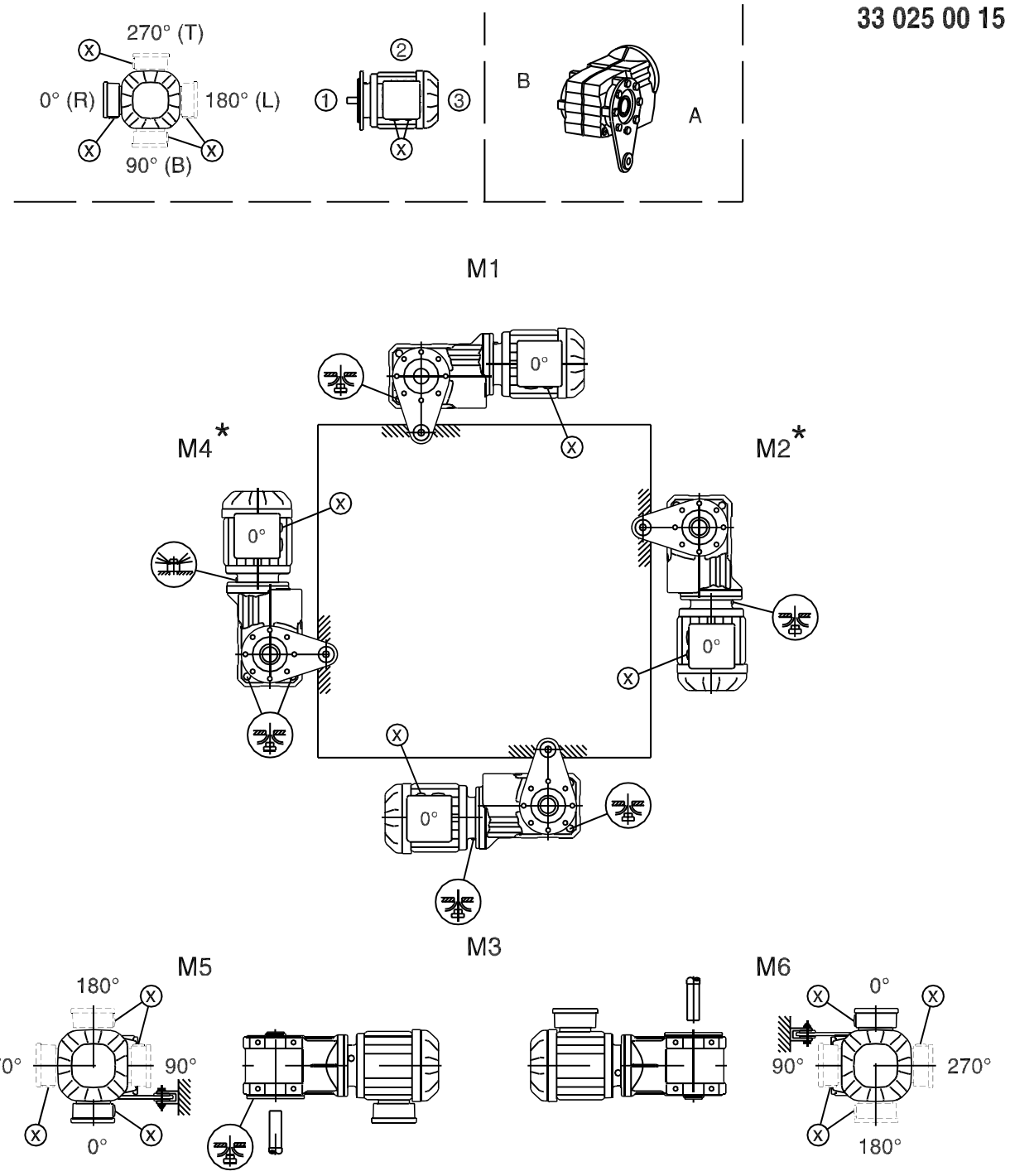


* (→ 🗎 49)

Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

KA..B/KH19B-29B

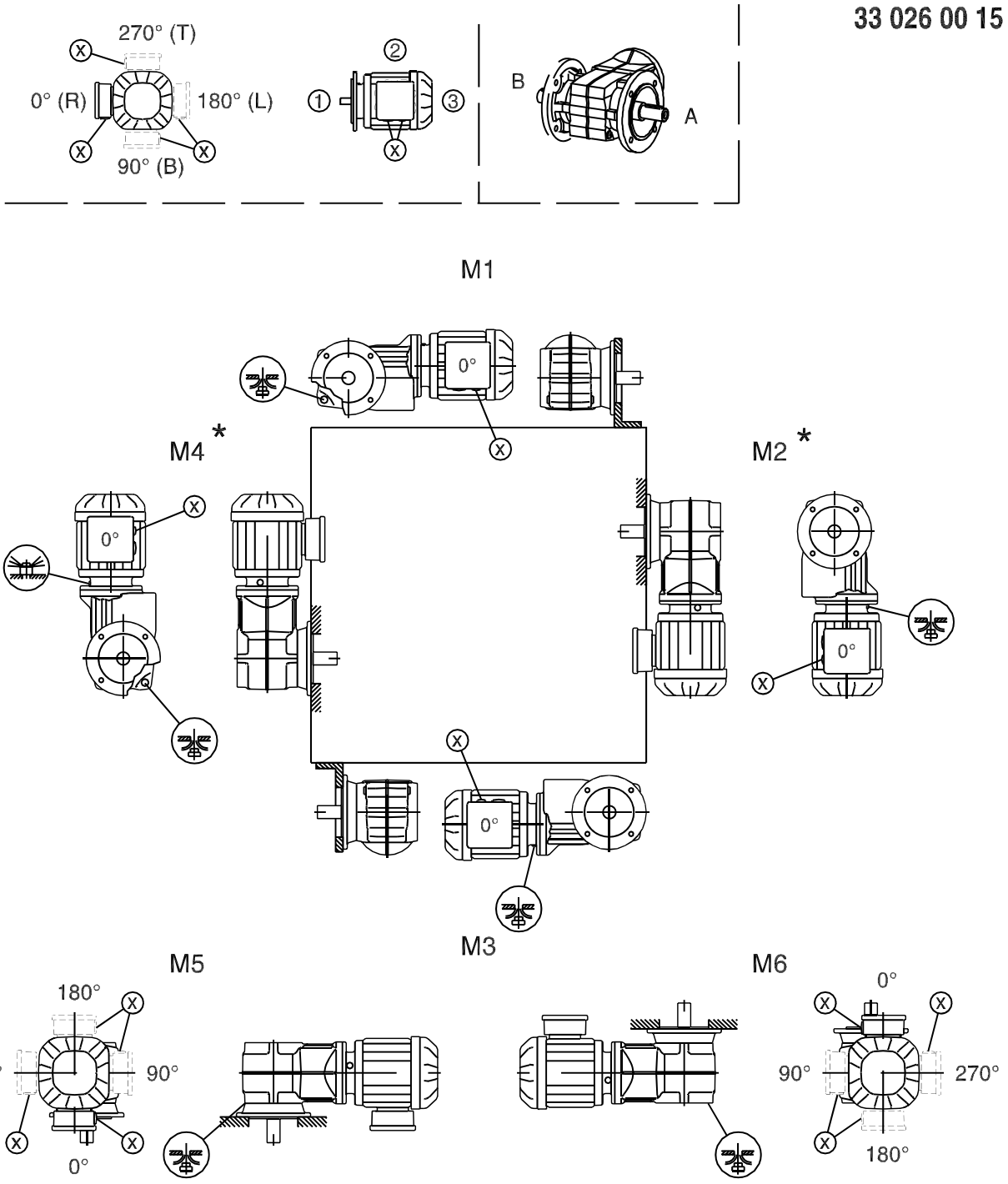


* (→ 🗎 49)

Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

KF/KAF/KHF19-29

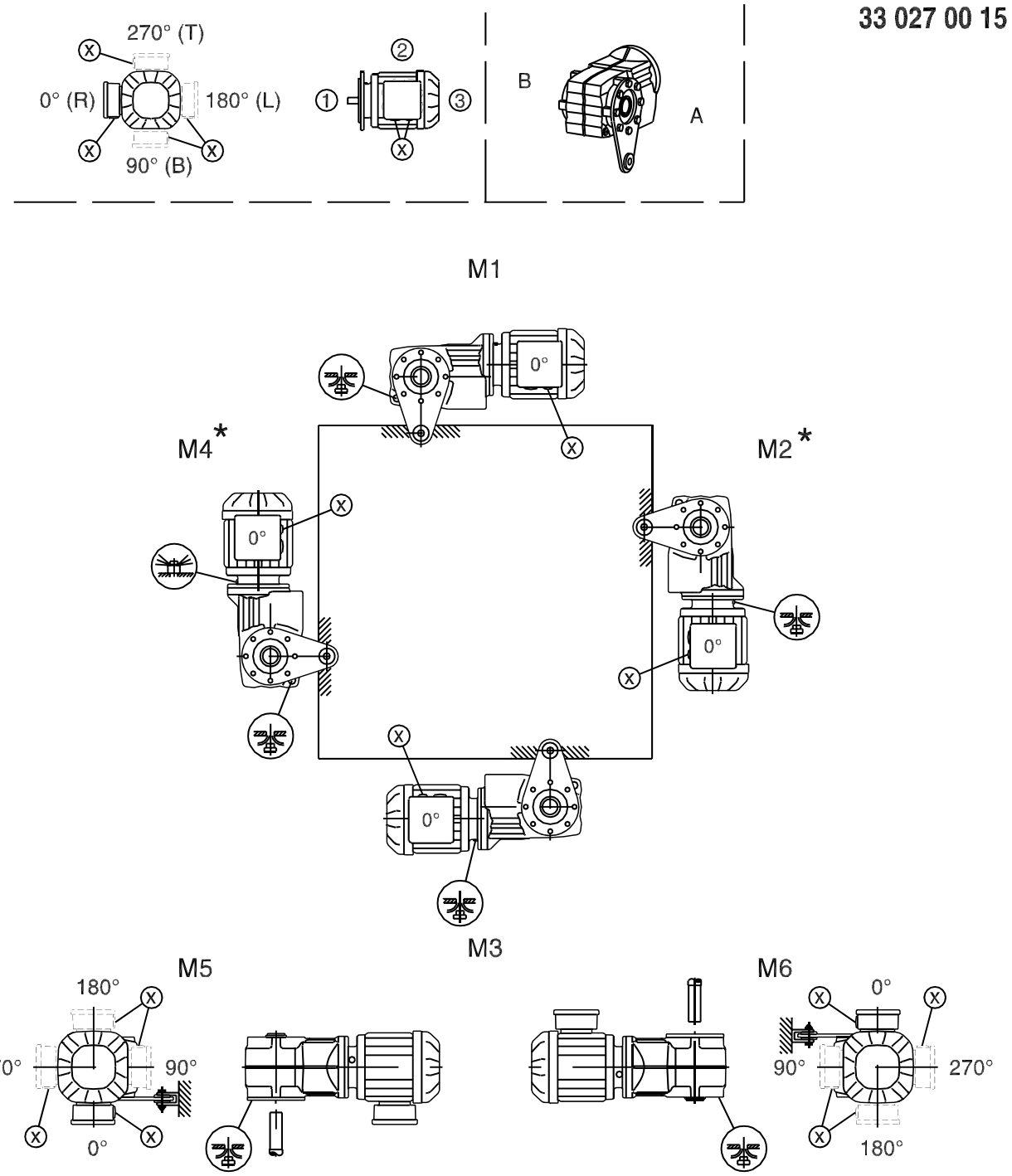


* (→ 🗎 49)

Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

KA/KH19-29



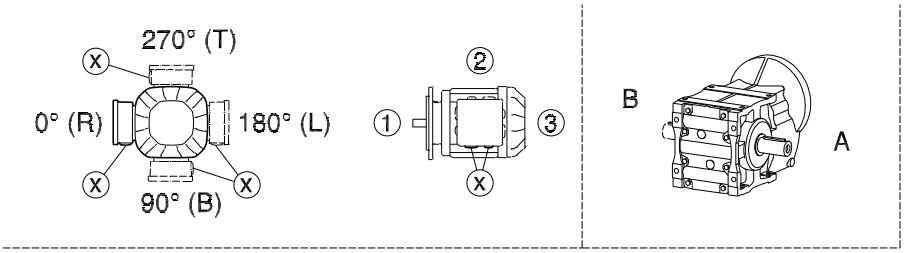
* (→ 49)

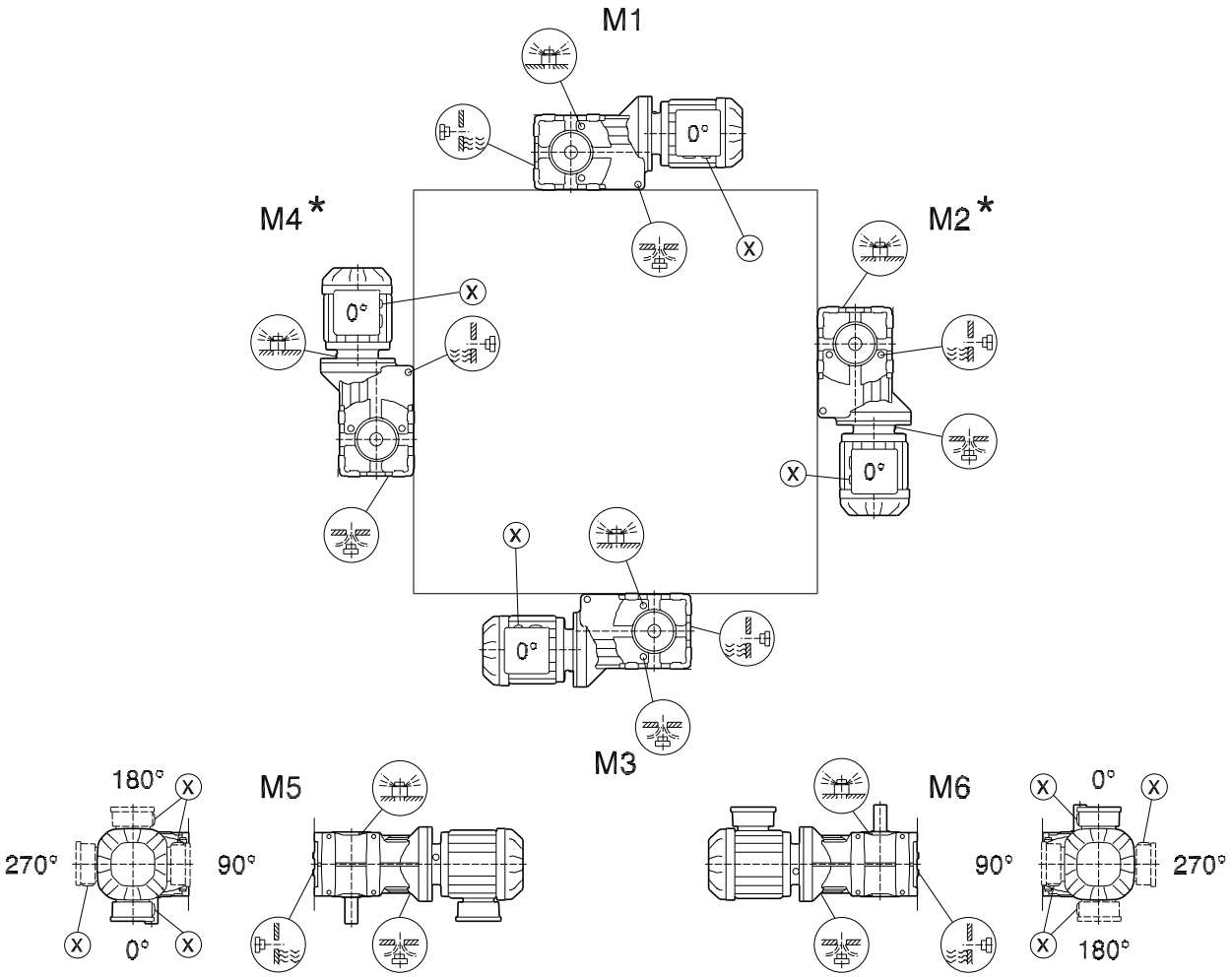
24832936/EN – 09/2018

1.3 Mounting positions of helical-bevel gearmotors

1.3.1 K/KA..B39-49

33 092 03 14

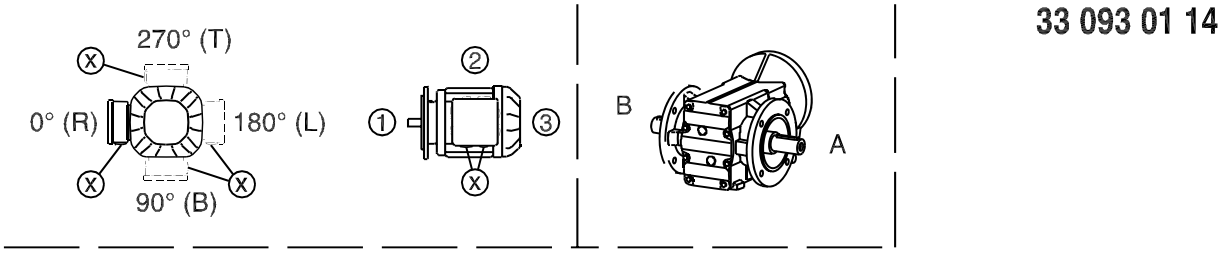


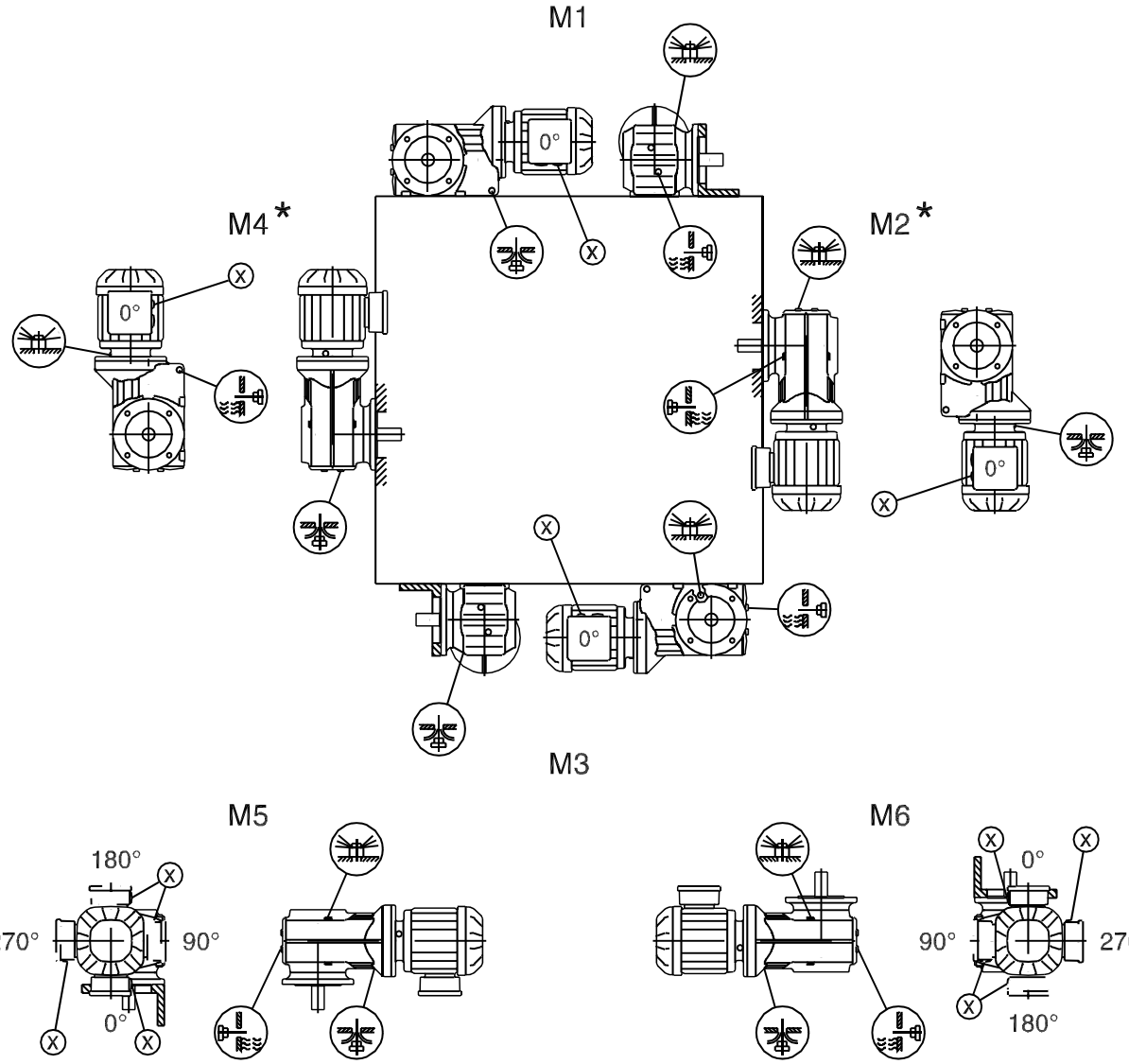


*

Revised Page 87

KF/KAF/KHF39-49



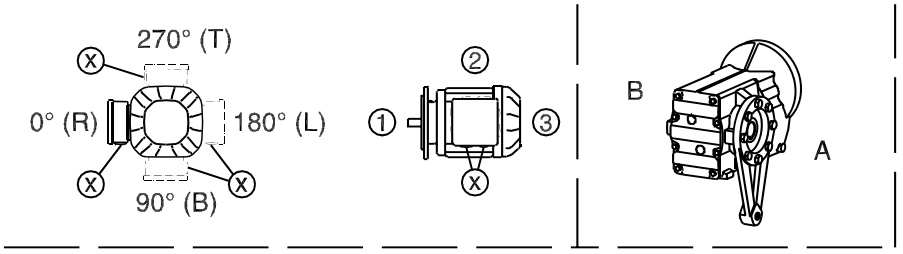


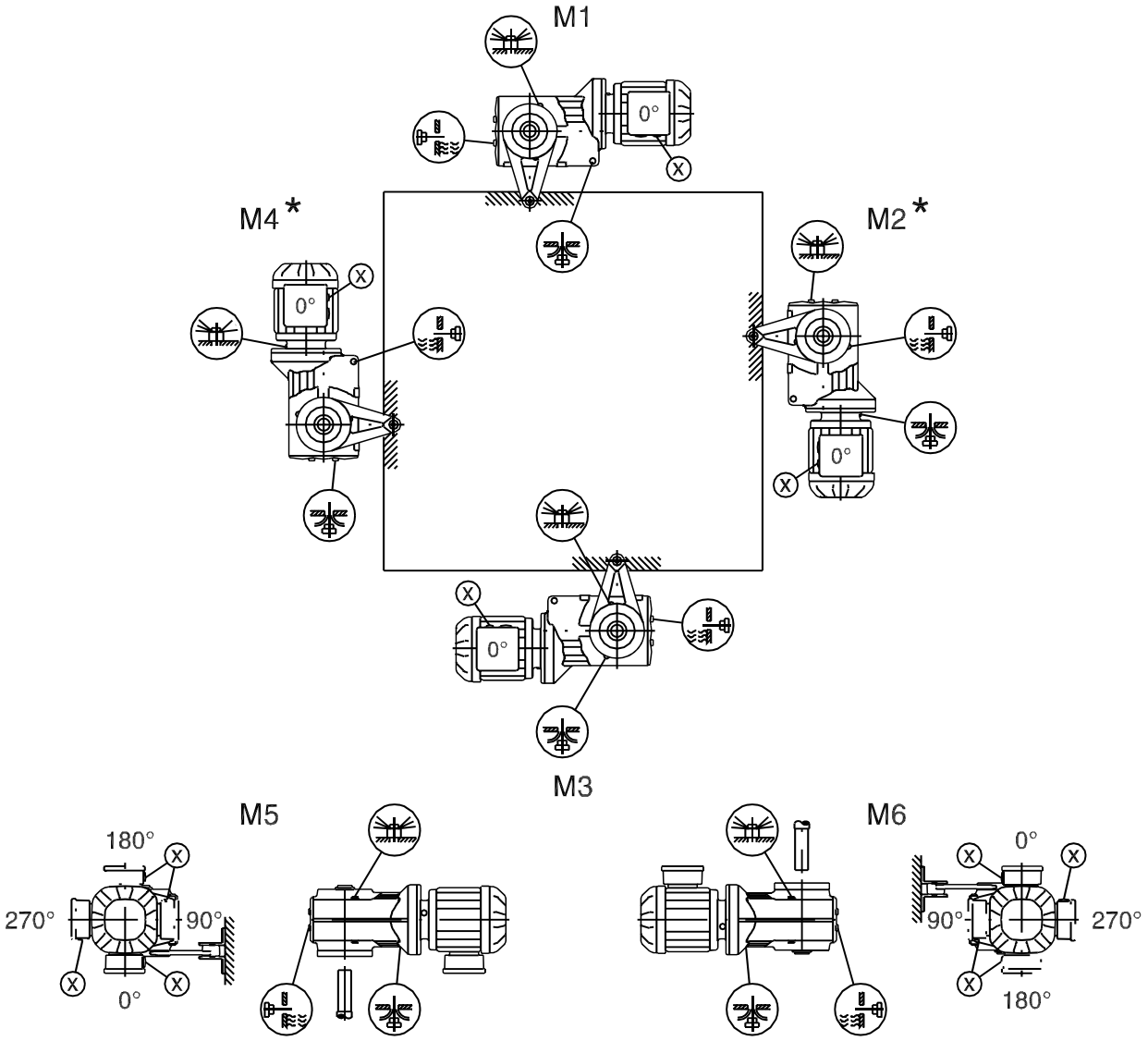
* (→ 49)

24832936/EN – 09/2018

KA/KH/KT39-49

33 094 01 14



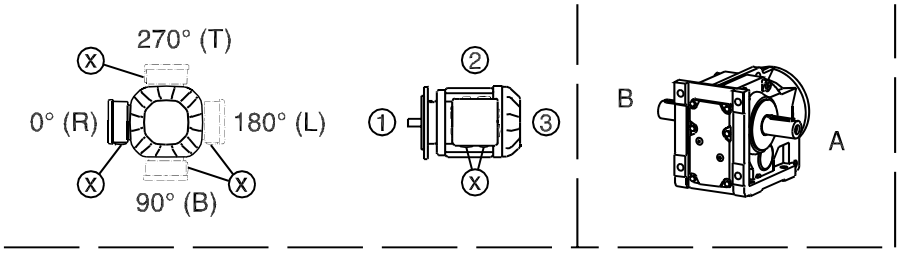


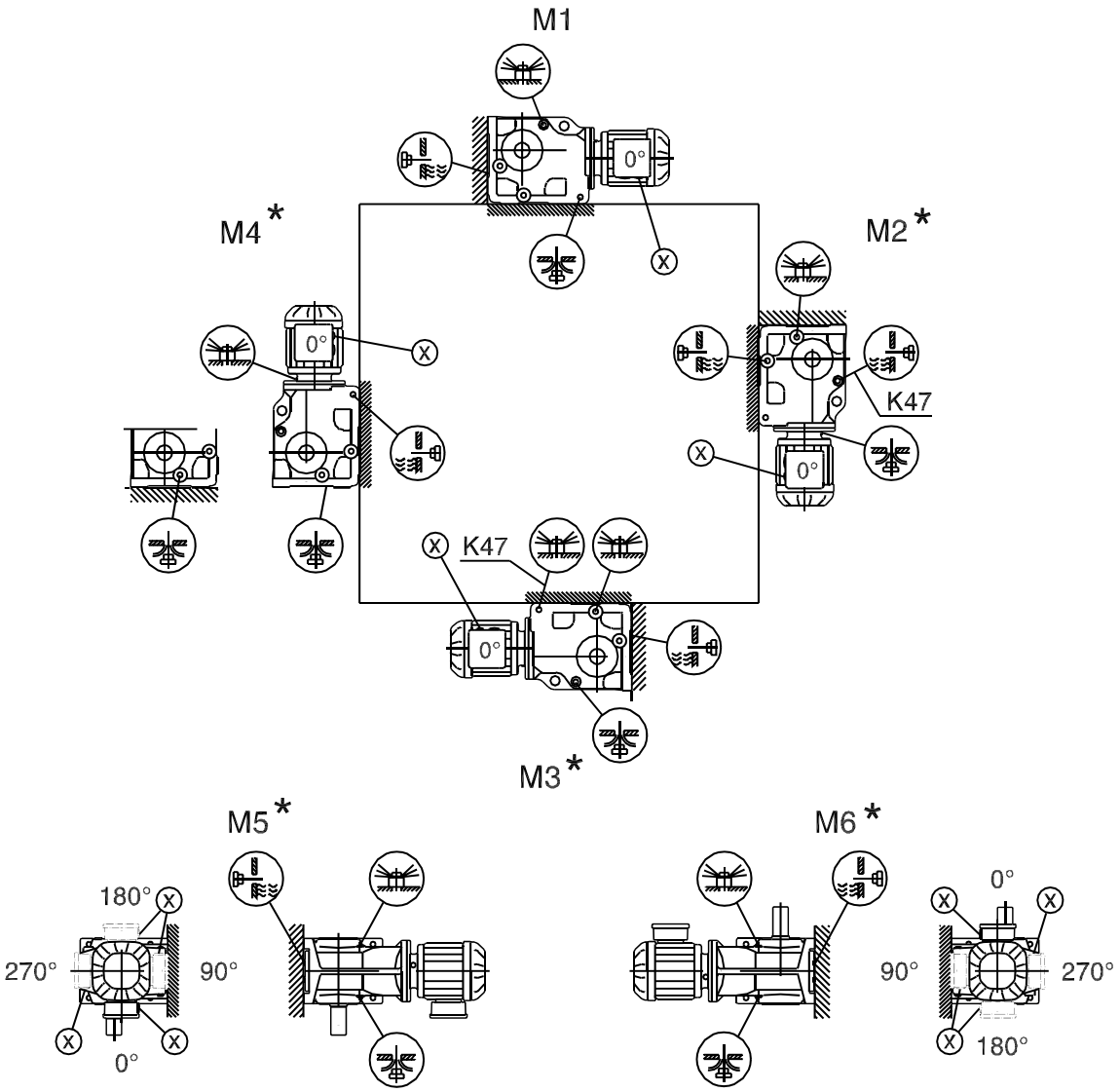
* (→ 🖹 49)

24832936/EN – 09/2018

K/KA..B/KH47B-157B, KV47B-107B

34 025 05 00



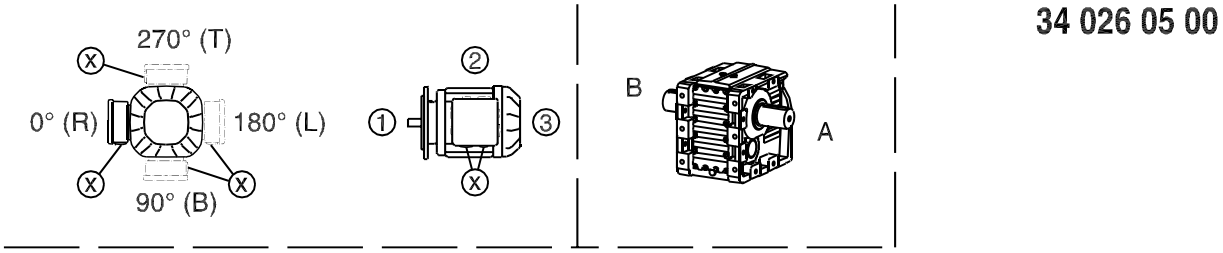


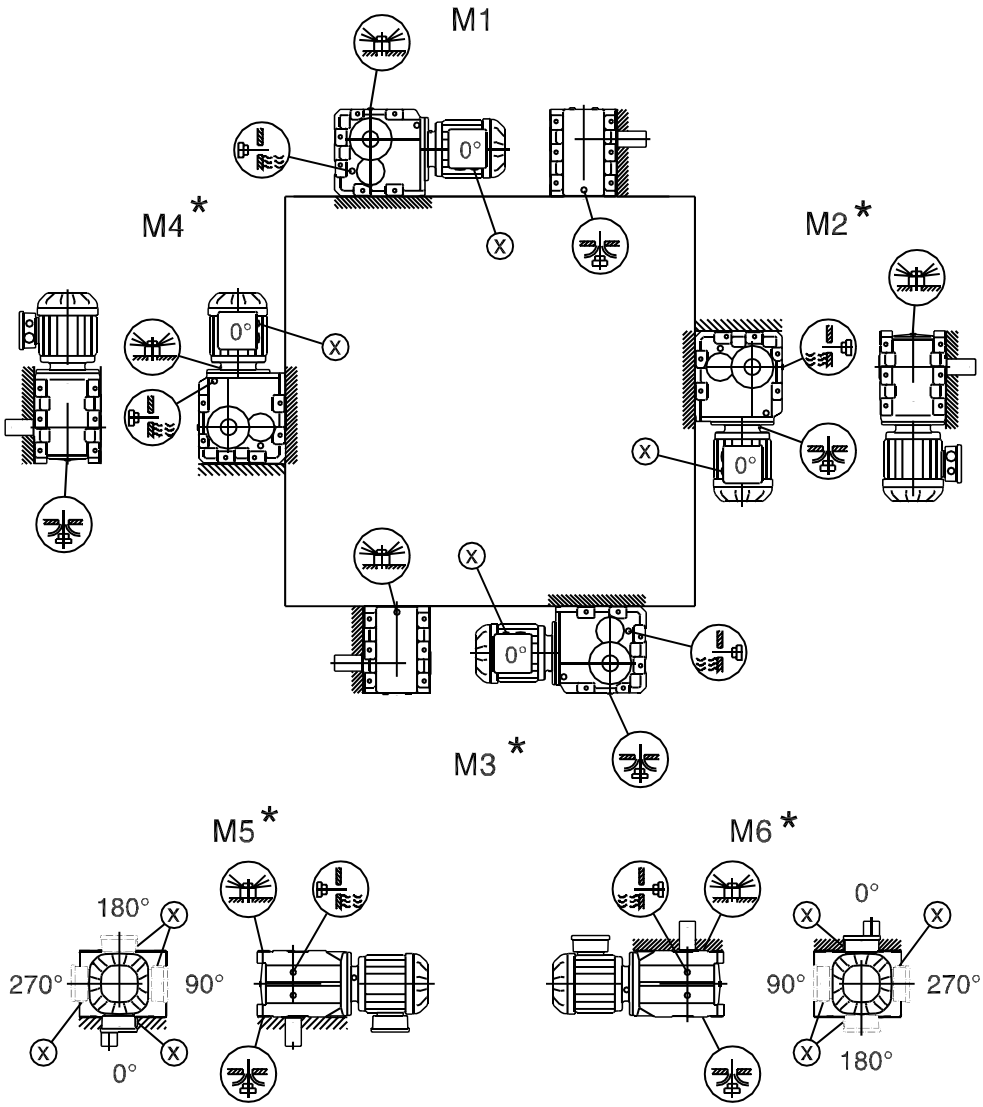
* (→ 🗎 49)

Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

K167-187, KH167B-187B





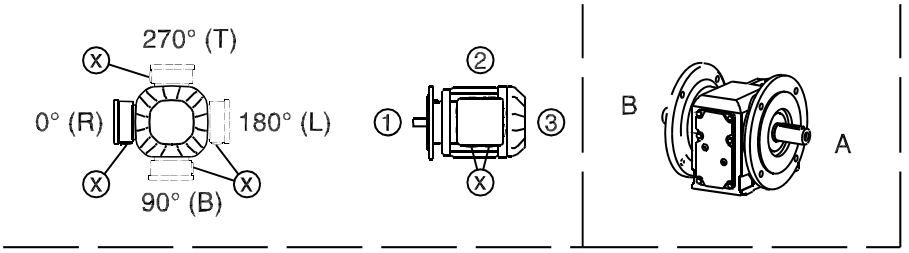
* (→ 🗎 49)

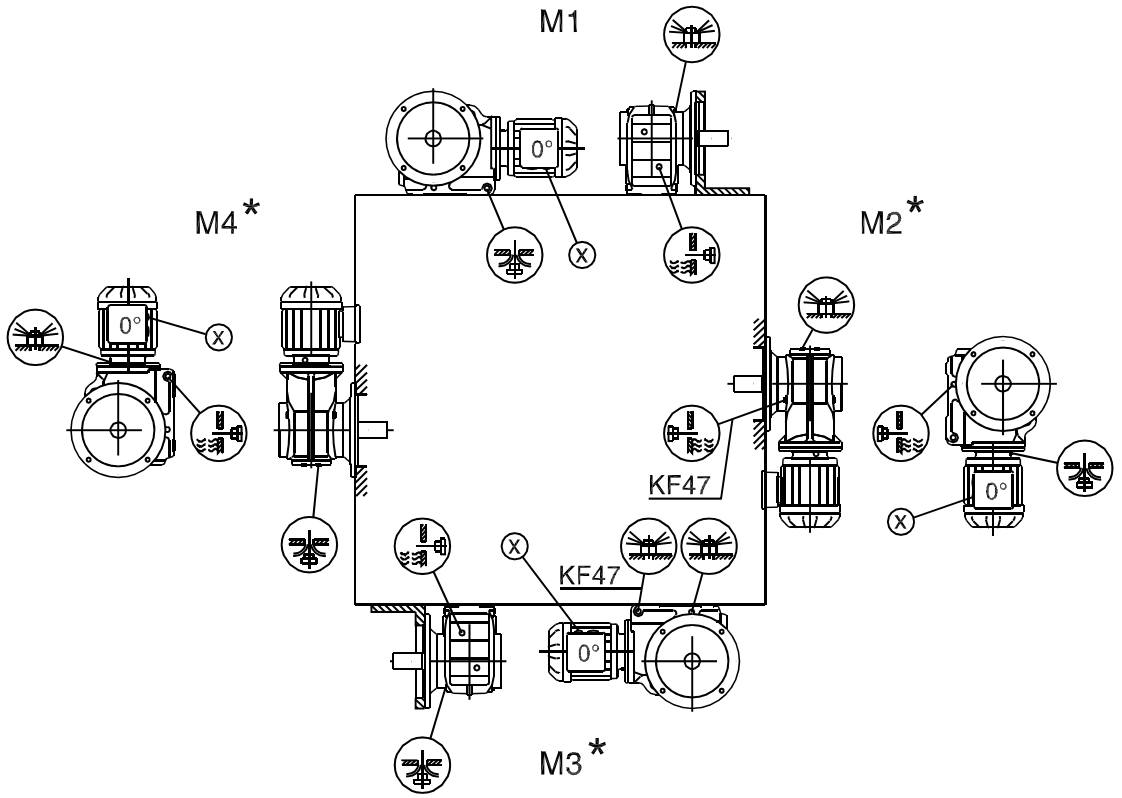
Observe the information in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

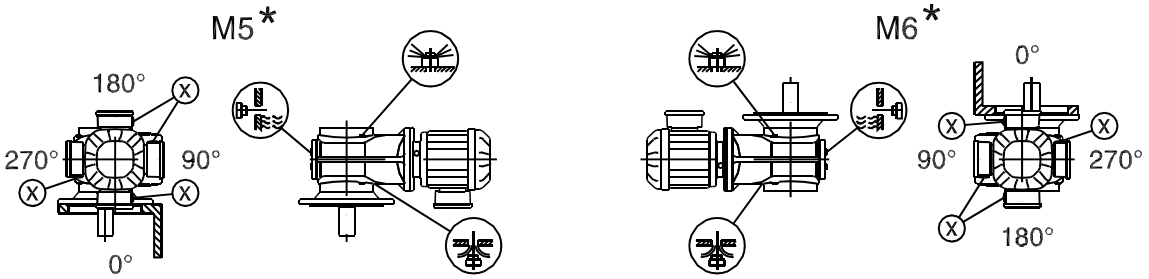
24832936/EN – 09/2018

KF/KAF/KHF/KZ/KAZ/KHZ37–157, KVF/KVZ37–107, KM/KAM67–157

34 027 04 00





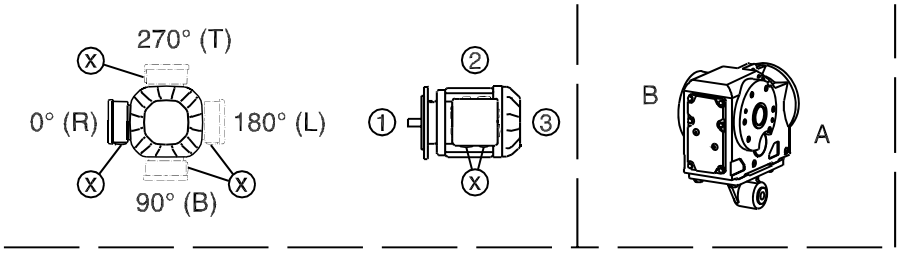


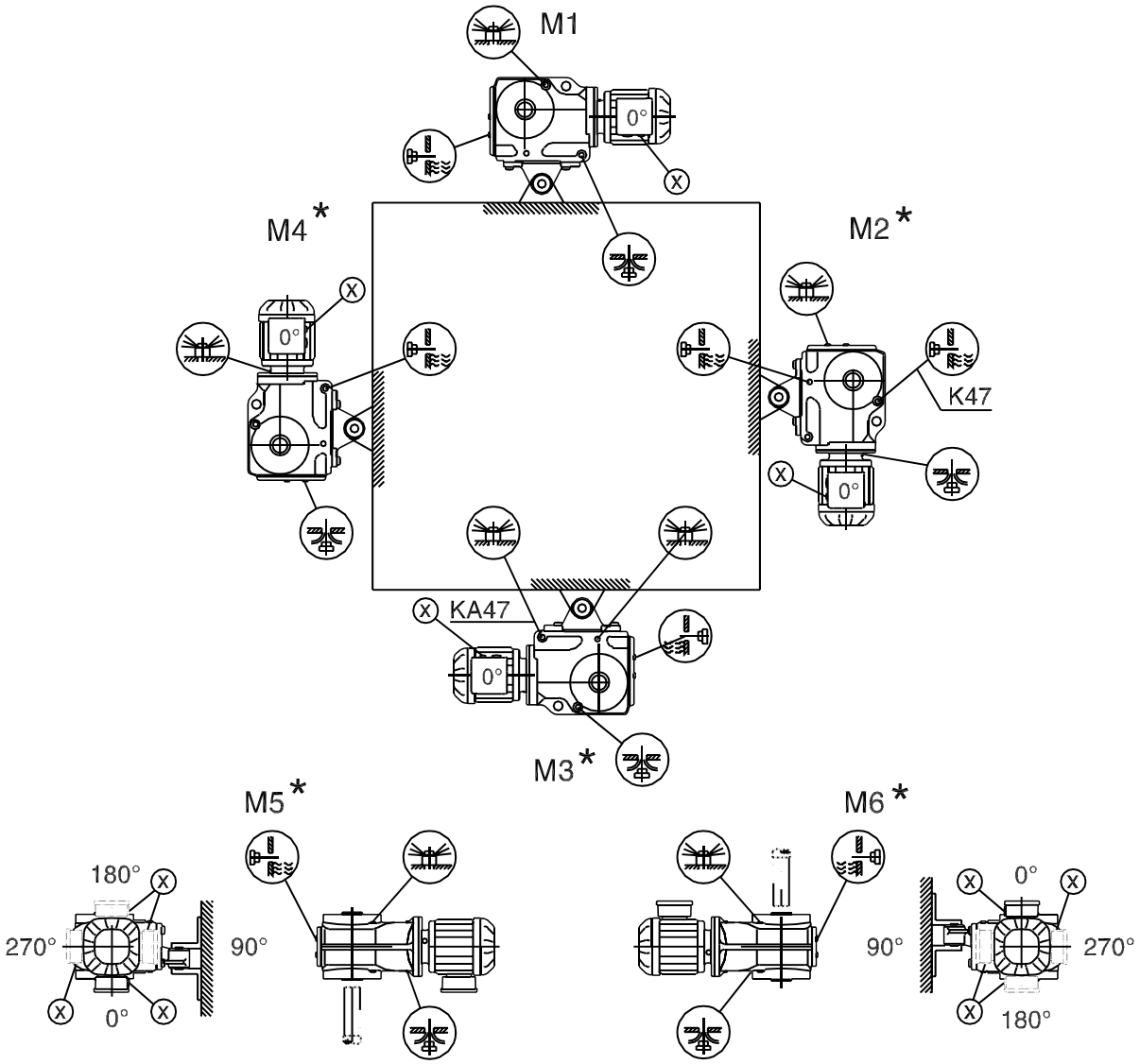
* (→ 49)

24832936/EN – 09/2018

KA/KH37-157, KV37-107, KT37-97

39 025 05 00



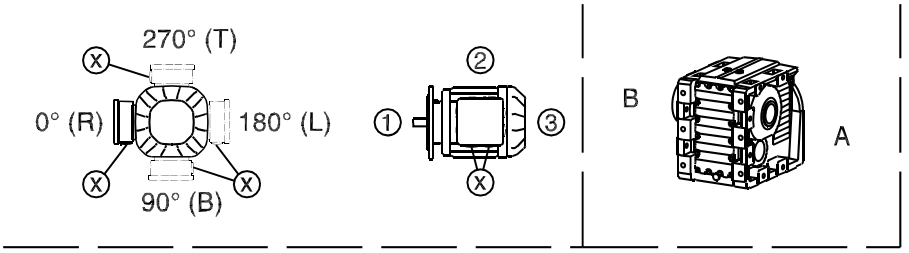


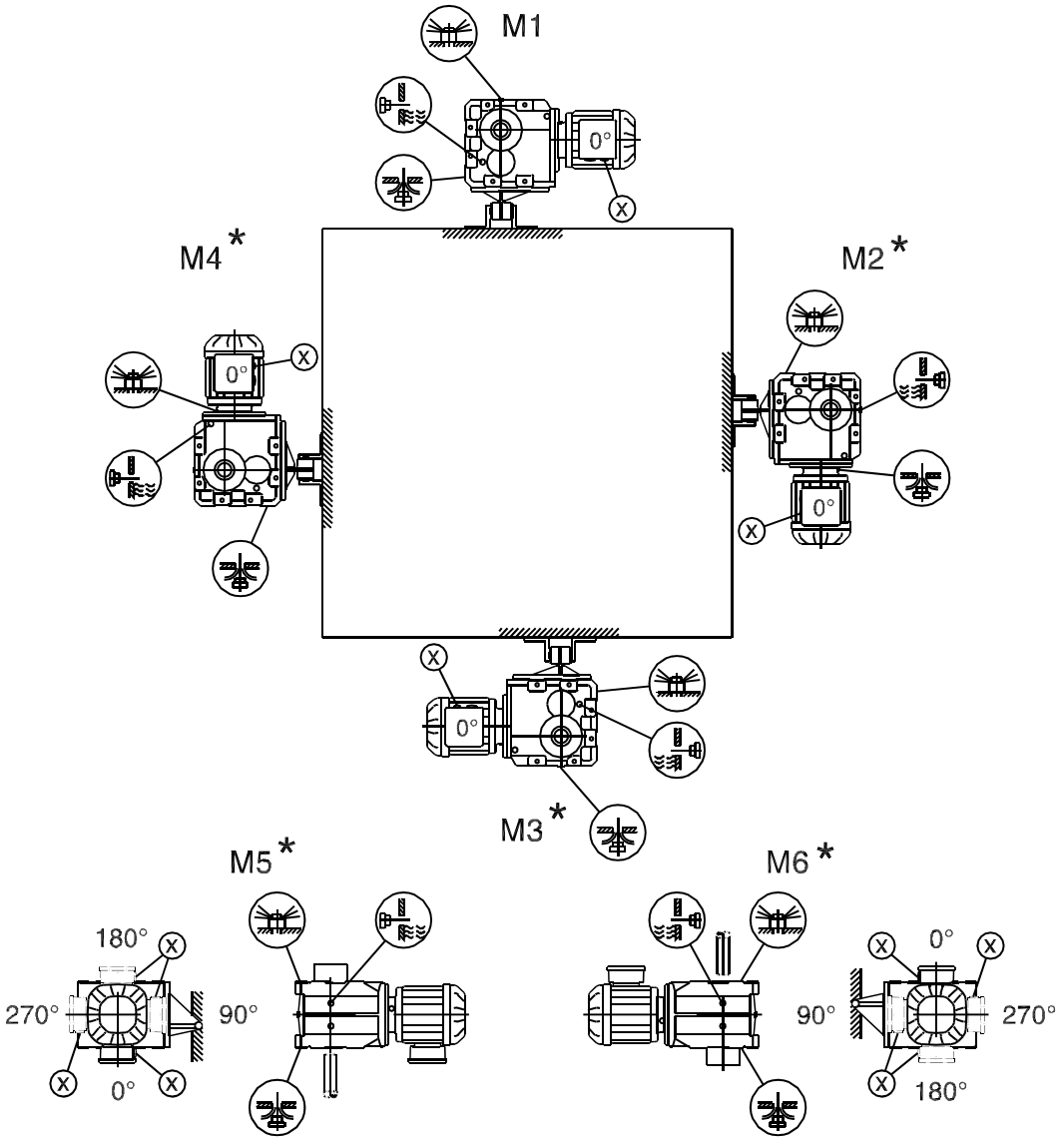
* (→ 🗎 49)

24832936/EN – 09/2018

KH167-187

39 026 05 00



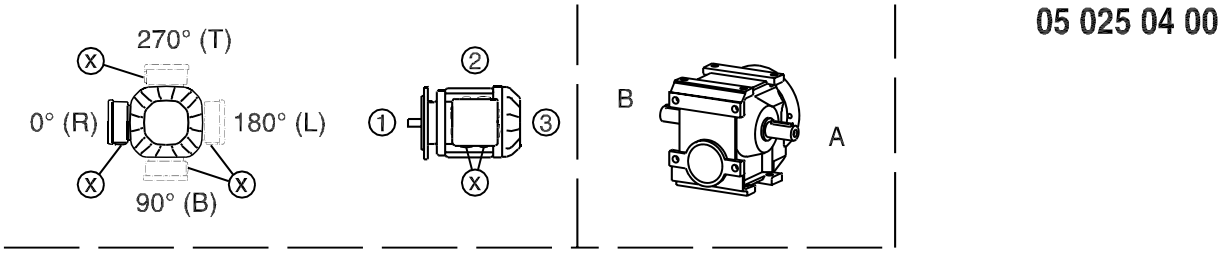


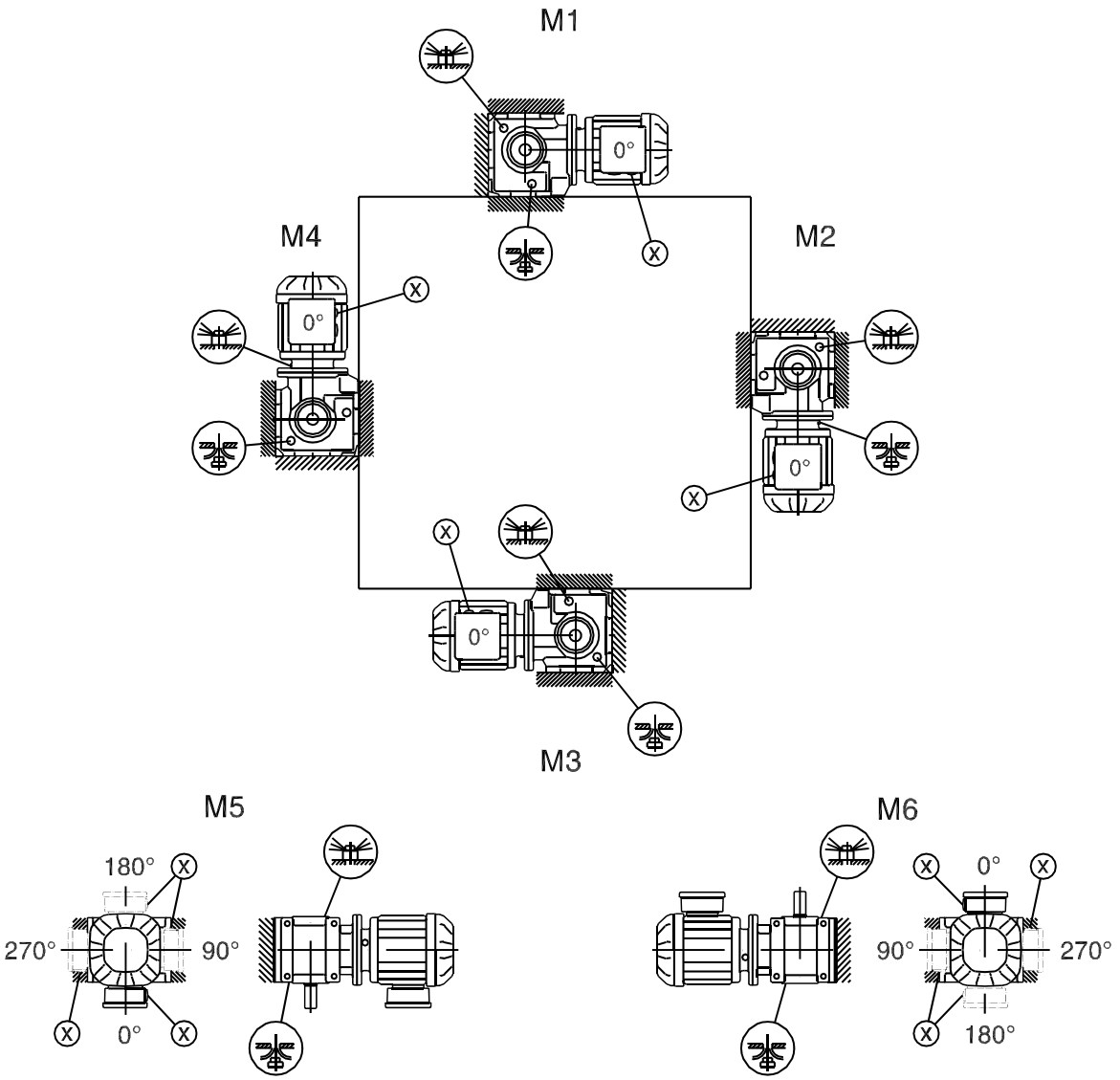
* (→ 49)

24832936/EN – 09/2018

5.4.4 Mounting positions of helical-worm gearmotors

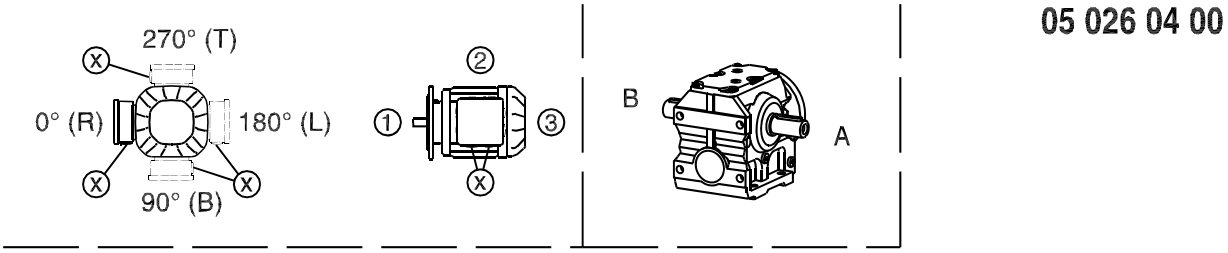
S37



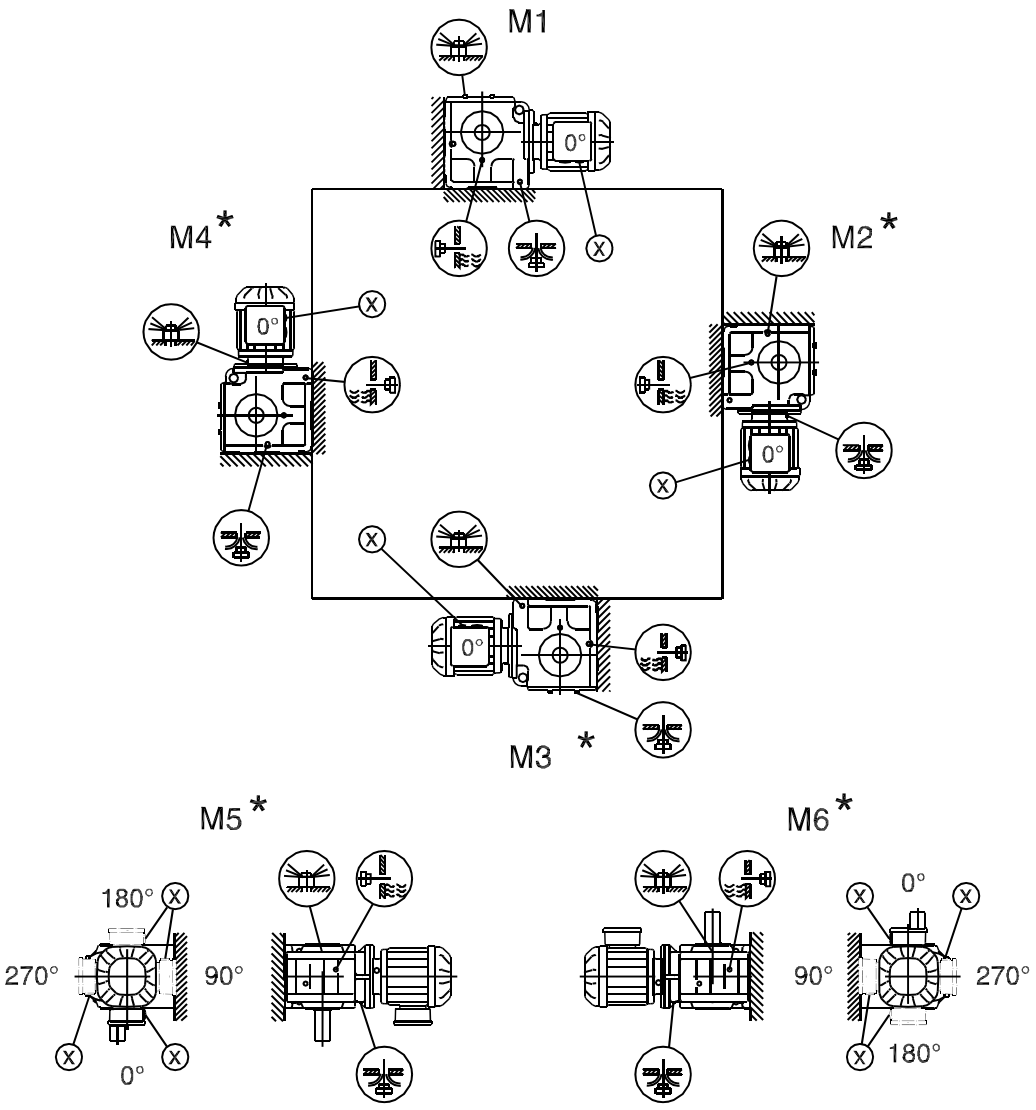


Observe the notes in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

S47-S97



05 026 04 00

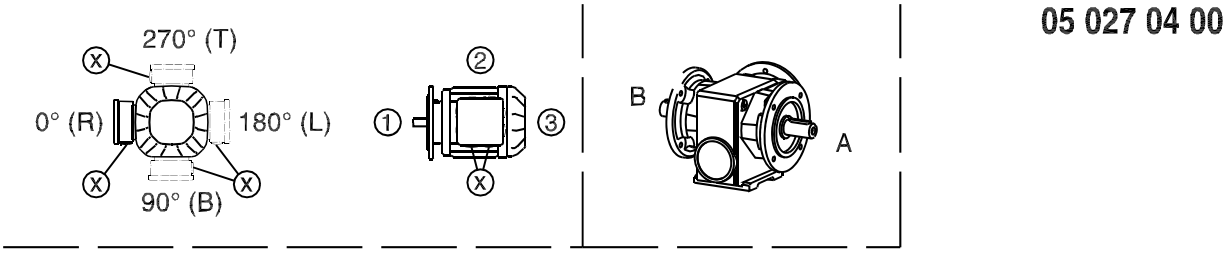


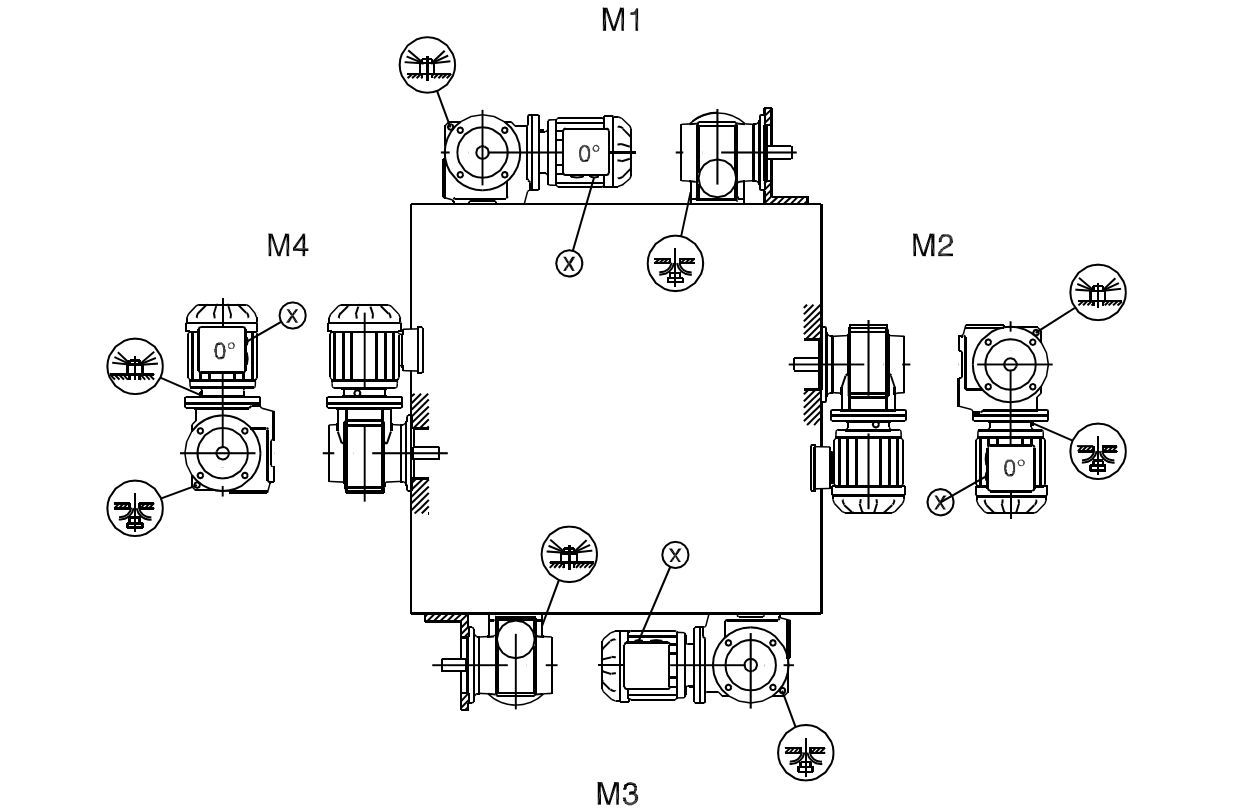
* (→ 🗎 49)

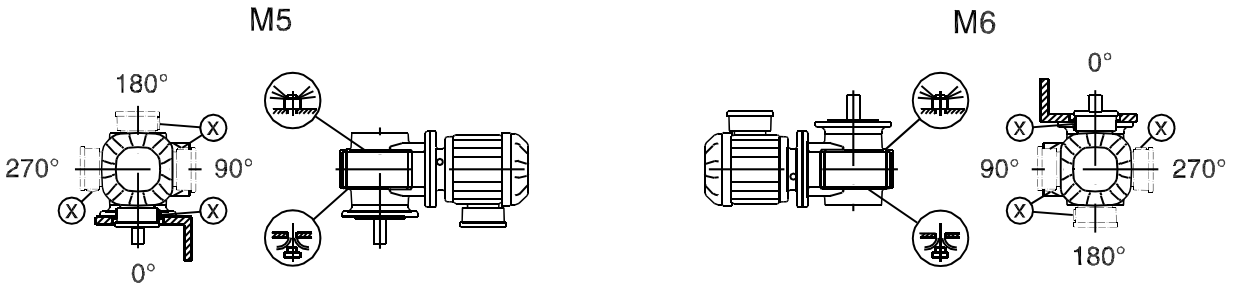
Observe the notes in chapter "Overhand and axial loads of R, F, K, S, and W gear units" (→ 🗎 55).

24832936/EN – 09/2018

SF/SAF/SHF37

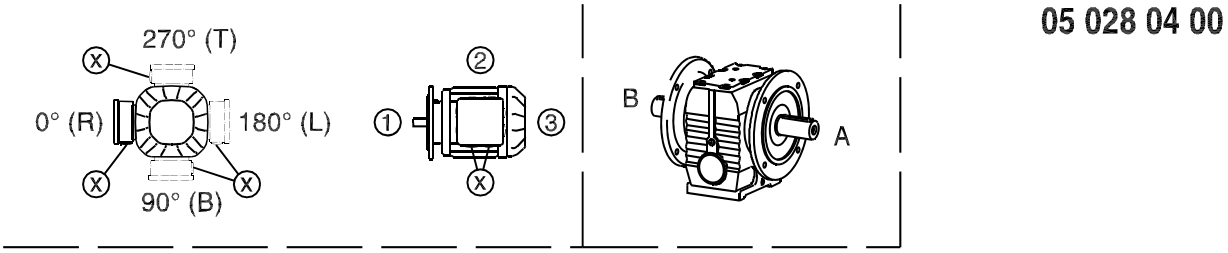


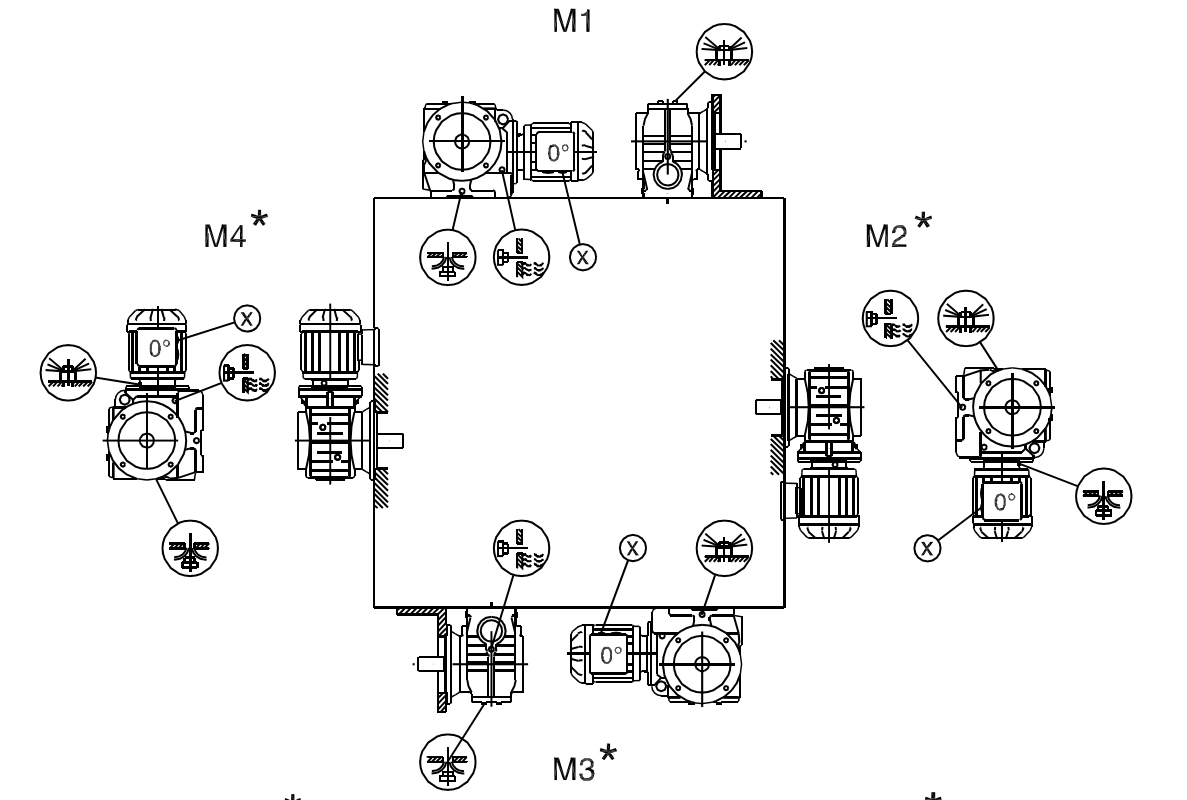


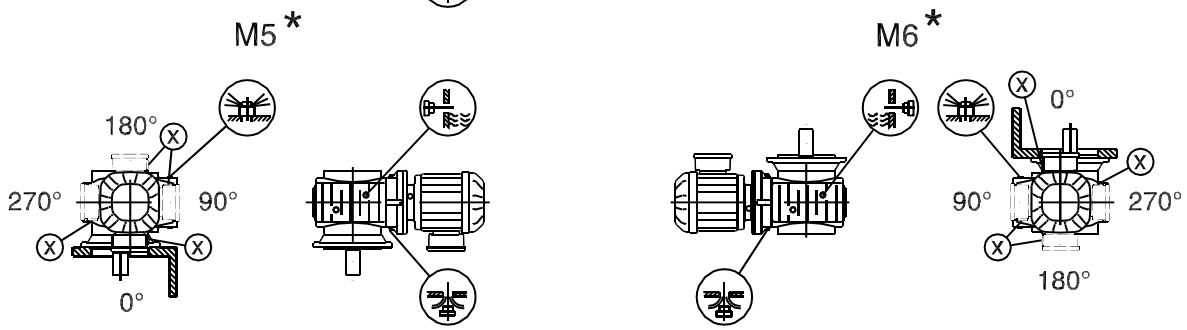


24832936/EN – 09/2018

SF/SAF/SHF/SAZ/SHZ47-97





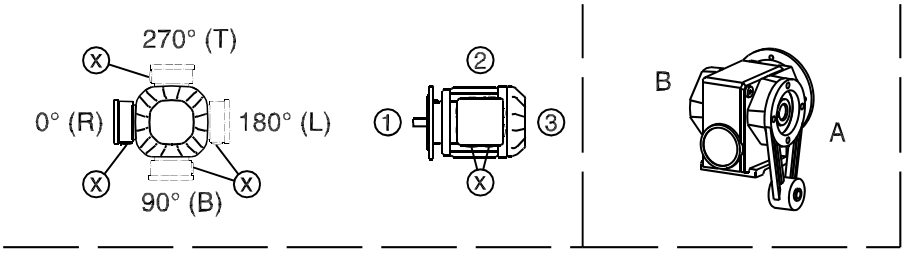


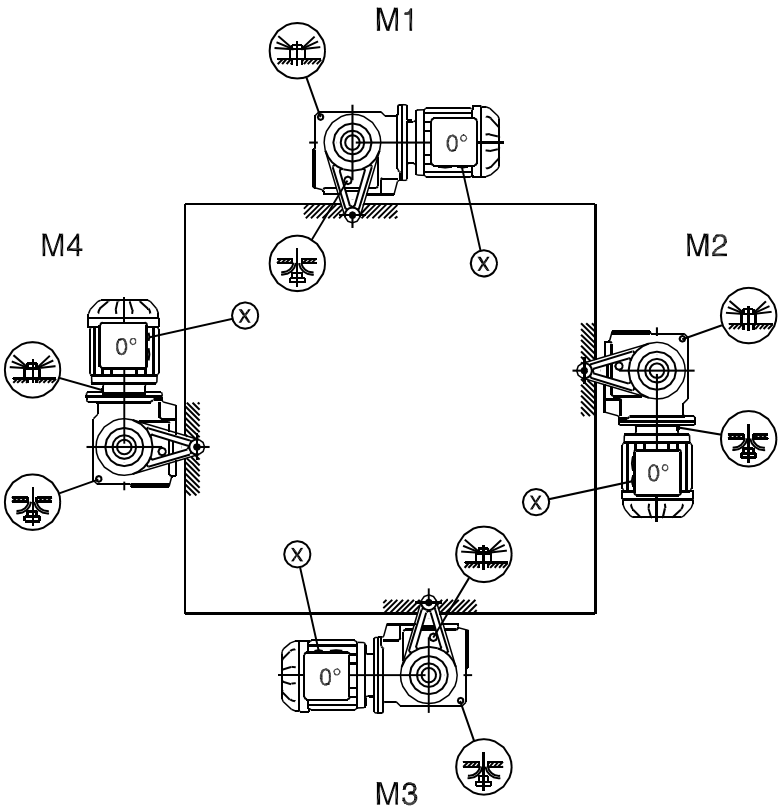
* (→ 🗎 49)

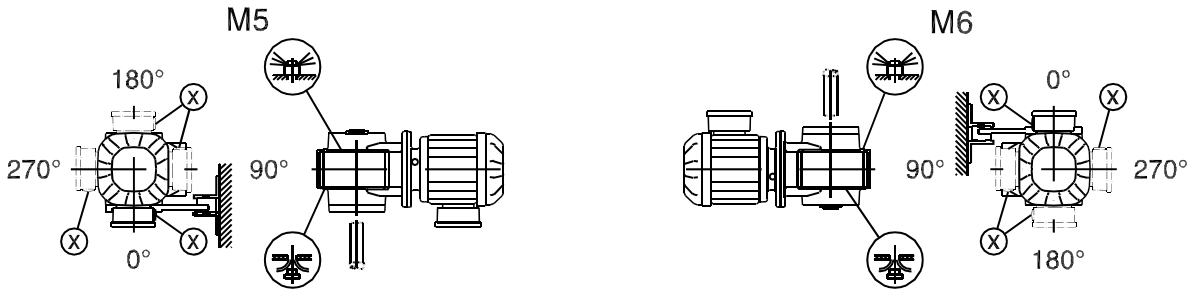
24832936/EN – 09/2018

SA/SH/ST37

28 020 05 00



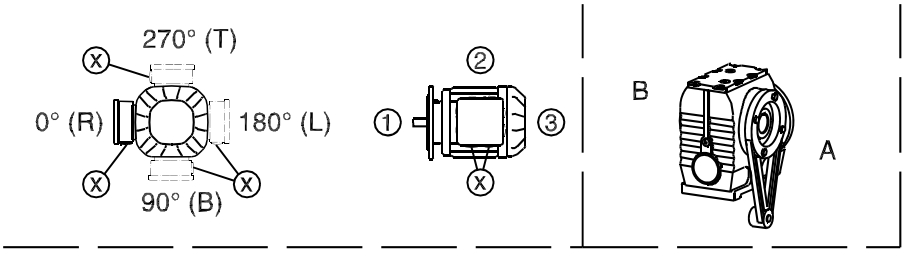


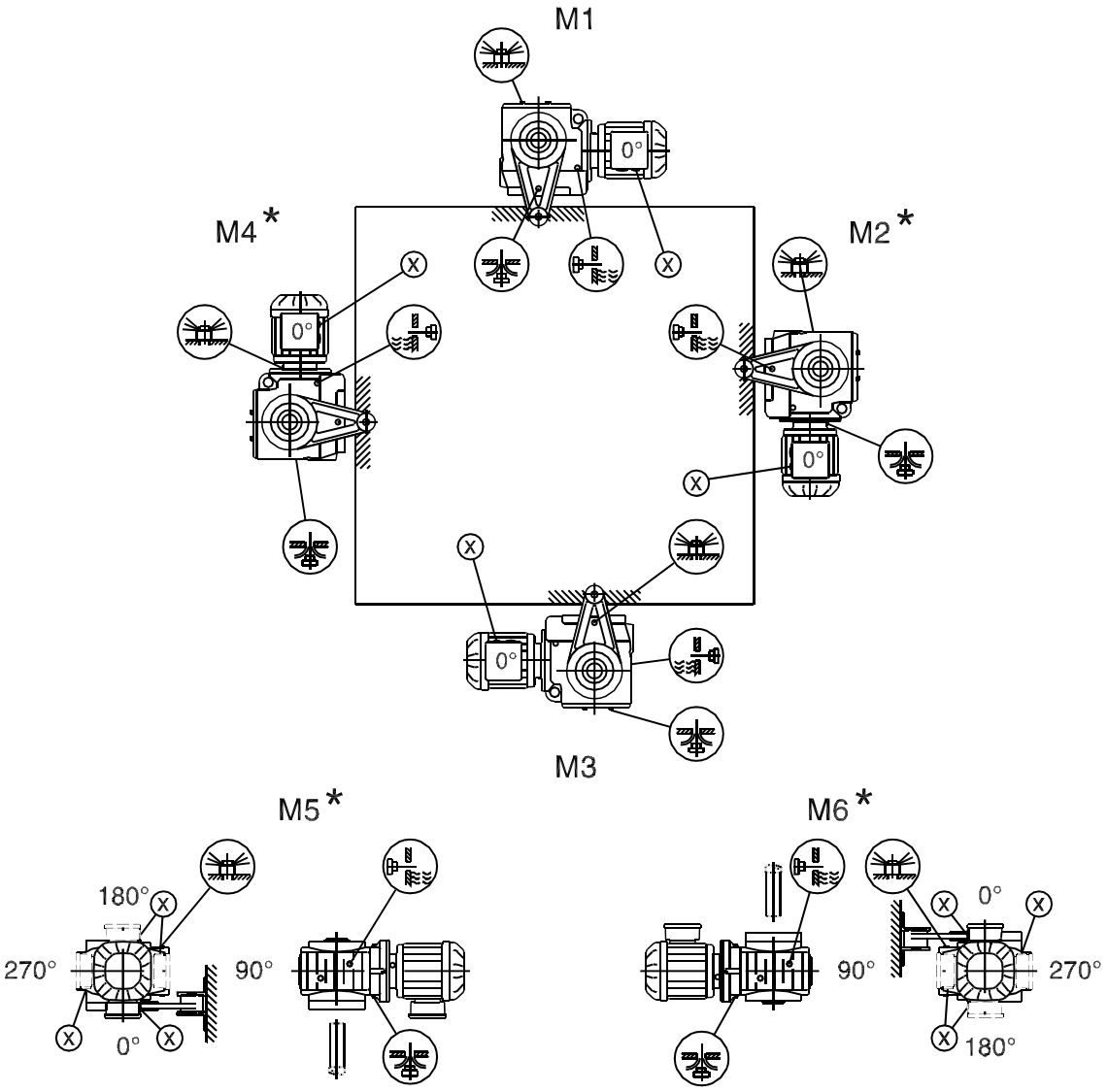


24832936/EN – 09/2018

SA/SH/ST47-97

28 021 04 00



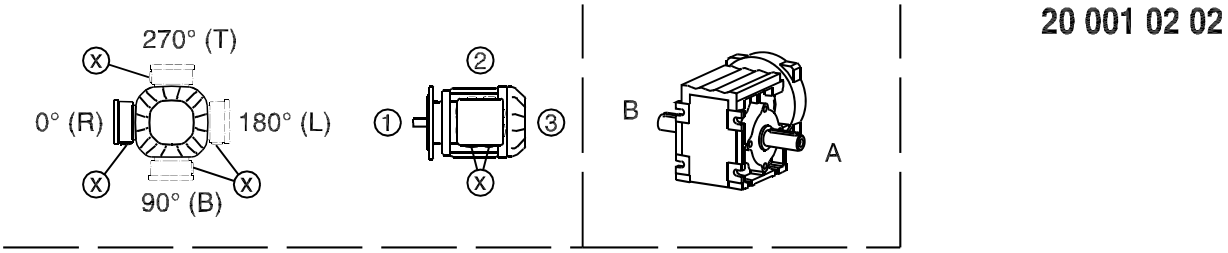


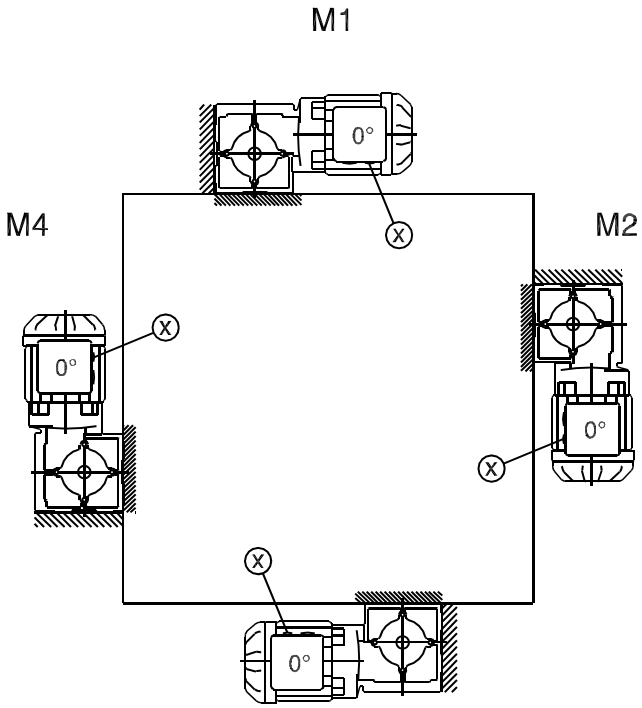
* (→ 49)

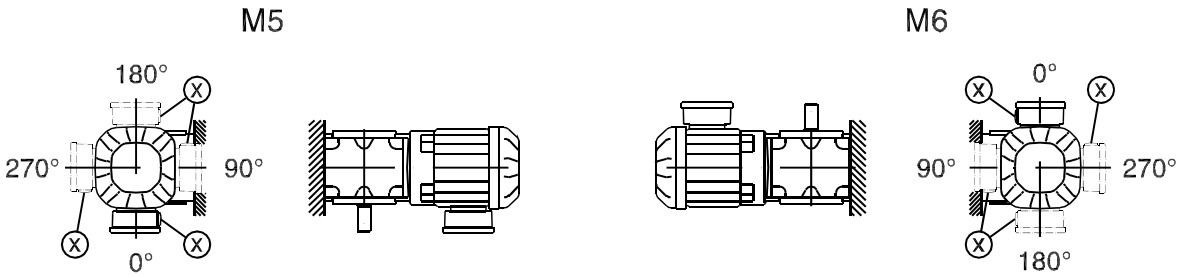
24832936/EN – 09/2018

5.4.5 Mounting positions of SPIROPLAN® gearmotors

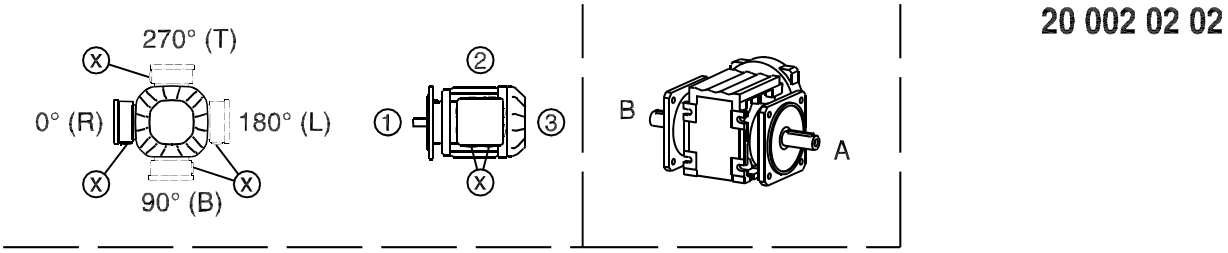
W10-30



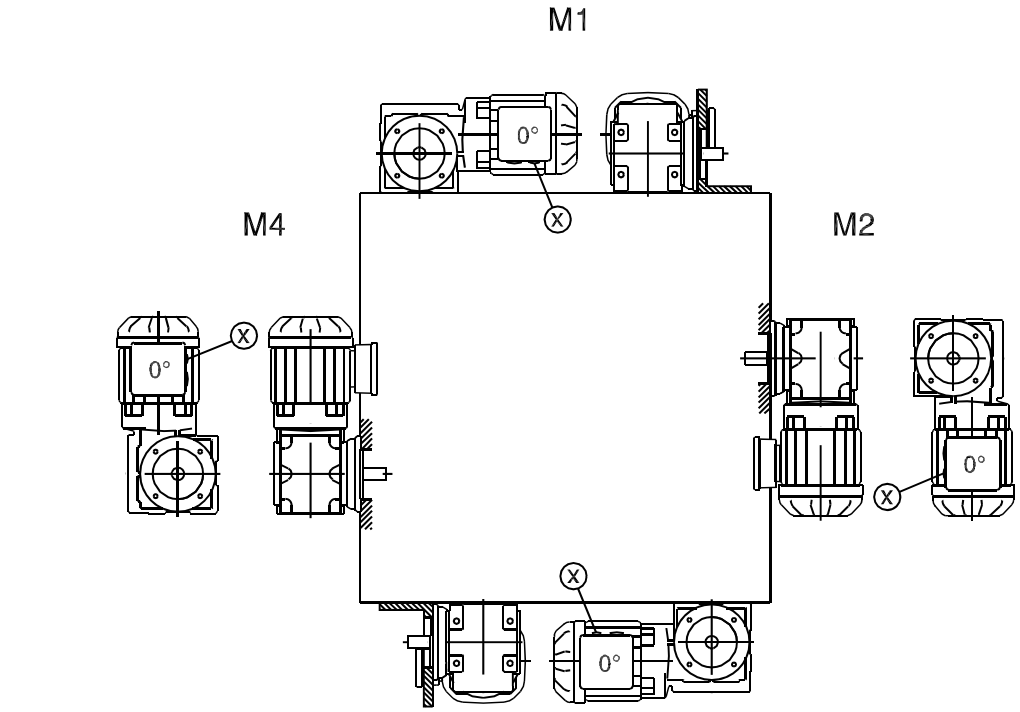


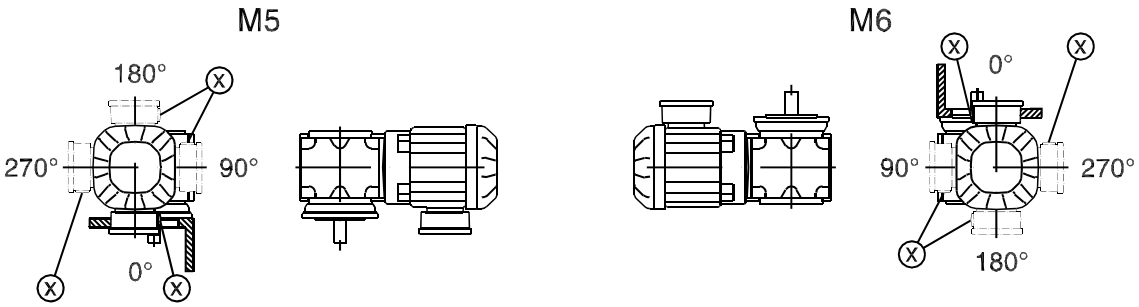


WF10-30



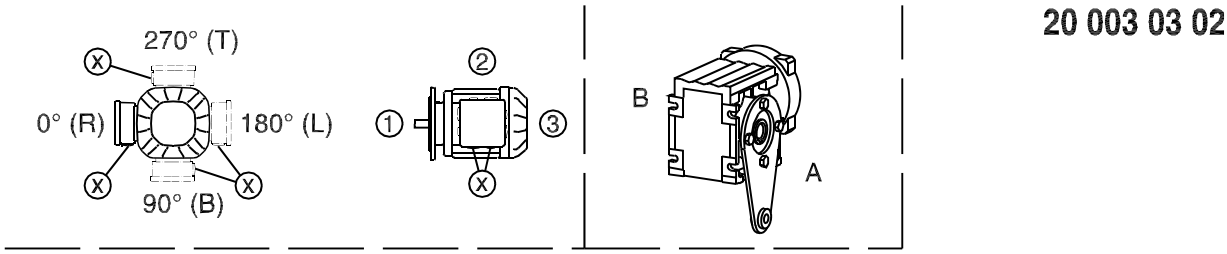
20 002 02 02



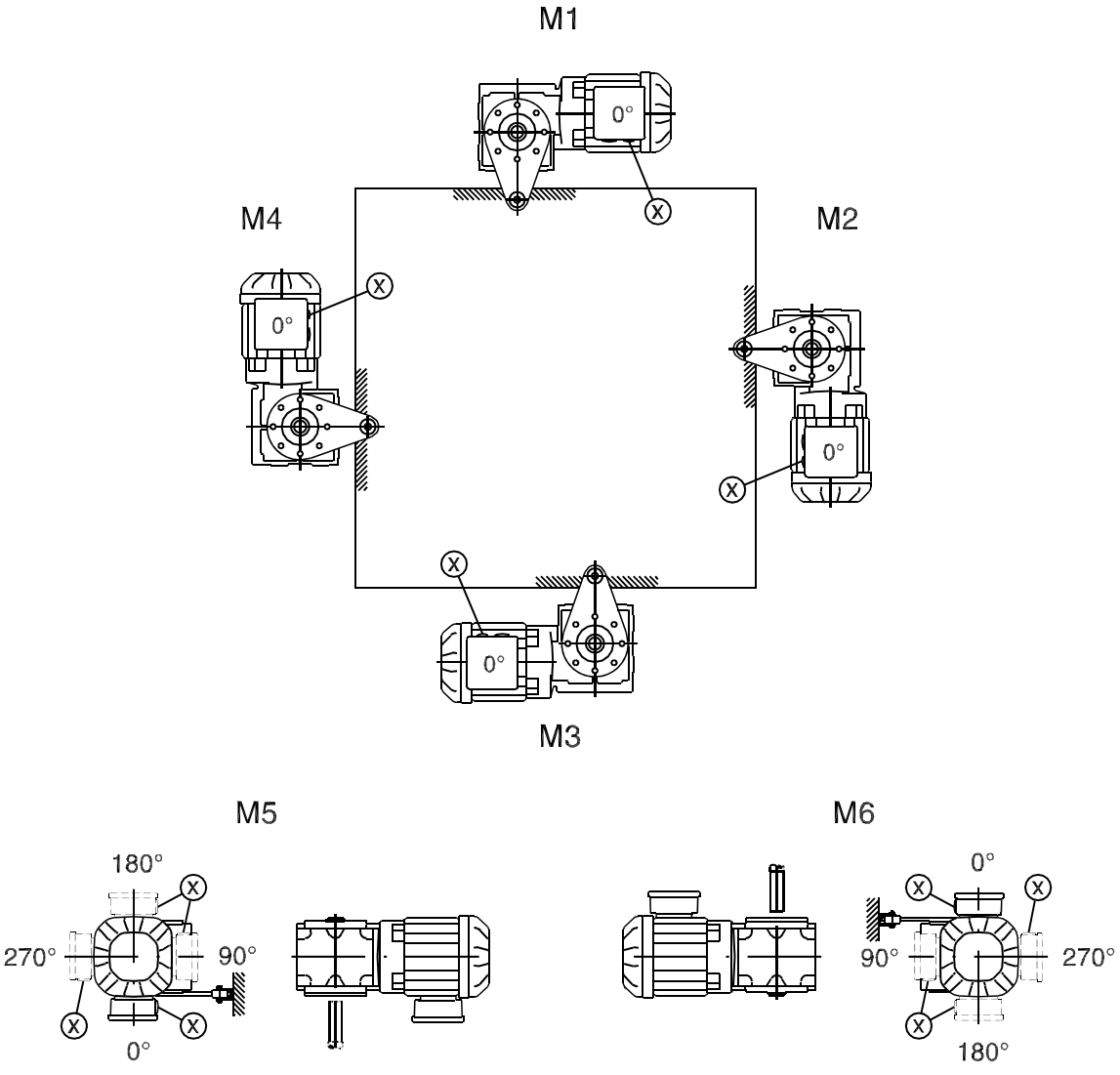


24832936/EN – 09/2018

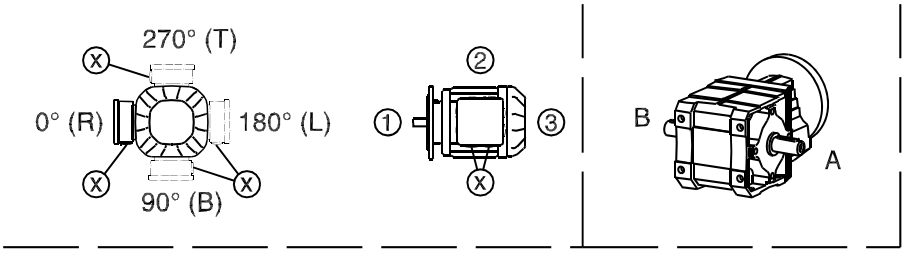
WA10-30



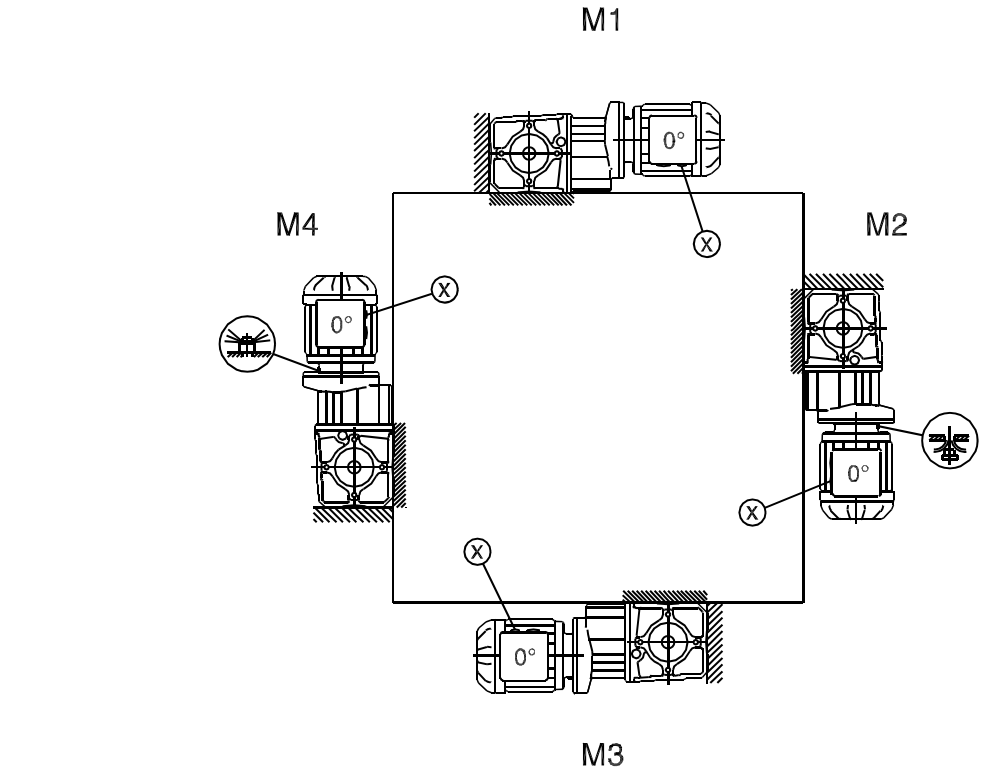
20 003 03 02

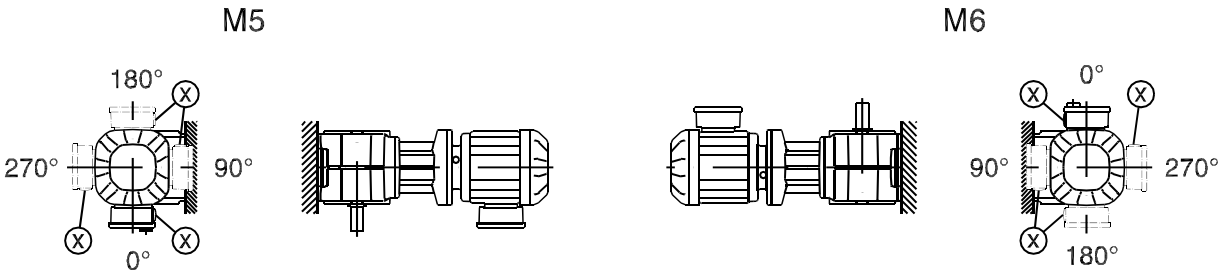


W/WA..B/WH37B-47B



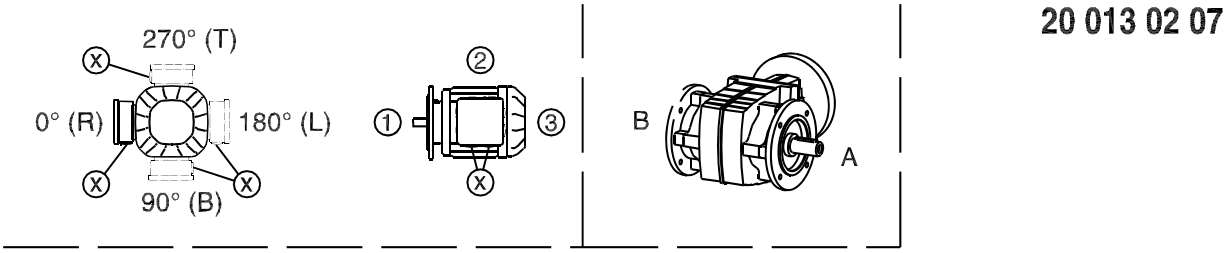
20 012 02 07



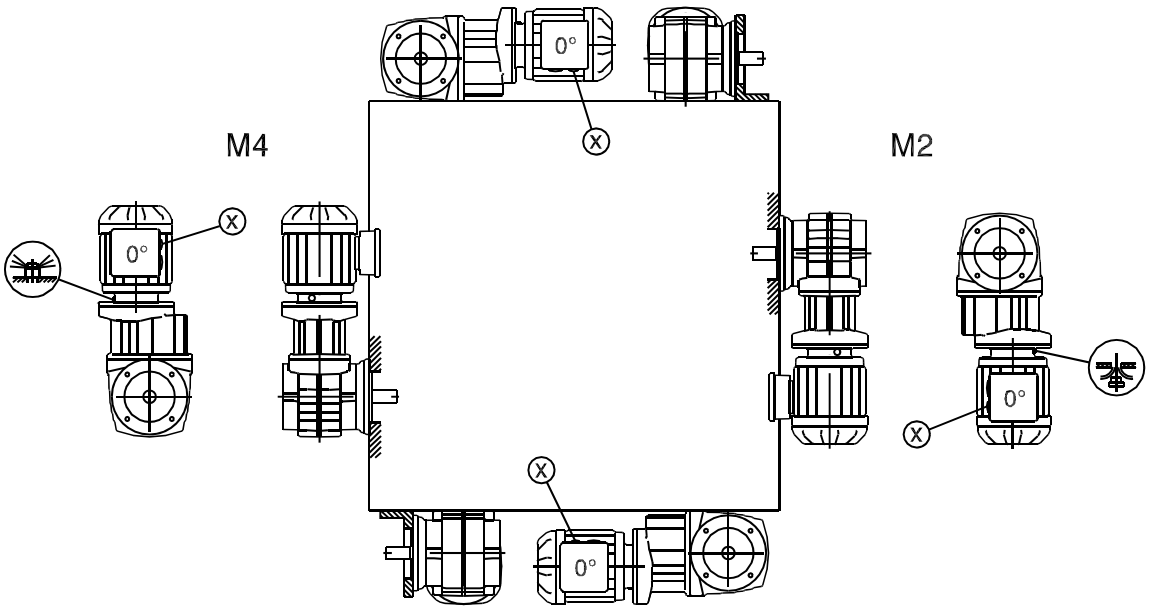


24832936/EN – 09/2018

WF/WAF/WHF37-47



M1

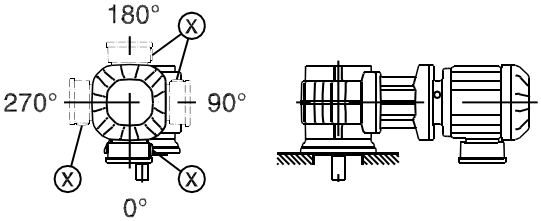


M4

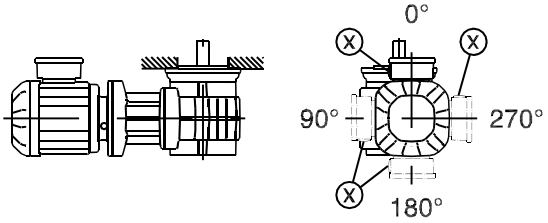
M2

M3

M5

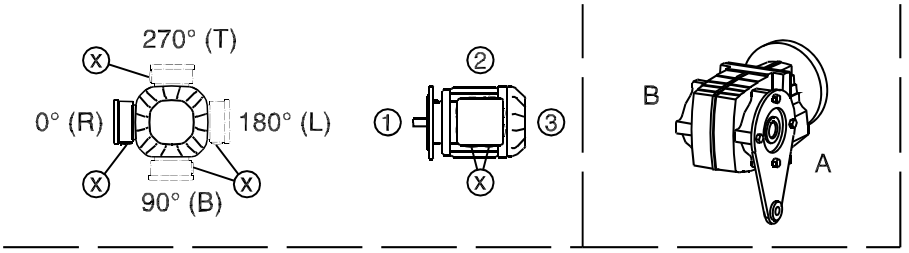


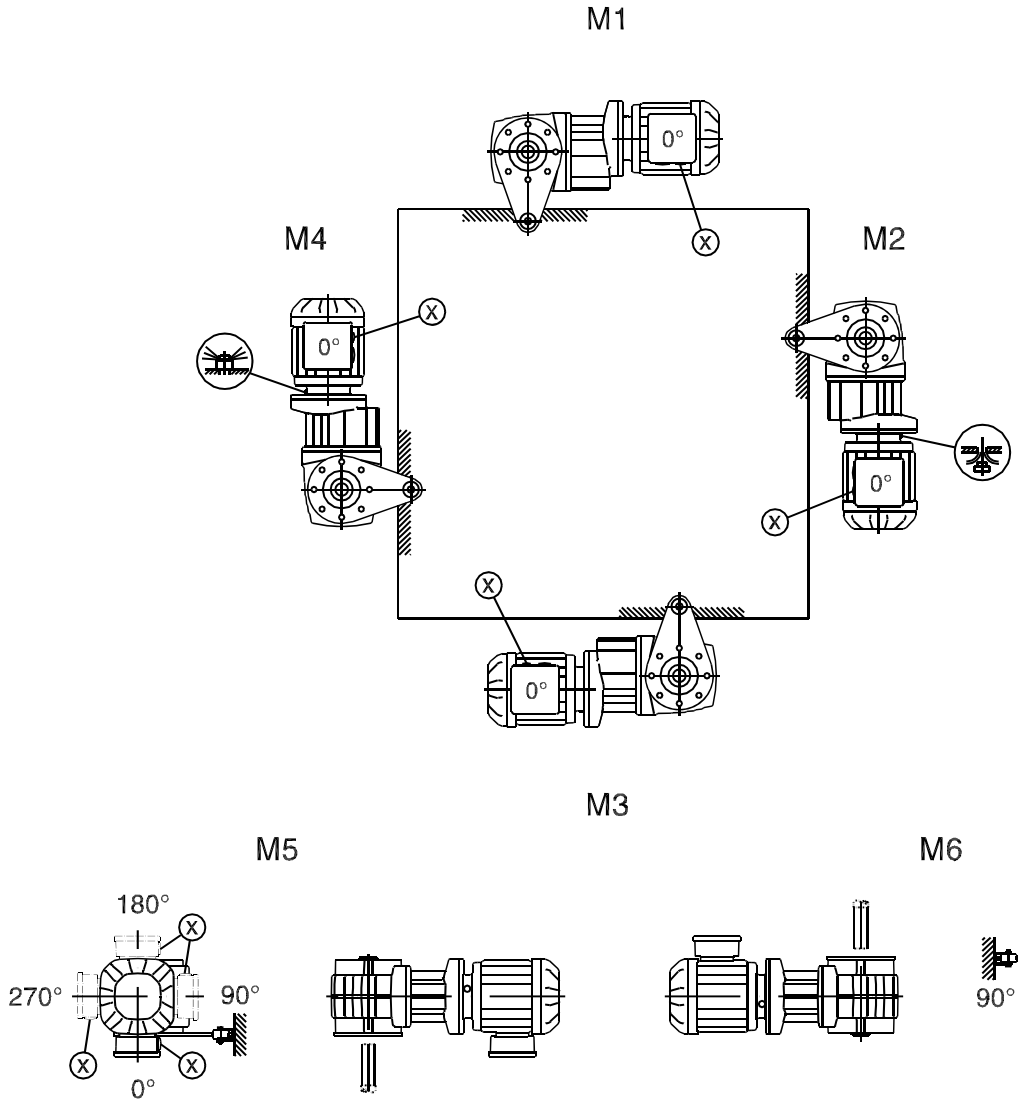
M6



24832936/EN – 09/2018

WA/WH/WT37-47

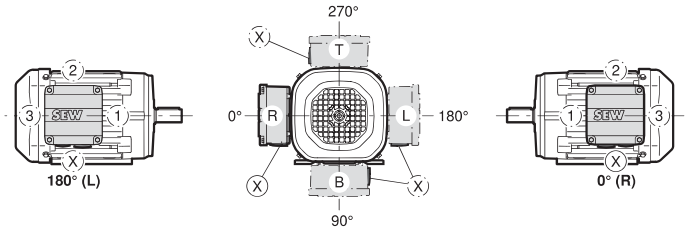




24832936/EN – 09/2018

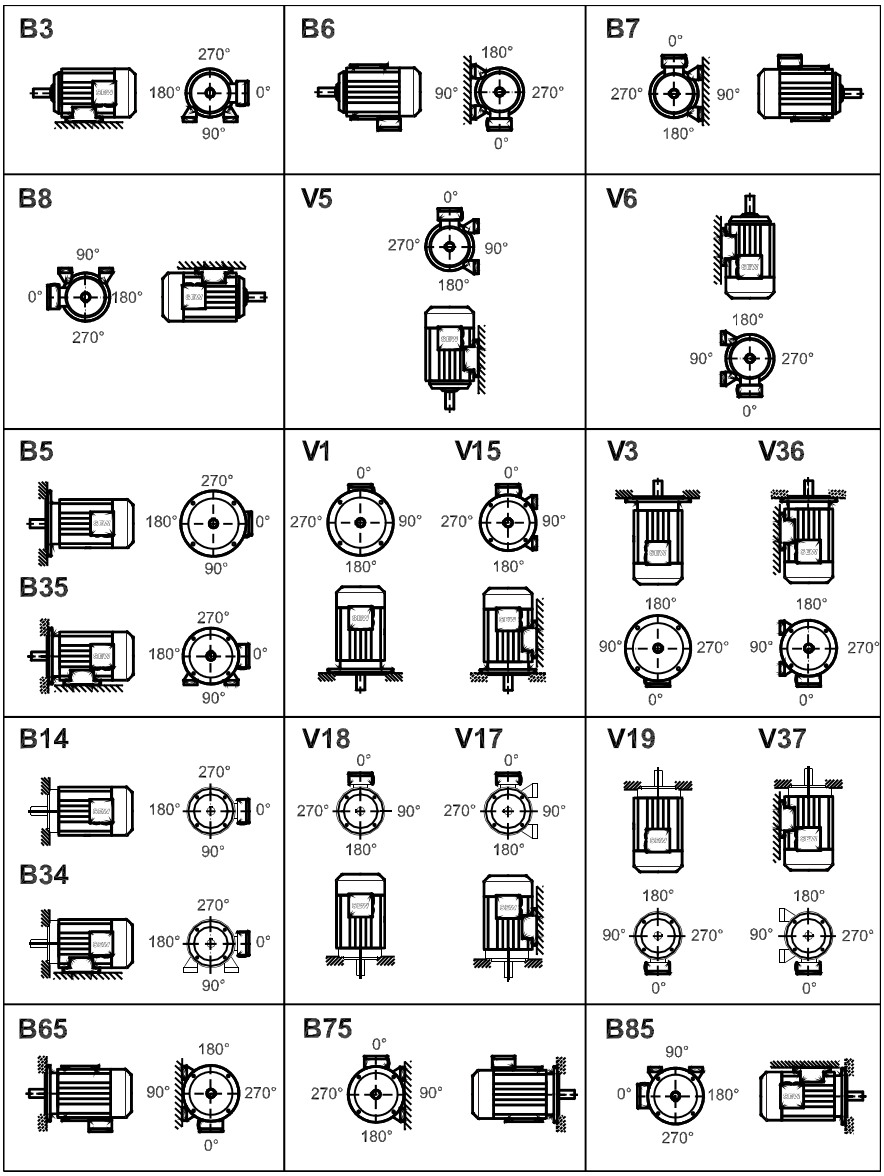
5.5 Mounting positions of AC motors

5.5.1 Motor terminal box position and cable entry



8670476811

5.5.2 Mounting positions



18014402484795531