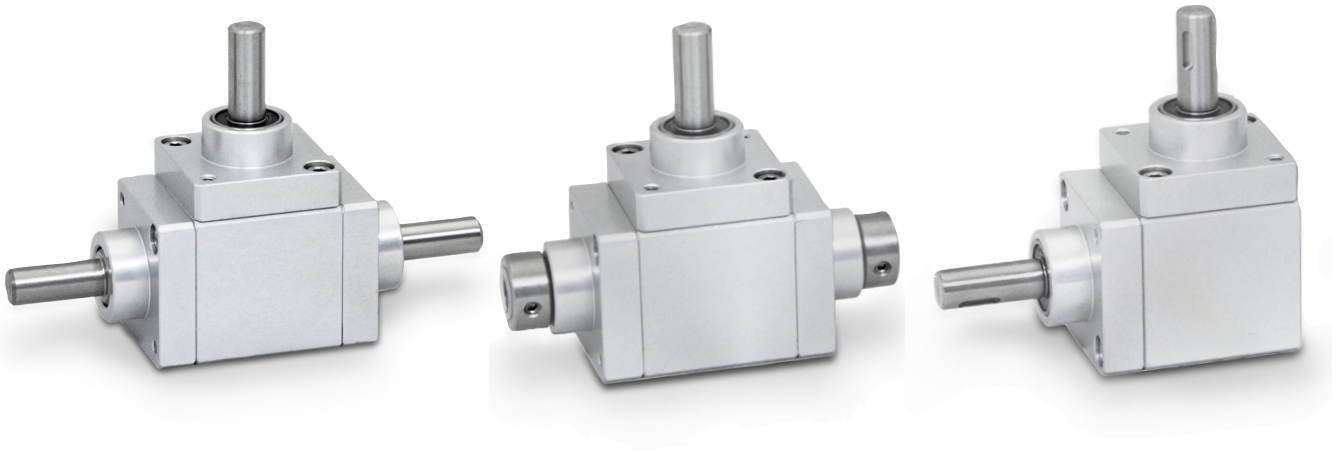




- Available transmission ratios: **1:1 - 1:2** (standard) - **2:1** (available in versions «A» - «B» - «C»); (Tab. 3).
- Ratios **1/2** and **2/1** are only available with spiral gears.
- Aluminium case, anodised; stainless steel shafts (standard).
- Torque **12 Nm**. Radial load **25 kg** - axial load **2,5 kg** (Tab. 4).
- Models (Tab. 1):
 - Version «A» with 2 outputs; weight 330 g.
 - Version «B» with 3 outputs; weight 520 g.
 - Version «C» (opposite rotation) with 3 outputs; weight 535 g.
 - Version «D» with 3 outputs, 2 through hollow shafts; weight 520 g.
 - Version «E» with 4 outputs; weight 600 g.
- Standard output shafts: **M** = male **Ø10** / **F** = female **Ø10** (Tab. 9).

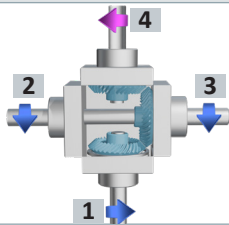
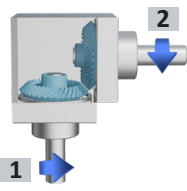
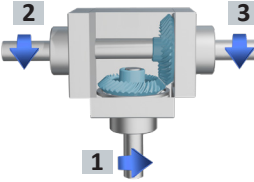
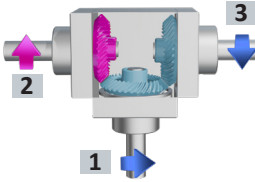
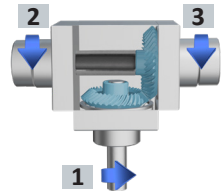
Available on request:

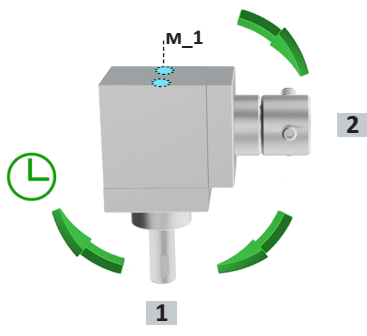
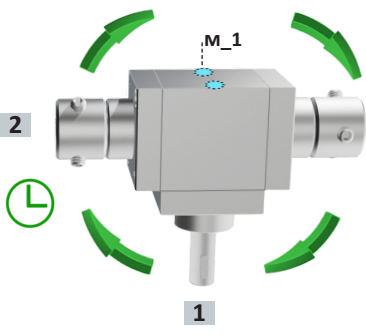
- Output shafts: male **Ø14** / female **Ø12 - Ø14** in versions «A» - «B» - «C».
- Case in **stainless steel AISI 303**.
- Models with spiral bevel gears are available in all versions with transmission ratio **1/1** (Tab. 2).
- Machine-side coupling flange **FL-M** (Tab. 7).
- Male shaft flange for position indicators **FL-OP/EP** (Tab. 8).

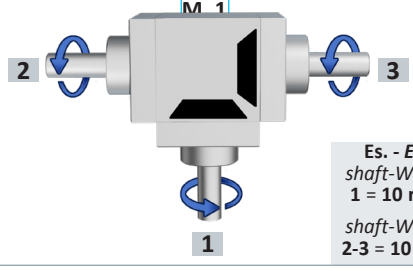
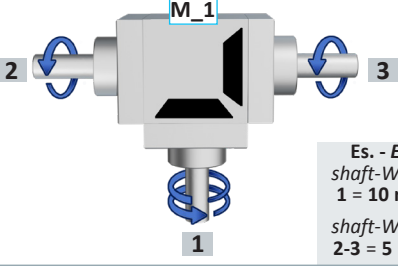
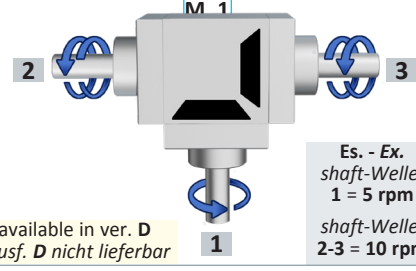
- *Lieferbare Übersetzungen: 1:1 - 1:2 (standard) - 2:1 (Lieferbar in Ausführungen «A» - «B» - «C»); (Tab. 3).*
- *Übersetzungen 1/2 und 2/1 nur mit Spiralkegelräder lieferbar.*
- *Druckgussgehäuse, schwarz eloxiert; Wellen aus Edelstahl AISI 303.*
- *Drehmoment 12 NM. Radiallast 25 kg - Axiallast 2,5 kg (Tab. 4).*
- *Ausführungen (Tab. 1):*
 - *Version «A» mit 2 Ausgangswellen, Gewicht 330 g.*
 - *Version «B» mit 3 Ausgangswellen, Gewicht 520 g.*
 - *Version «C» mit 3 Ausgangswellen mit Rückwärtsdrehung, Gewicht 535 g.*
 - *Version «D» mit 3 Ausgangswellen, 2 durchgehende Hohlwellen, Gewicht 520 g.*
 - *Version «E» mit 4 Ausgangswellen, Gewicht 600 g.*
- *Standard output shafts: M = male Ø10 / F = female Ø10 (Tab. 9).*

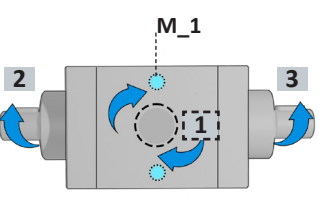
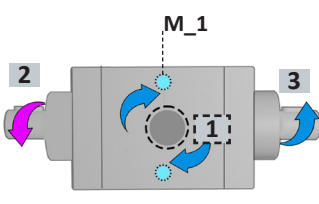
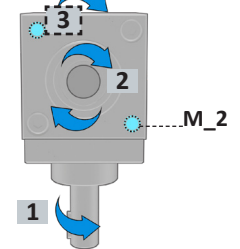
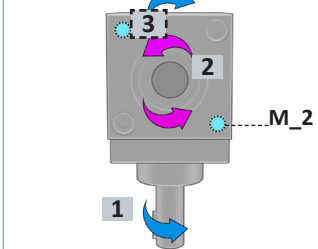
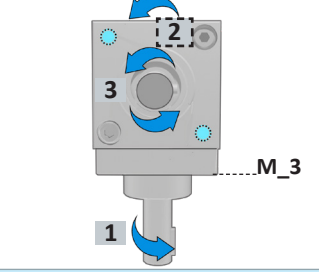
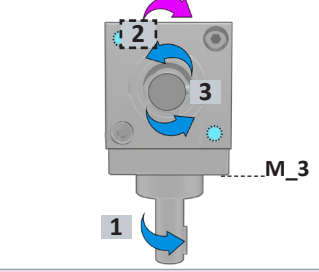
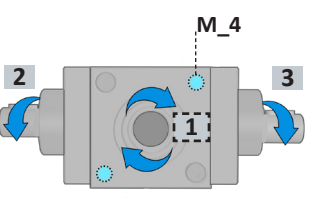
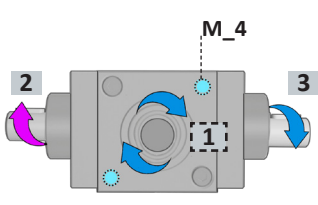
Lieferbar auf Anfrage:

- *Ausgangswellen: Vollwelle Ø14 und Hohlwellen Ø12 - Ø14 in Ausführungen «A» - «B» - «C».*
- *Gehäuse in Edelstahl AISI 303.*
- *Ausführungen mit Spiralkegelräder für Übersetzung 1/1 (Tab. 2).*
- *Kupplungsflansch für Maschinenseite FL-M (Tab. 7).*
- *Vollwellenflansch für Positionsanzeigen FL-OP/EP (Tab. 8).*

CONFIGURATION AND DIRECTION OF ROTATION - KONFIGURATION UND UMDREHUNGSSINN					Tab. 1
«A»	«B»	«C»	«D»		
					
2 outputs, same rotation 2 Abtriebe, gleichsinnig	3 outputs, same rotation 2 3 Abtriebe, gleichsinnig	3 outputs, 1 opposite rot. 3 Abtriebe, 1 gegensinnig	3 outputs, 2 hollow, same rot. 3 Abtriebe, 2 durchgehend	4 outputs, same rot. & opp. 4 Abtriebe, gleich/gegens.	

OUTPUT SHAFT IDENTIFICATION - WELLENKENNZEICHNUNG			Tab. 2
Example - Beispiel	Example - Beispiel	 Shaft 1 is always shown on the side opposite the M₁ fixing bores and is the reference for: configuration, direction of rotation, gear ratio. By convention, Shaft 1 is shown rotating clockwise, the others follow the clockwise direction. Welle 1 ist stets gegenüber den Bohrungen M₁ dargestellt und dient als Bezug für Bauform, Drehrichtung und Übersetzung. Sie wird konventionsgemäß im Uhrzeigersinn dargestellt; die übrigen Wellen werden im Uhrzeigersinn nummeriert.	
			

AVAILABLE TRANSMISSION RATIOS - LIEFERBARE ÜBERSETZUNGEN		
The ratio refers to shaft 1, opposite the M ₁ fixing bores - Die Übersetzung bezieht sich auf Welle 1, gegenüber den Bohrungen M ₁		
Ratio - Übersetzung 1/1	Ratio - Übersetzung 1/2	Ratio - Übersetzung 2/1
		
Es. - Ex. shaft-Welle: 1 = 10 rpm shaft-Welle: 2-3 = 10 rpm	Es. - Ex. shaft-Welle: 1 = 10 rpm shaft-Welle: 2-3 = 5 rpm	Es. - Ex. shaft-Welle: 1 = 5 rpm shaft-Welle: 2-3 = 10 rpm
	not available in ver. D in Ausf. D nicht lieferbar	

M ₁ FIXING POSITIONS - M ₁ BEFESTIGUNGSPOSITIONEN				Tab. 4
Shaft 1 shaft 1 remains the reference and is conventionally shown rotating clockwise; the housing is rotated by 90° from the previous position Welle 1 bleibt die Referenz und wird konventionsgemäß im Uhrzeigersinn dargestellt; das Gehäuse wird jeweils um 90° gedreht				
M ₁ = top view - Ansicht von oben	0°	M ₂ = right side view - rechte Seitenansicht	90°	
				
same rotation - gleichsinnig	opposite rotation - gegensinnig	same rotation - gleichsinnig	opposite rotation - gegensinnig	
+ 90° ↑		+ 90° ↓		
M ₃ = left side view - linke Seitenansicht	270°	M ₄ = bottom view - Ansicht von unten	180°	
				
same rotation - gleichsinnig	rotazione discorde - opposite rotation	same rotation - gleichsinnig	opposite rotation - gegensinnig	

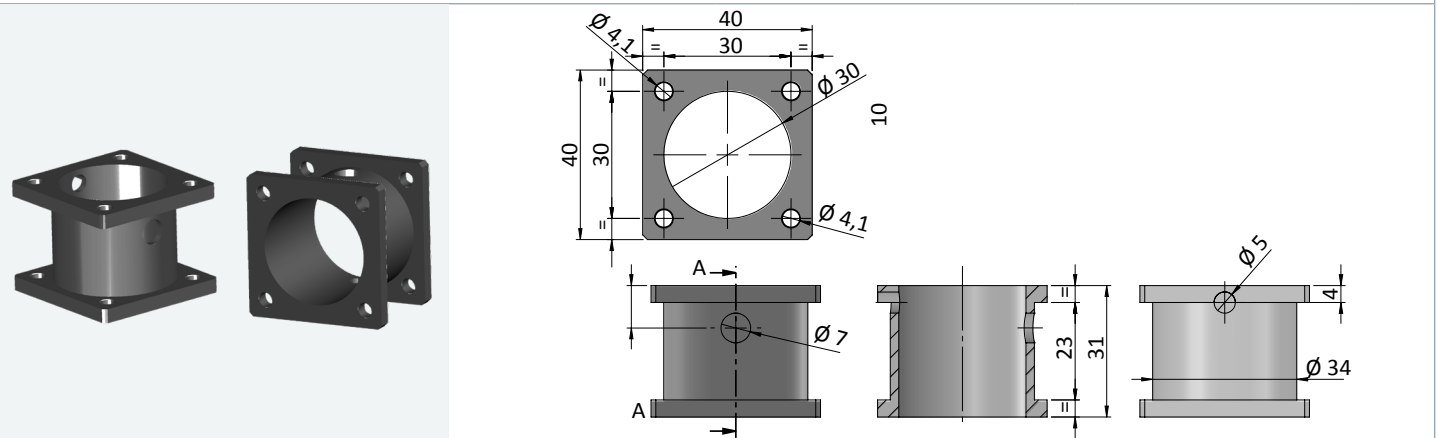
The flange **FL-M**, compatible with any configuration and output shaft (male or female) of the gearbox, ensures a stable and precise coupling, minimizing vibrations and ensuring correct alignment between the connected components.

Made of black anodized aluminum, it is coordinated with the gearbox case, also in black.

Die Kupplungsflansche **FL-M**, ist mit jeder Konfiguration und Ausgangswelle (Hohl- und Vollwelle) des Getriebes kompatibel.

Sorgt für eine stabile und präzise Kupplung, minimiert Vibrationen und gewährleistet eine korrekte Ausrichtung der verbundenen Komponenten.

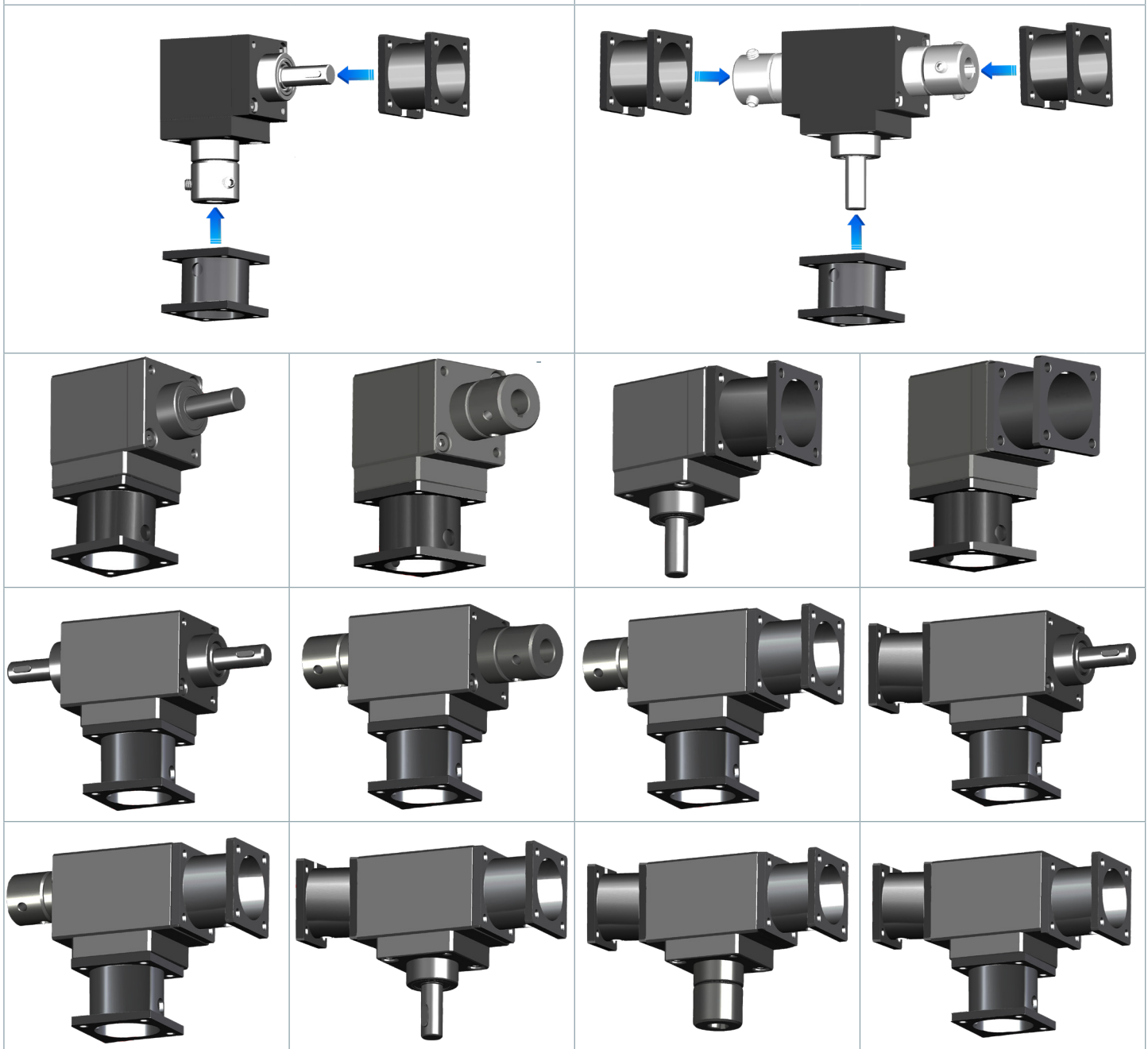
Aus schwarz eloxiertem Aluminium gefertigt, passt optisch perfekt zum ebenfalls schwarzen Getriebegehäuse.



Configuration examples - Konfigurationsbeispiele

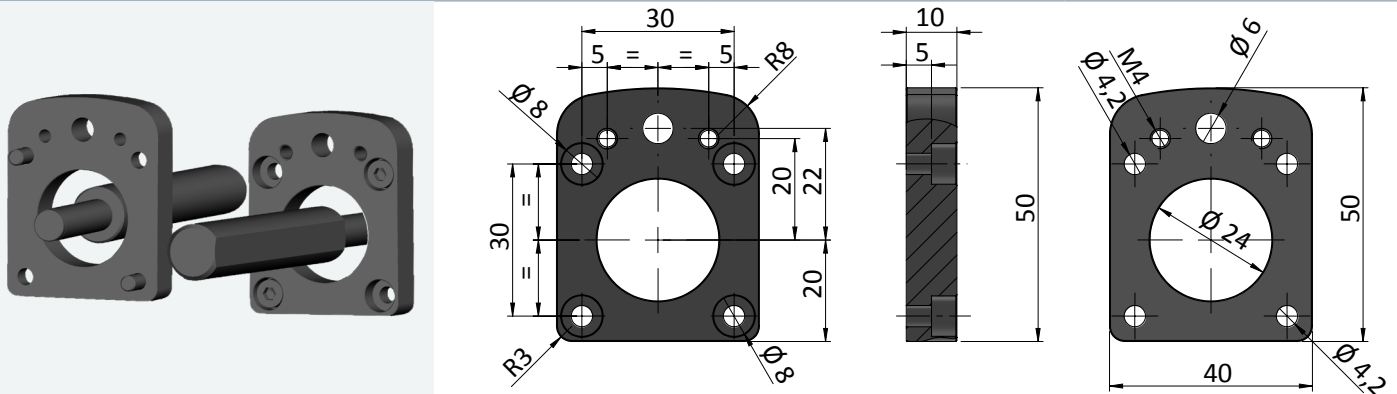
Gearbox with 2 outputs - Winkelgetrieb mit 2 Ausgänge

Gearbox with 3 outputs - Winkelgetrieb mit 3 Ausgänge



Male shaft with flange **MØ14x80 FL-OP3/EP3**, compatible with any configuration and output shaft of the gearbox, connects the position indicator, whether mechanical or electronic, to the gearbox. This combination enables precise and monitored position adjustment, increasing stability and accuracy of readings. Made of black anodized aluminum, it is coordinated with the gearbox case, also in black.

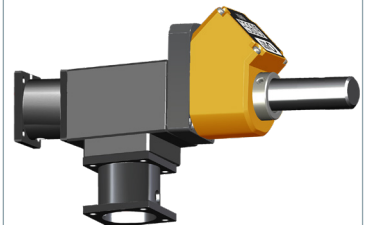
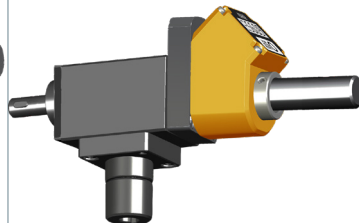
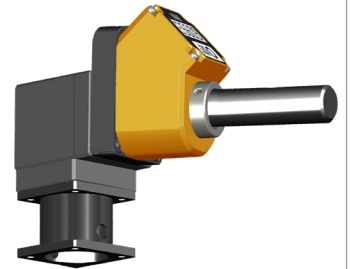
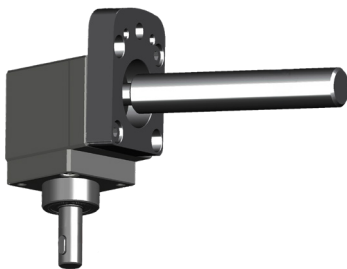
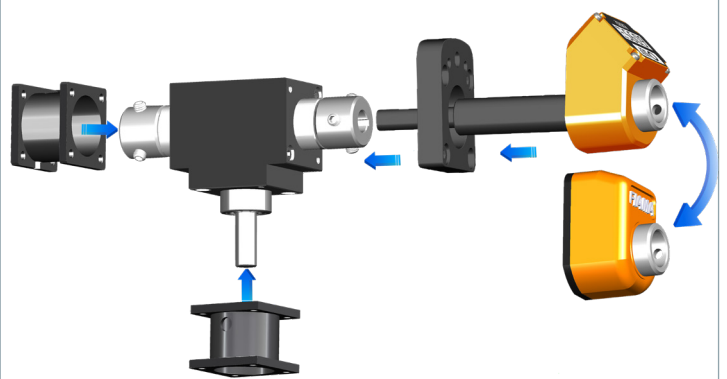
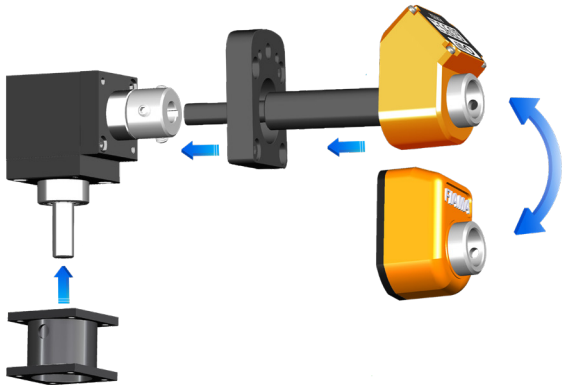
Vollwelle mit Flansch **MØ14x80 FL-OP3/EP3**, kompatibel mit jeder Konfiguration und Ausgangswelle des Getriebes, verbindet den Positionsanzeiger, mechanisch oder elektronisch, mit dem Getriebe. Diese Kombination ermöglicht eine präzise und überwachte Positionseinstellung, was die Stabilität und Genauigkeit der Messungen erhöht. Aus schwarz eloxiertem Aluminium gefertigt, passt optisch perfekt zum ebenfalls schwarzen Getriebegehäuse.



Configuration examples - Konfigurationsbeispiele

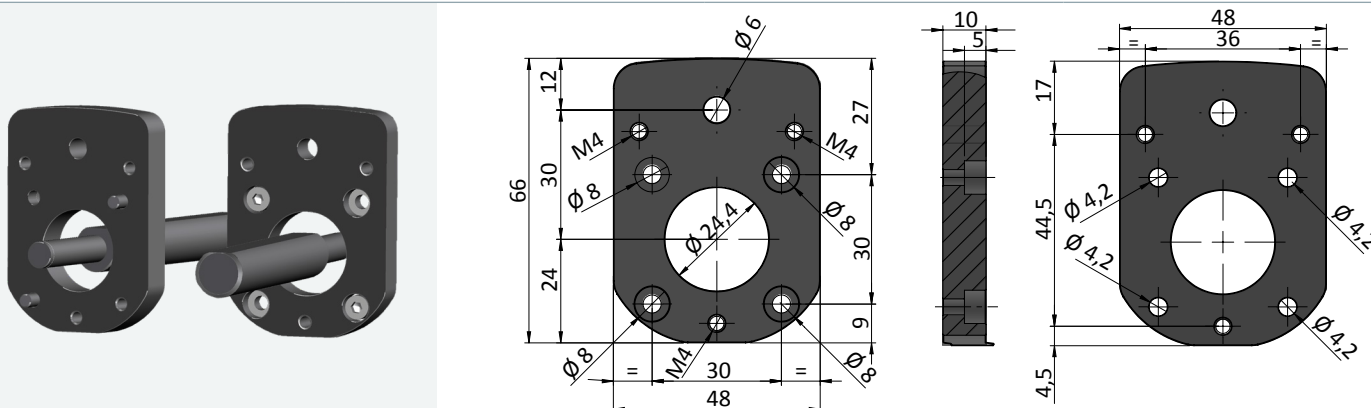
Gearbox with 2 outputs - Winkelgetrieb mit 2 Ausgänge

Gearbox with 3 outputs - Winkelgetrieb mit 3 Ausgänge



Male shaft with flange **MØ14x80 FL-OP7/EP7**, compatible with any configuration and output shaft of the gearbox, connects the position indicator, whether mechanical or electronic, to the gearbox. This combination enables precise and monitored position adjustment, increasing stability and accuracy of readings. Made of black anodized aluminum, it is coordinated with the gearbox case, also in black.

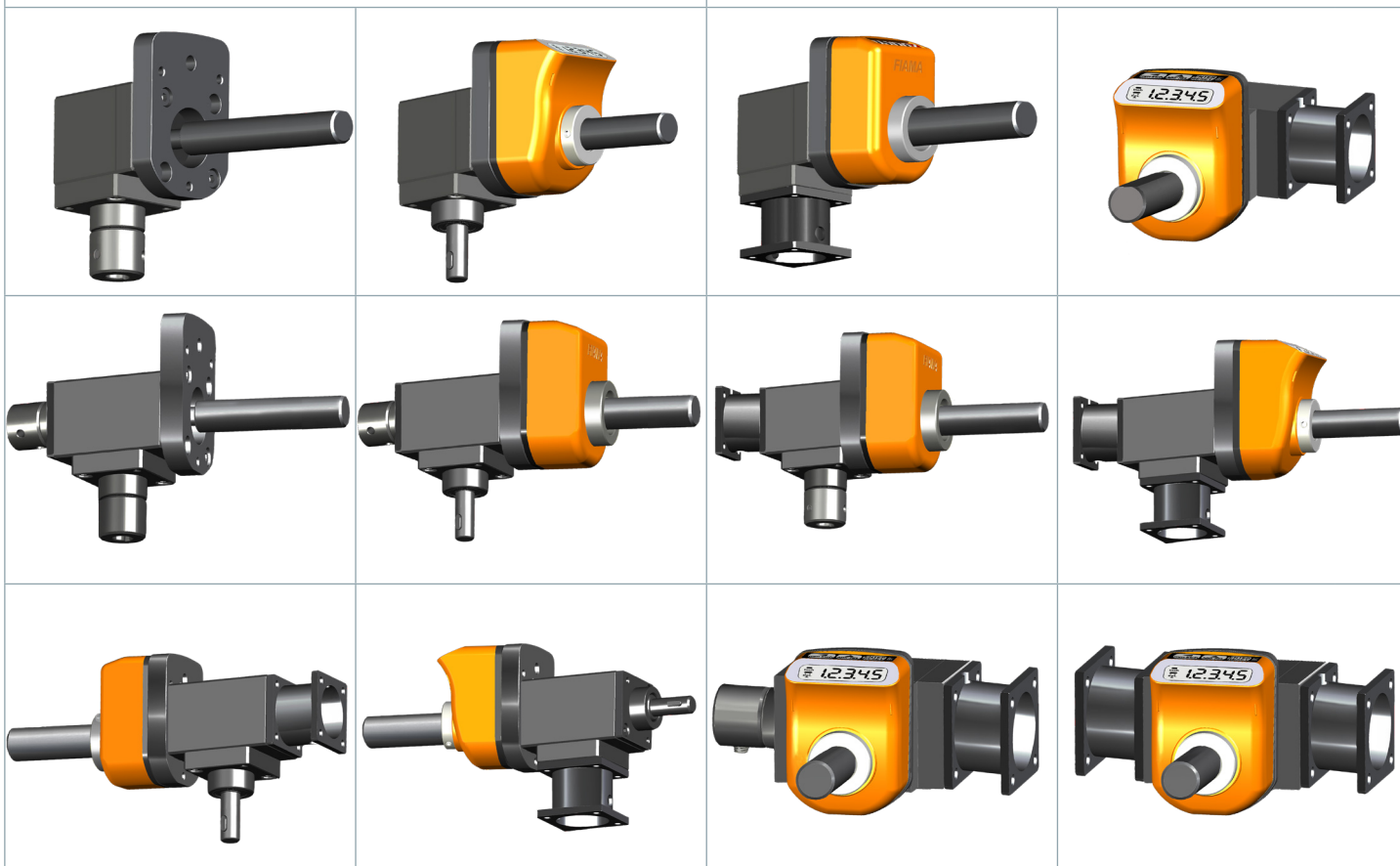
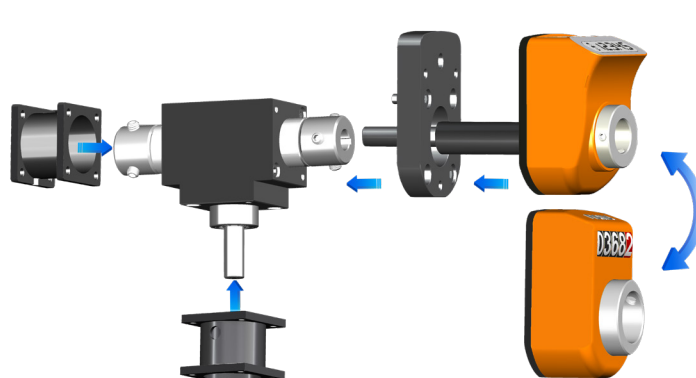
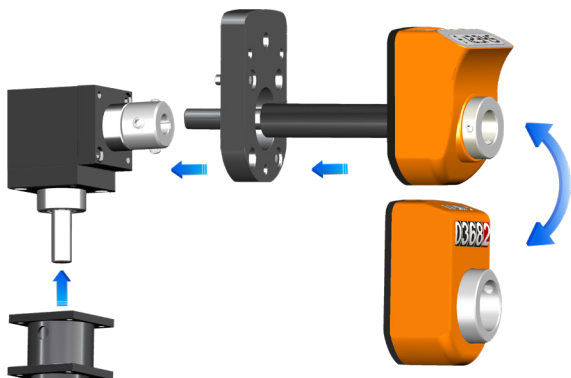
*Vollwelle mit Flansch **MØ14x80 FL-OP7/EP7**, kompatibel mit jeder Konfiguration und Ausgangswelle des Getriebes, verbindet den Positionsanzeiger, mechanisch oder elektronisch, mit dem Getriebe. Diese Kombination ermöglicht eine präzise und überwachte Positionseinstellung, was die Stabilität und Genauigkeit der Messungen erhöht. Aus schwarz eloxiertem Aluminium gefertigt, passt optisch perfekt zum ebenfalls schwarzen Getriebegehäuse.*



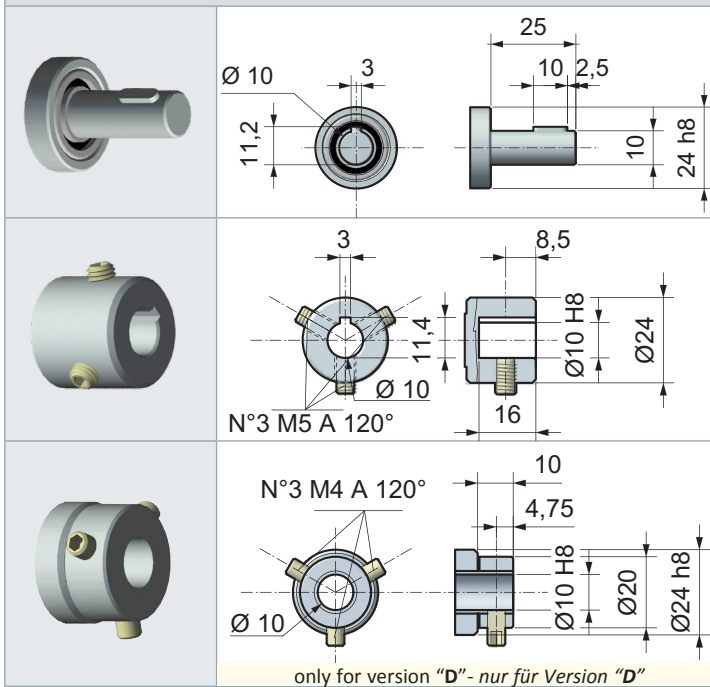
Configuration examples - Konfigurationsbeispiele

Gearbox with 2 outputs - Winkelgetrieb mit 2 Ausgänge

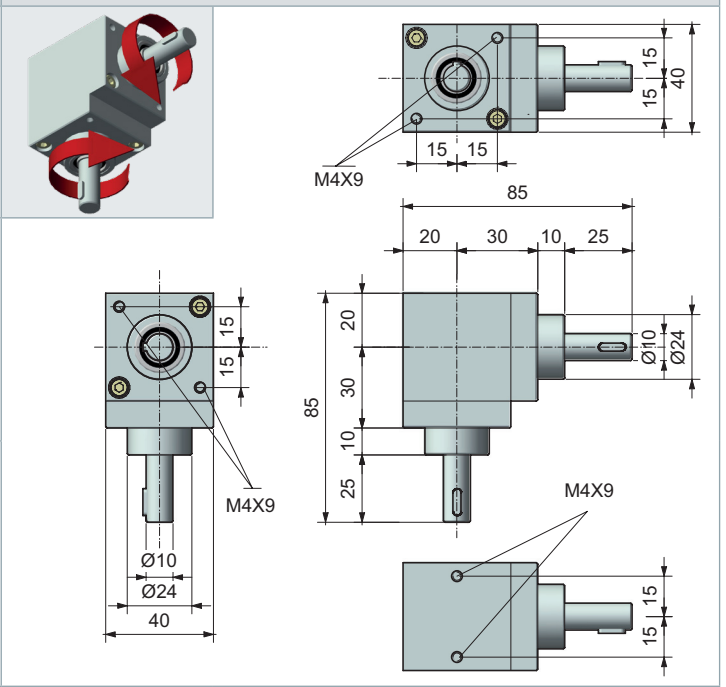
Gearbox with 3 outputs - Winkelgetrieb mit 3 Ausgänge



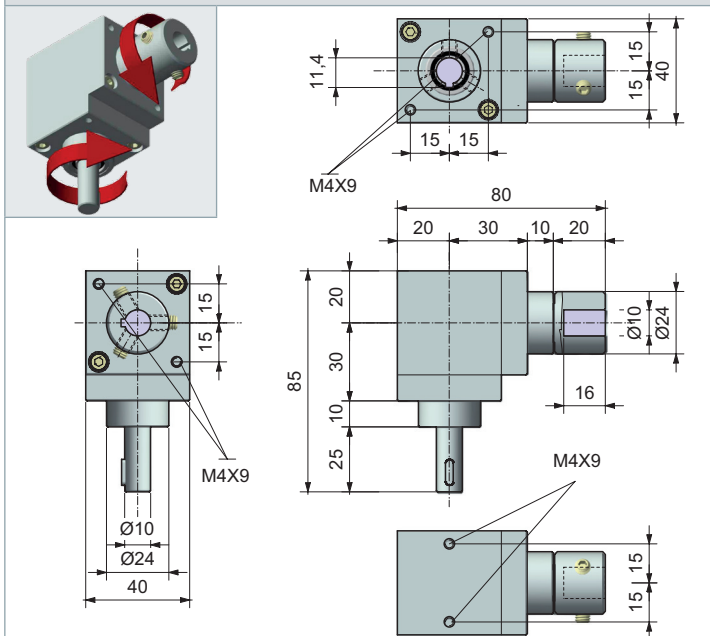
AVAILABLE OUTPUT SHAFTS - LIEFERBARE AUSGANGSWELLEN



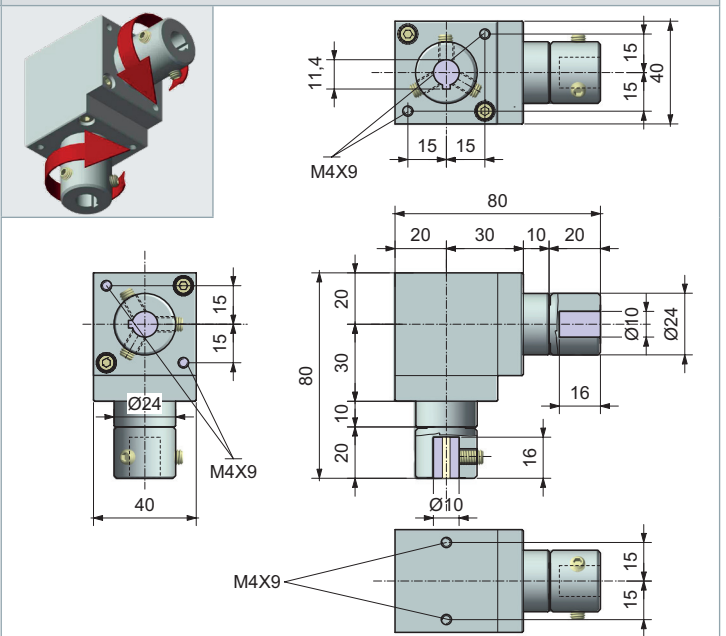
VERSION - AUSFÜHRUNG «A» M-M



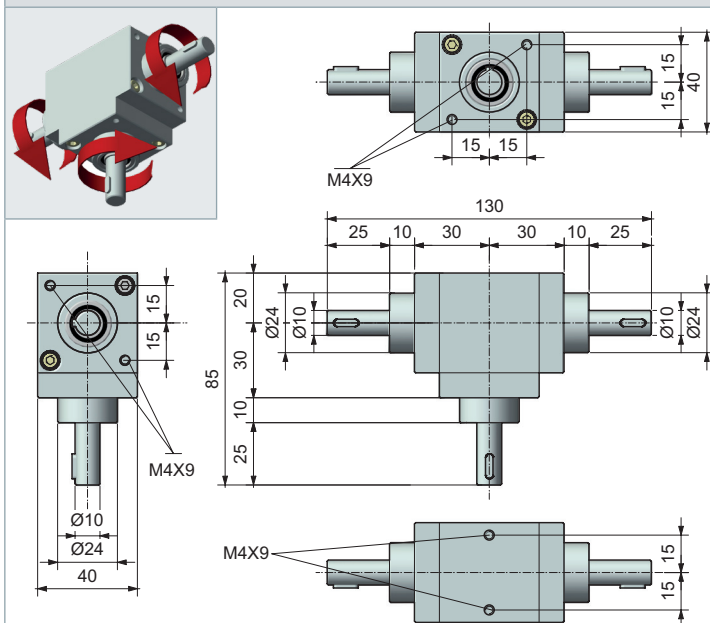
VERSION - AUSFÜHRUNG «A» M-F



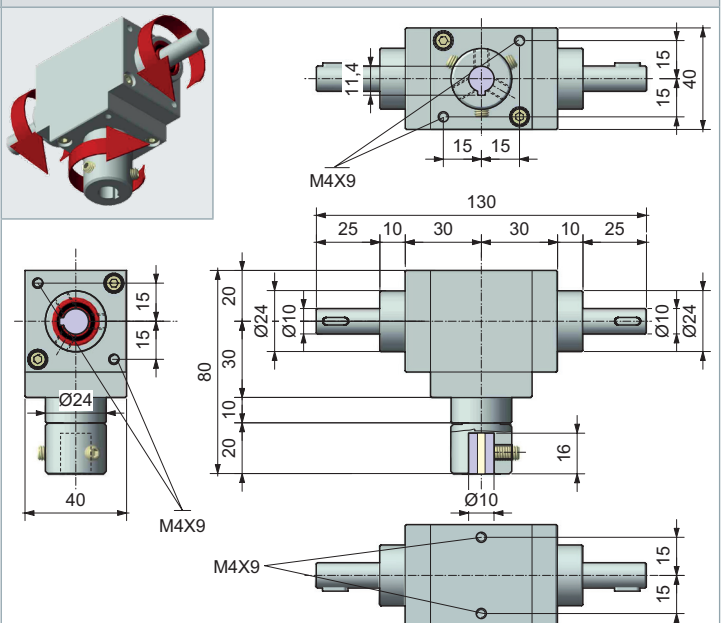
VERSION - AUSFÜHRUNG «A» F-F



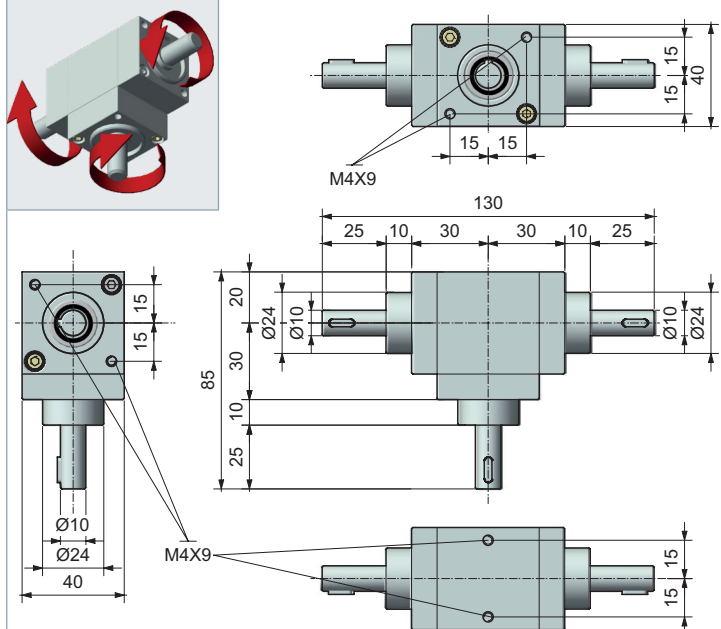
VERSION - AUSFÜHRUNG «B» M-M-M



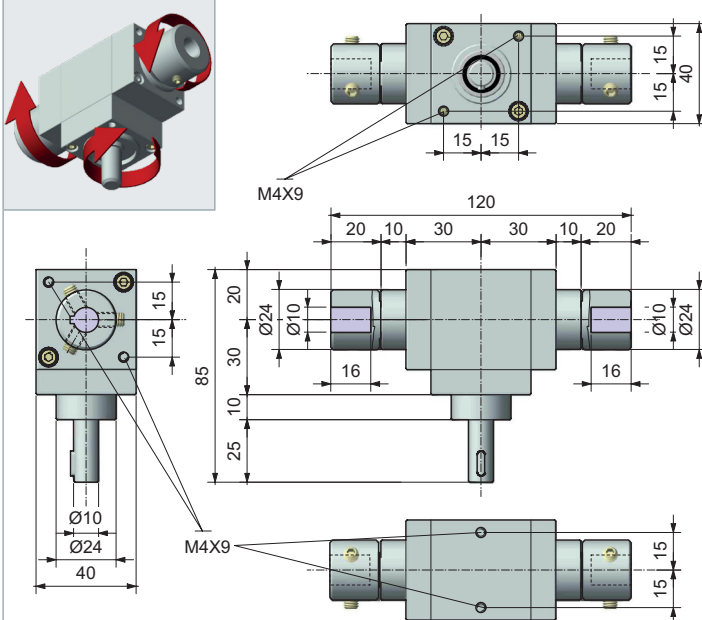
VERSION - AUSFÜHRUNG «B» F-M-M



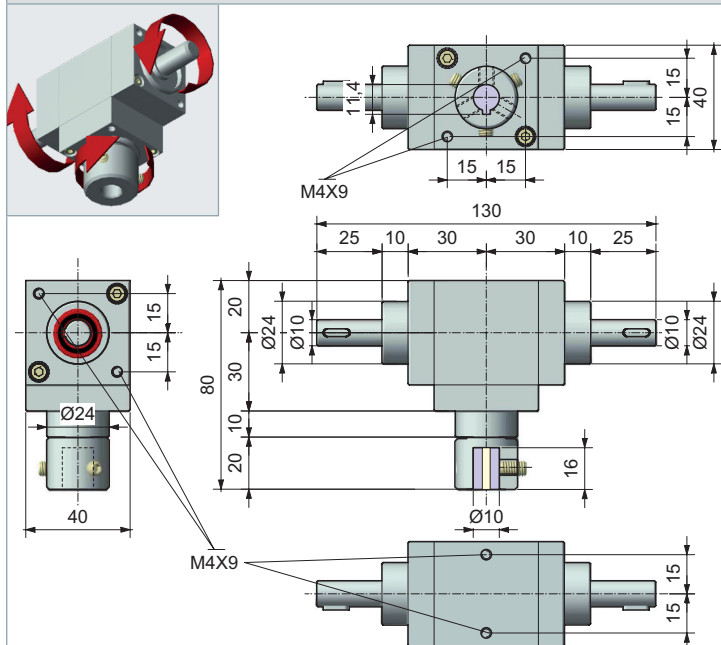
VERSION - AUSFÜHRUNG «C» M-M-M OPPOSITE ROTATION - GEGENLÄUFIG



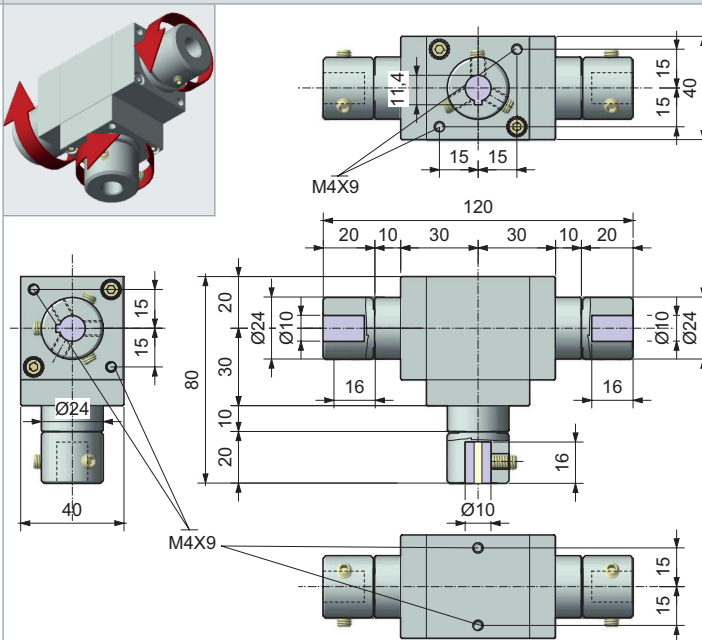
VERSION - AUSFÜHRUNG «C» M-F-F OPPOSITE ROTATION - GEGENLÄUFIG



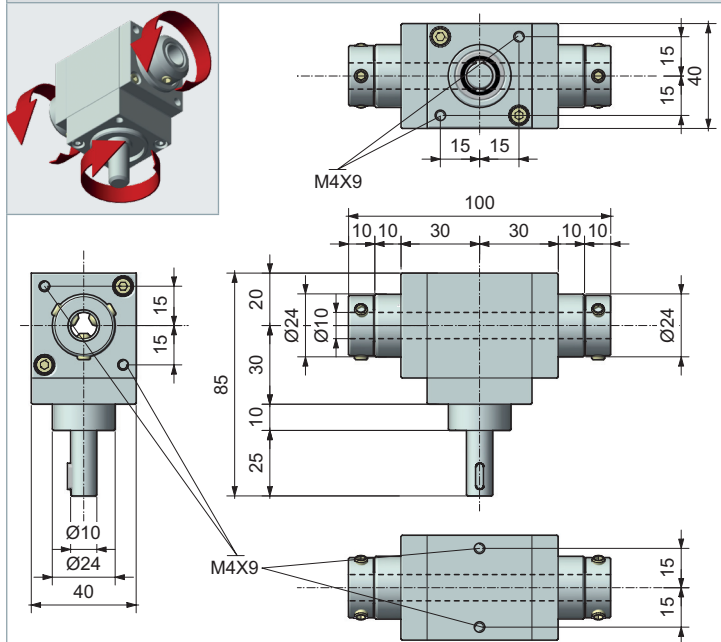
VERSION - AUSFÜHRUNG «C» F-M-M OPPOSITE ROTATION - GEGENLÄUFIG



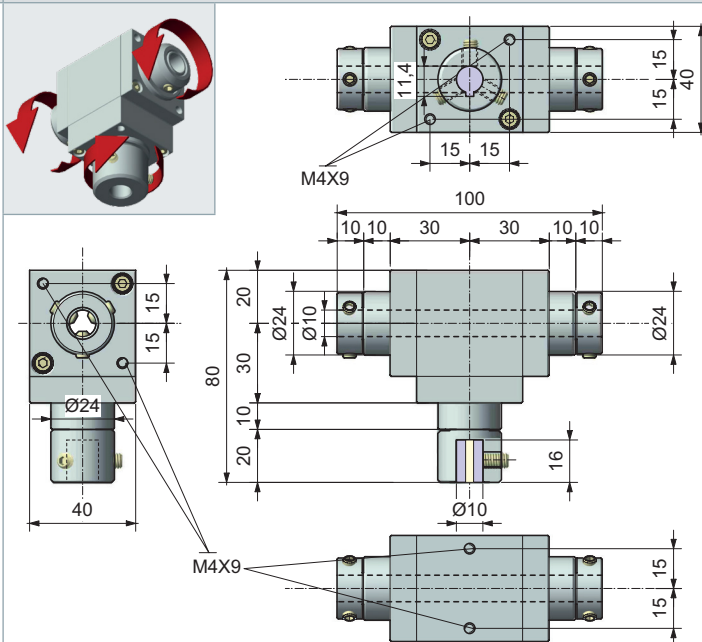
VERSION - AUSFÜHRUNG «C» F-F-F OPPOSITE ROTATION - GEGENLÄUFIG



VERSION - AUSFÜHRUNG «D» M-F-F THROUGH-HOLLOW SHAFT - DURCHGEHEND



VERSION - AUSFÜHRUNG «D» F-F-F THROUGH-HOLLOW SHAFT - DURCHGEHEND



VERSION - AUFÜHRUNG «D» F-(Ø10CH3)-F(Ø10CH3)

THROUGH-HOLLOW SHAFT - DURCHGEHEND

Technical drawing of a through-hollow shaft assembly, version D. The drawing includes an isometric view and three orthographic views (front, side, and top).

Isometric View: Shows the assembly with a central shaft and three red curved arrows indicating rotation.

Orthographic Views:

- Front View:** Shows the central shaft with a diameter of 10 mm (H8) and a thread of M4. The shaft is mounted in a housing with a central bore of 11.4 mm. The housing has a total width of 40 mm and a central section of 30 mm. The shaft has a length of 16 mm.
- Side View:** Shows the shaft with a diameter of 24 mm and a length of 80 mm. The shaft is mounted in a housing with a central bore of 11.4 mm. The housing has a total width of 40 mm and a central section of 30 mm.
- Top View:** Shows the shaft with a diameter of 24 mm and a length of 60 mm. The shaft is mounted in a housing with a central bore of 11.4 mm. The housing has a total width of 40 mm and a central section of 30 mm.

Dimensions are given in mm.

VERSION - AUSFÜHRUNG «E» M-M-M-M

Technical drawing of the M-M-M-M version of the 3D printed part, showing dimensions and features.

Dimensions:

- Overall width: 40
- Overall height: 130
- Central hole diameter: $\varnothing 10$
- Mounting holes: M4X9
- Mounting hole diameter: $\varnothing 4$
- Mounting hole offset from center: 15
- Top flange diameter: $\varnothing 24$
- Top flange thickness: 10
- Top flange offset from center: 25
- Top flange hole diameter: $\varnothing 10$
- Top flange hole offset from center: 15
- Top flange hole diameter: $\varnothing 24$
- Top flange hole offset from center: 25

VERSION - AUSFÜHRUNG «E» F-F-F-F

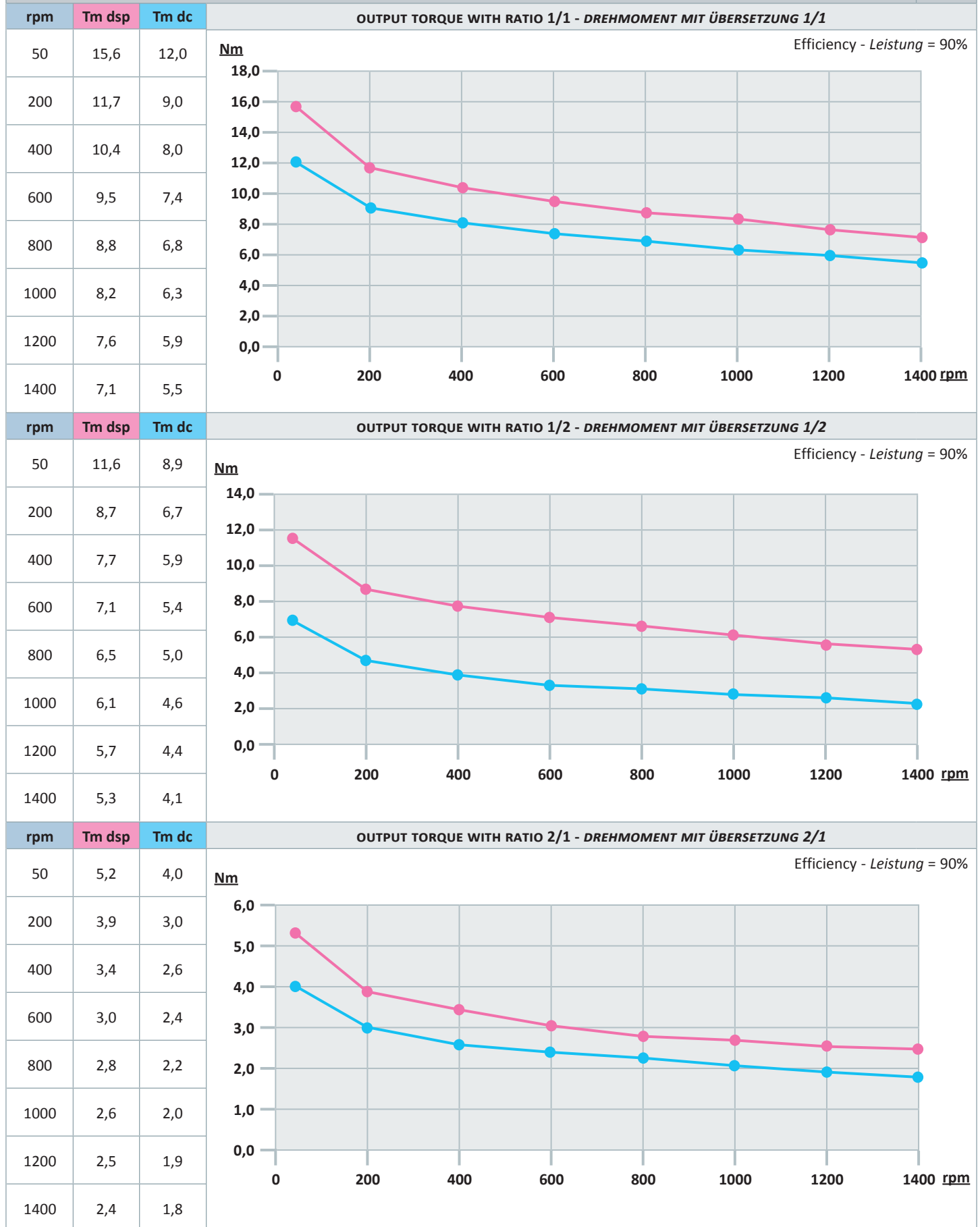
Technical drawing of the 4-way valve, Version - Ausführung «E» F-F-F-F. The drawing includes an isometric view and three orthographic views (front, side, and bottom) with dimensions in millimeters.

Isometric View: Shows the valve body with four 90-degree rotation arrows indicating its function.

Front View: Shows the valve body with a central port of diameter $\varnothing 24$ and four side ports of diameter $\varnothing 10$. The mounting holes are M4X9. The overall width is 40 mm, and the overall height is 40 mm.

Side View: Shows the valve body with a central port of diameter $\varnothing 24$ and four side ports of diameter $\varnothing 10$. The mounting holes are M4X9. The overall width is 100 mm, and the overall height is 40 mm.

Bottom View: Shows the valve body with a central port of diameter $\varnothing 24$ and four side ports of diameter $\varnothing 10$. The mounting holes are M4X9. The overall width is 40 mm, and the overall height is 80 mm.



- Tm = max torque in Nm - max Drehmoment in Nm
- dc = bevel gearing - Kegelradverzahnung
- dsp = spiral gearing - Spiralverzahnung

PART NR. CONFIGURATION - BESTELLMUSTER	66/5	SP	IN	B	MØ10	FL-M	FØ10	FL-M	FØ10	FL-M	FØ10	1/1
SPIRAL BEVEL GEARS - SPIRALKEGELRÄDER (☛Tab. 2)												
SP ratio - Übersetz. 1/1	ratio - Übersetz. 1/2 - 2/1											
STAINLESS STEEL - EDELSTAHL												
INOX												
VERSION - AUSFÜHRUNG (☛Tab. 1)												
A - B - C - D - E												
SHAFT 1 - WELLE 1 (☛Tab. 9)												
MØ10 - FØ10 (standard)												
MØ12 - MØ14 - FØ10CH3 - FØ12 - FØ14												
MØ14x80 FL-OP3/EP3 (flanged - mit Flansche ☛Tab. 8)												
MØ14x80 FL-OP7/EP7 (flanged - mit Flansche ☛Tab. 8)												
COUPLING FLANGE - KUPPLUNGSFLANSCH (☛Tab. 7)												
FL-M ((shaft 1 - Welle 1)												
SHAFT 2 - WELLE 2 (☛Tab. 9)												
MØ10 - FØ10 (standard)												
MØ12 - MØ14 - FØ10CH3 - FØ12 - FØ14												
MØ14x80 FL-OP3/EP3 (flanged - mit Flansche ☛Tab. 8)												
MØ14x80 FL-OP7/EP7 (flanged - mit Flansche ☛Tab. 8)												
COUPLING FLANGE - KUPPLUNGSFLANSCH (☛Tab. 7)												
FL-M (shaft 2 - Welle 2)												
SHAFT 3 - WELLE 3 (☛Tab. 9)												
MØ10 - FØ10 (standard)												
MØ12 - MØ14 - FØ10CH3 - FØ12 - FØ14												
MØ14x80 FL-OP3/EP3 (flanged - mit Flansche ☛Tab. 8)												
MØ14x80 FL-OP7/EP7 (flanged - mit Flansche ☛Tab. 8)												
COUPLING FLANGE - KUPPLUNGSFLANSCH (☛Tab. 7)												
FL-M (shaft 3 - Welle 3)												
SHAFT 4 - WELLE 4 (☛Tab. 9)												
MØ10 - FØ10 (standard)												
MØ12 - MØ14 - FØ10CH3 - FØ12 - FØ14												
RATIO - ÜBERSETZUNG												
1:1 - 1:2 - 2:1 (☛Tab. 3)												
INDICATORS - POSTIONSANZEIGEN												
OP3/EP3 (order separately - separat bestellen)												
OP7/EP7 (order separately - separat bestellen)												

☛ for the selection of indicators please see datasheets, which can be downloaded also from our web-site www.fiama.it in section "Position indicators ..."

zur Auswahl siehe Datenblätter, die auch von unserer Website www.fiama.it im Abschnitt „Positionsanzeigen ...“ heruntergeladen werden können.

exclusive option - keine Auswahl

optional - auf Wunsch lieferbar

- For the selection of the gearbox, we advise to consult the tables, and the technical data shown in the "General Information" of this catalog (p. 4 - 7)
- For abbreviations and acronyms consult the «glossary» in the "General Information" of this catalog (p. 7)
- Für eine korrekte Auswahl, empfehlen wir die Tabellen und die Daten, in den "Allgemeine Informationen" dieses Katalogs (S. 4 - 7) nachzuschlagen.
- Für Abkürzungen und Akronyme den «Glossar» konsultieren in den "Allgemeine Informationen" dieses Katalogs (S. 7).