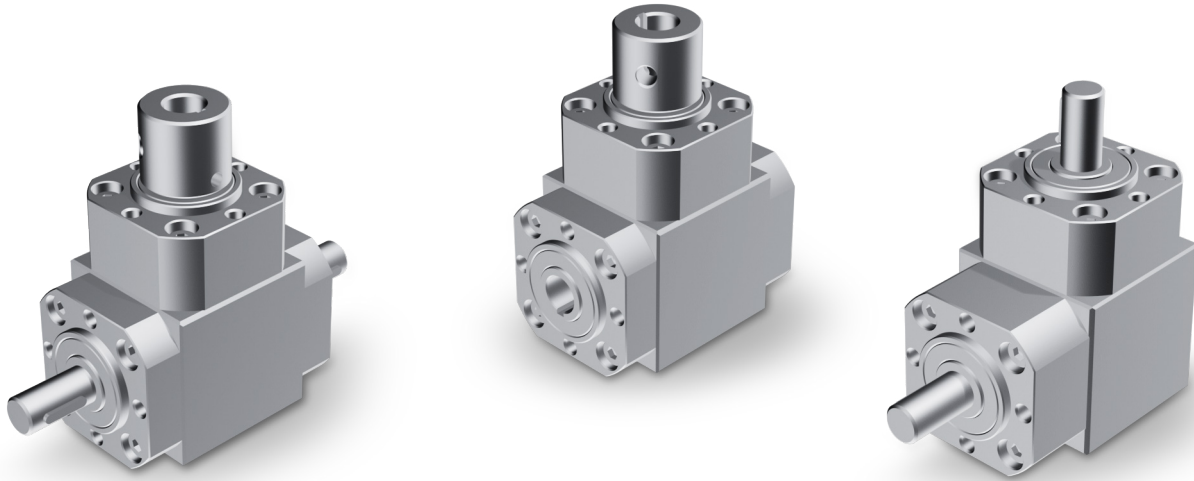




- Ideal for continuous motorized use at maximum efficiency, without any loss of power.
- The component configuration ensures handling of constant loads with smooth, and uninterrupted operation.
- Oil bath lubrication for speeds above 200 rpm; grease lubrication for speeds below 200 rpm.
- Available transmission ratios: **1:1 - 1:2 - 2:1** (available in versions «A» - «B» - «C»); (**Tab. 3**).
- Aluminium case, anodised; AISI 303 stainless steel shafts (standard).
- Max. transmissible torque **8 Nm (Tab. 10)**; radial load - axial load (**Tab. 11**).
- Models (**Tab. 1**):
- Version «A» with 2 outputs; weight 270 g.
- Version «B» with 3 outputs; weight 290 g.
- Version «C» (opposite rotation) with 3 outputs; weight 310 g.
- Version «D» with 3 outputs, 2 through hollow shafts; weight 260 g.
- Standard shafts: **M** = male **Ø8CH2** / **F** = female **Ø8CH2** (Tab. 9).

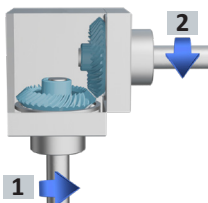
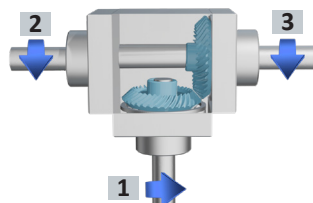
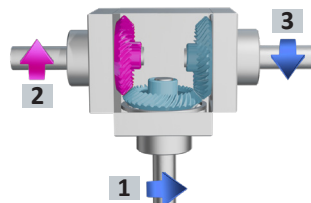
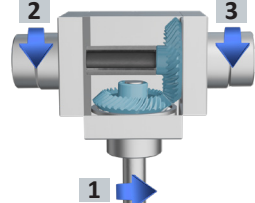
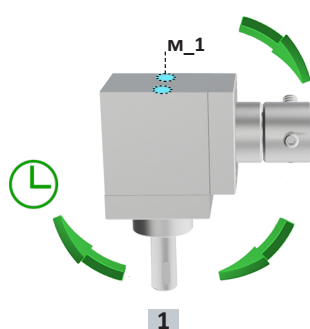
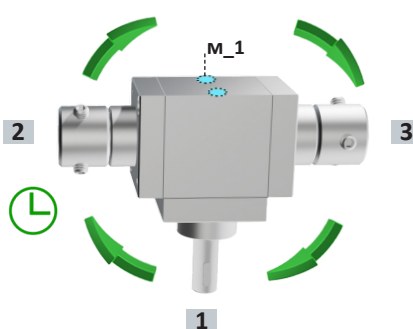
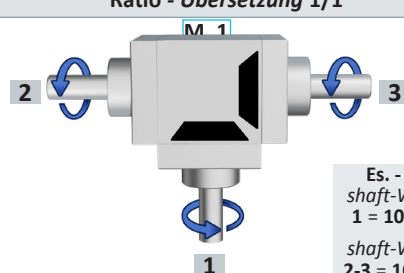
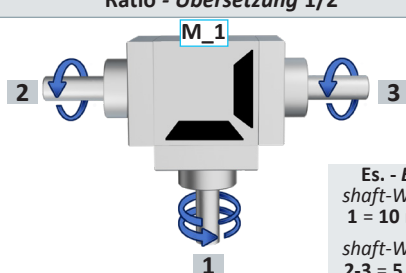
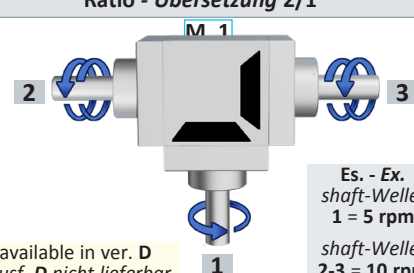
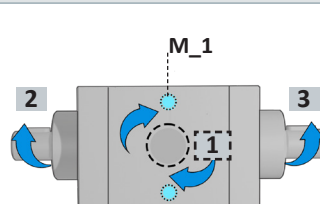
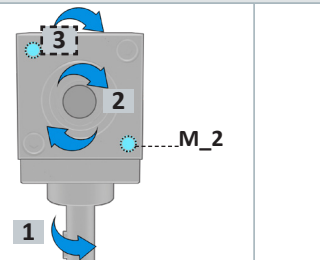
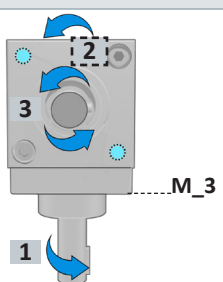
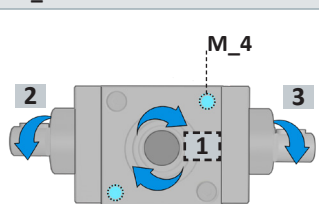
Available on request:

- Shafts: **M** = male **Ø10CH3 - Ø14CH5**.
- Shafts: **F** = female **Ø10CH3 - Ø14CH5**.
- Custom configurations

- *Ideal für motorisierten Dauerbetrieb bei höchster Effizienz ohne Leistungsverlust.*
- *Die Bauteile-Konfiguration sorgt für einen unterbrechungsfreien und leichtgängigen Betrieb.*
- *Ölschmierung bei einer Drehzahl über 200 U/min; Fettschmierung bei einer Drehzahl unter 200 U/min.*
- *Lieferbare Übersetzungen: 1:1 - 1:2 - 2:1 (lieferbar in Ausführung «A» - «B» - «C»); (Tab. 3).*
- *Druckgussgehäuse, schwarz eloxiert; Wellen aus Edelstahl AISI 303.*
- *Max. Drehmoment 8 Nm (Tab. 10); Radiallast kg - Axiallast (Tab. 11).*
- Ausführungen (**Tab. 1**):
- Version «A» mit 2 Ausgangswellen; Gewicht 270g.
- Version «B» mit 3 Ausgangswellen; Gewicht 290 g.
- Version «C» (gegenläufig) mit 3 Ausgangswellen; Gewicht 310 g.
- Version «D» mit 3 Ausgangswellen, 2 durchgehende Hohlwellen; Gewicht 260 g.
- Standard-Wellen: **M** = Vollwellen **Ø8CH2** / **F** = Hohlwellen **Ø8CH2** (**Tab. 9**).

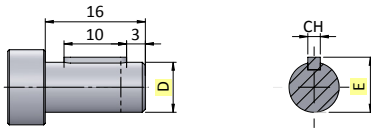
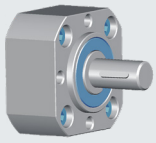
Available on request:

- Wellen: **M** = Vollwellen **Ø10CH3 - Ø14CH5**.
- Wellen: **F** = Hohlwellen **Ø10CH3 - Ø14CH5**.
- Kundenspezifische Ausführungen.

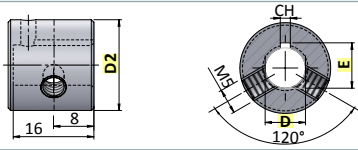
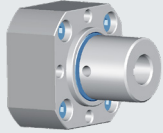
CONFIGURATION AND DIRECTION OF ROTATION - KONFIGURATION UND UMDREHUNGSSINN				Tab. 1
«A» 	«B» 	«C» 	«D» 	
2 outputs, same rot, direction 2 Abtriebe, gleichsinnig	3 outputs, same rot, direction 3 Abtriebe, gleichsinnig	3 uscite, 1 con rotazione discorde 3 outputs, 1 with opposite rotation	3 outputs, 2 hollow shafts, same rot. 3 Abtriebe, 2 durchgehend, gleich	
OUTPUT SHAFT IDENTIFICATION - WELLENKENNZEICHNUNG				Tab. 2
Example - Beispiel 		Example - Beispiel 		Shaft 1 is always shown on the side opposite the M_1 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. <i>Welle 1 ist stets gegenüber den Bohrungen M_1 dargestellt und dient als Bezug für Bauform, Drehrichtung und Übersetzung. Sie wird konventionsgemäß im Uhrzeigersinn dargestellt; die übrigen Wellen werden im Uhrzeigersinn nummeriert.</i>
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				Information
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		
+ 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		

AVAILABLE SHAFTS - LIEFERBARE WELLEN

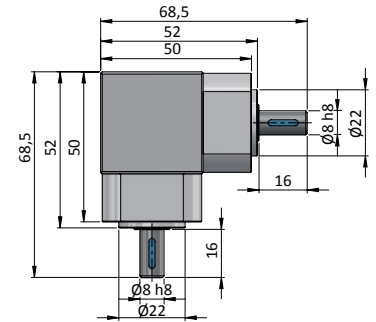
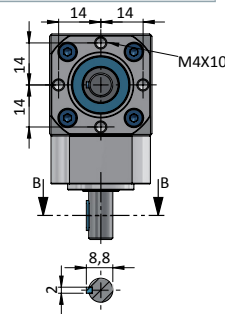
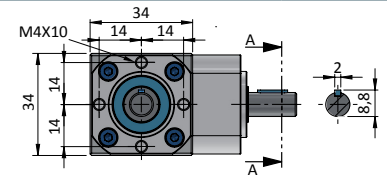
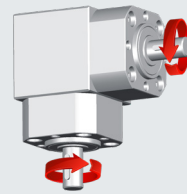
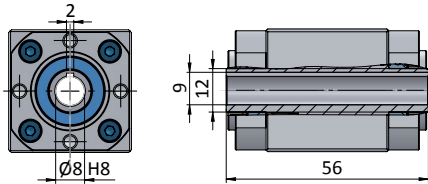
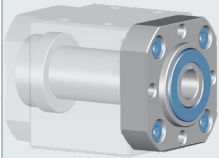
VERSION - AUSFÜHRUNG «A» M-M



D = Ø8h8 CH2 / Ø10h8 CH3 / Ø14h8 CH5
E = 8,8 / 11,2 / 16

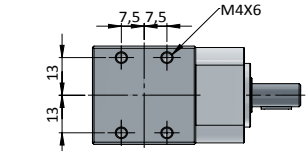
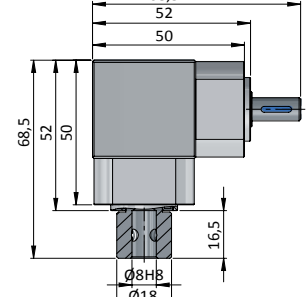
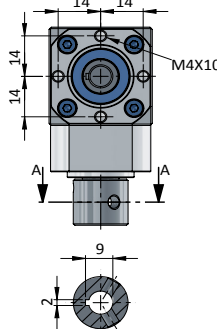
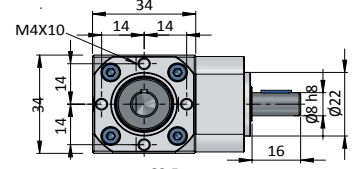
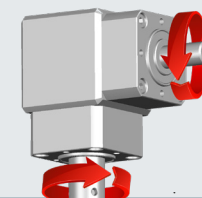
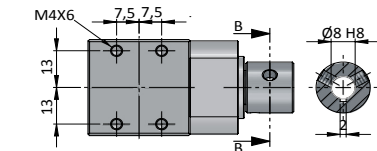
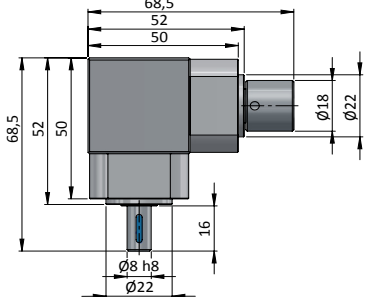
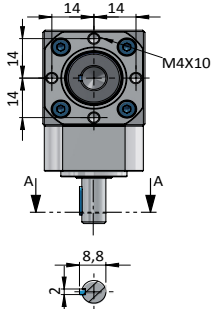
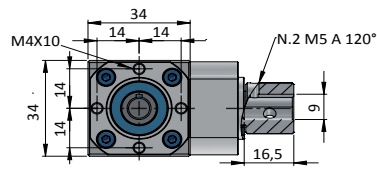
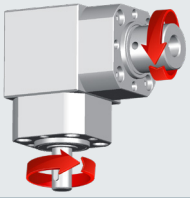


D = Ø8h8 CH2 / Ø10h8 CH3 / Ø14h8 CH5
D2 = Ø18 (D Ø8 - Ø10) / Ø22 (D Ø14)
E = 9 / 11,4 / 16,2



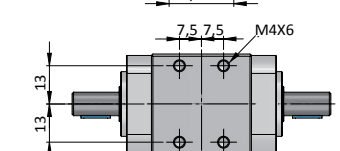
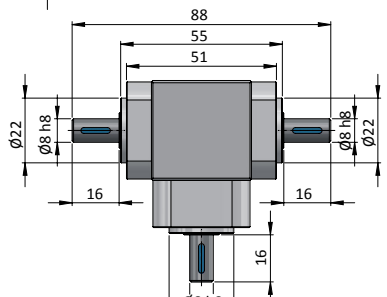
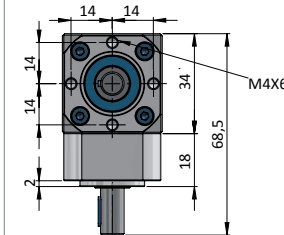
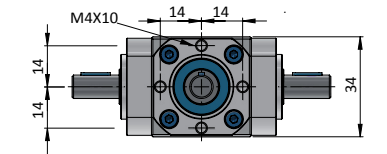
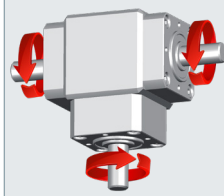
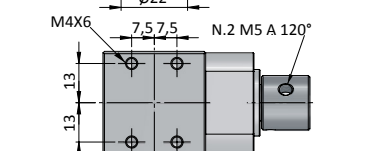
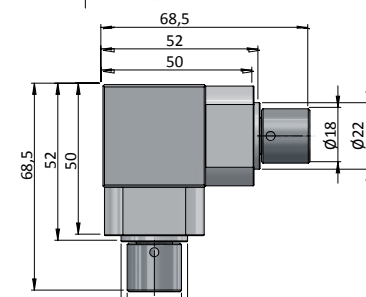
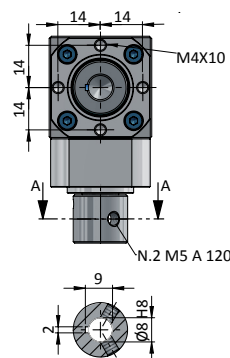
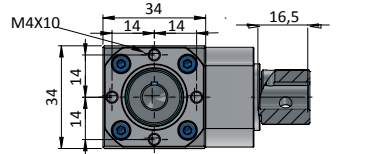
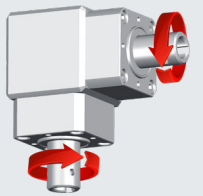
VERSION - AUSFÜHRUNG «A» M-F

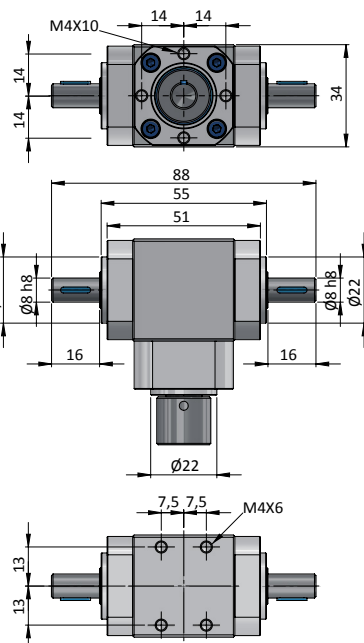
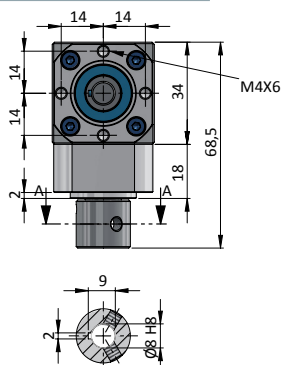
VERSION - AUSFÜHRUNG «A» F-M



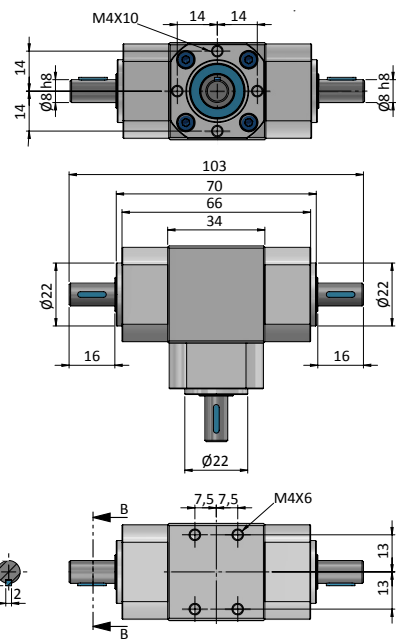
VERSION - AUSFÜHRUNG «A» F-F

VERSION - AUSFÜHRUNG «B» M-M-M

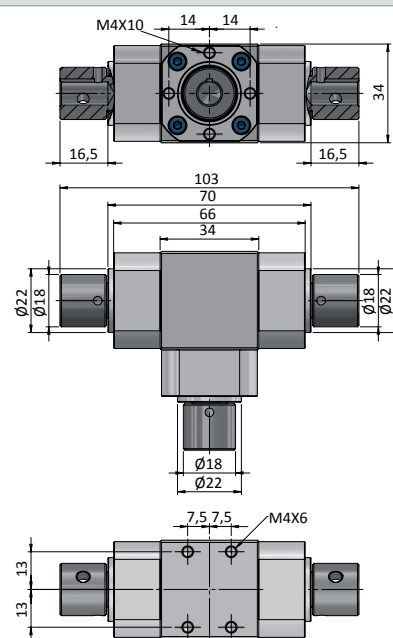
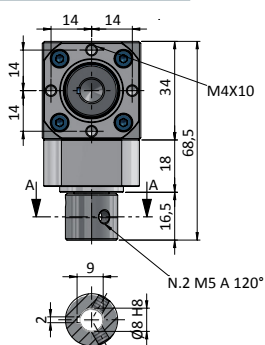
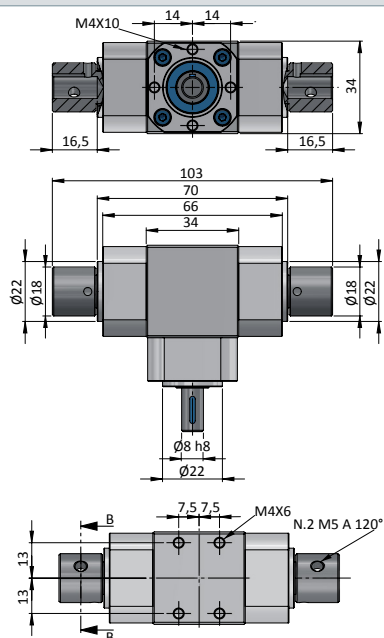
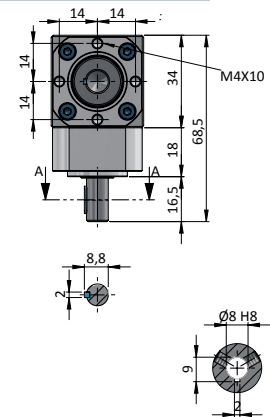




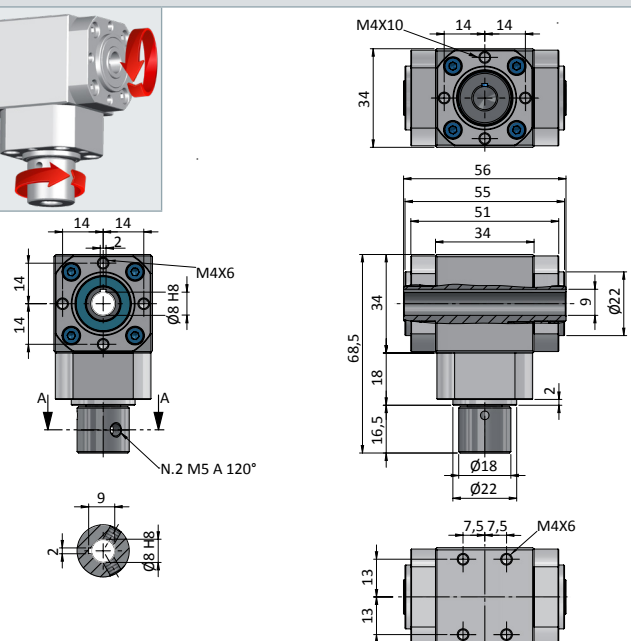
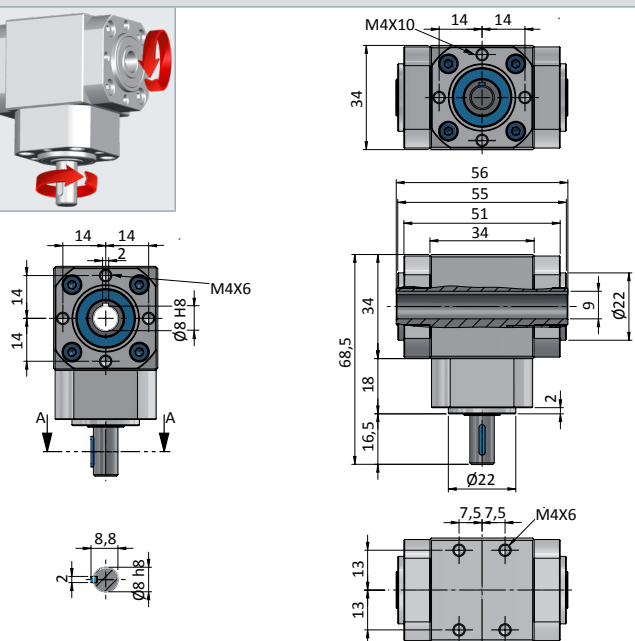
A 3D model of a cube with three red arrows indicating rotation around its axes. The arrows are positioned on the three visible faces of the cube, each pointing in a direction that suggests a rotational movement around a specific axis.

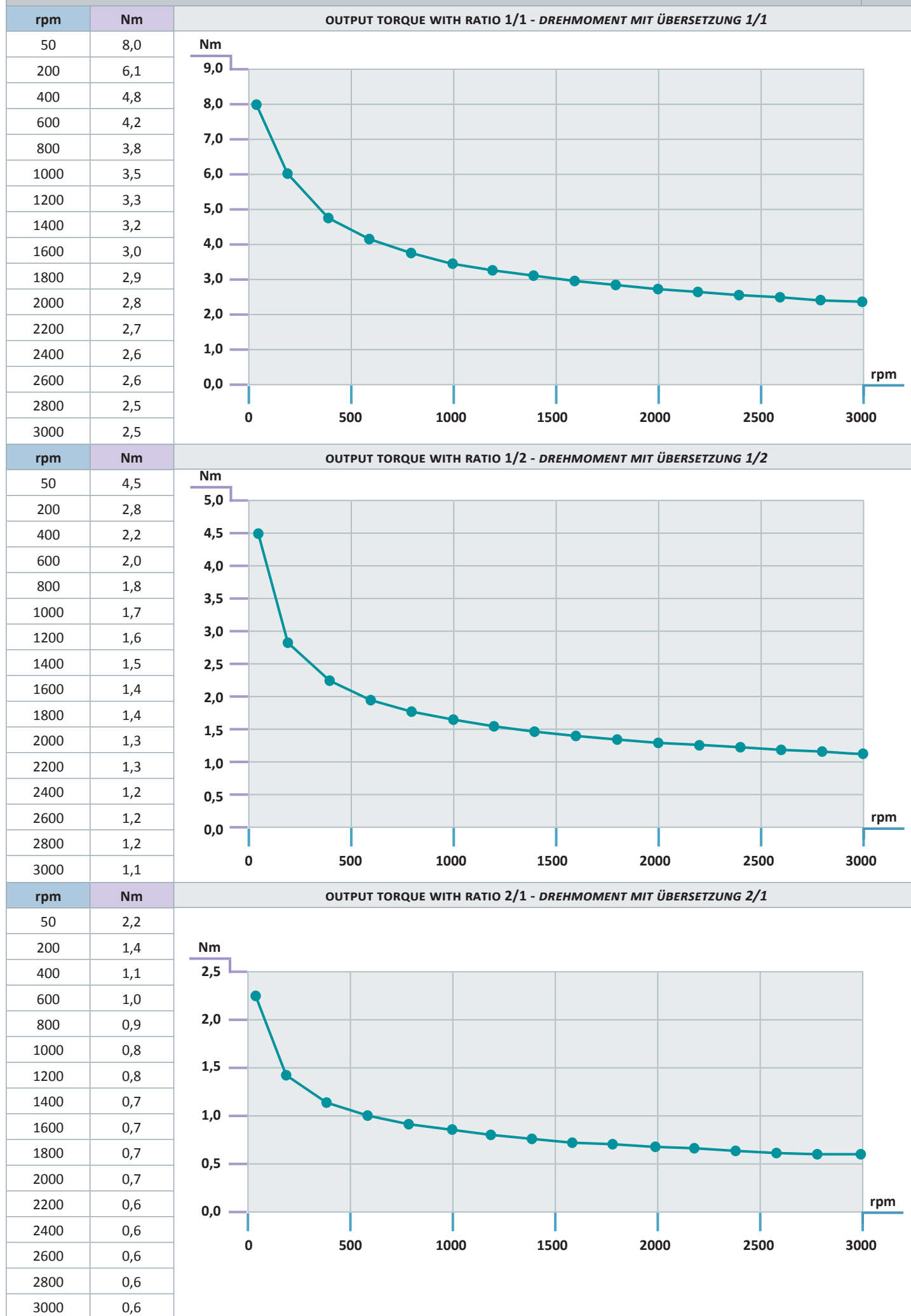


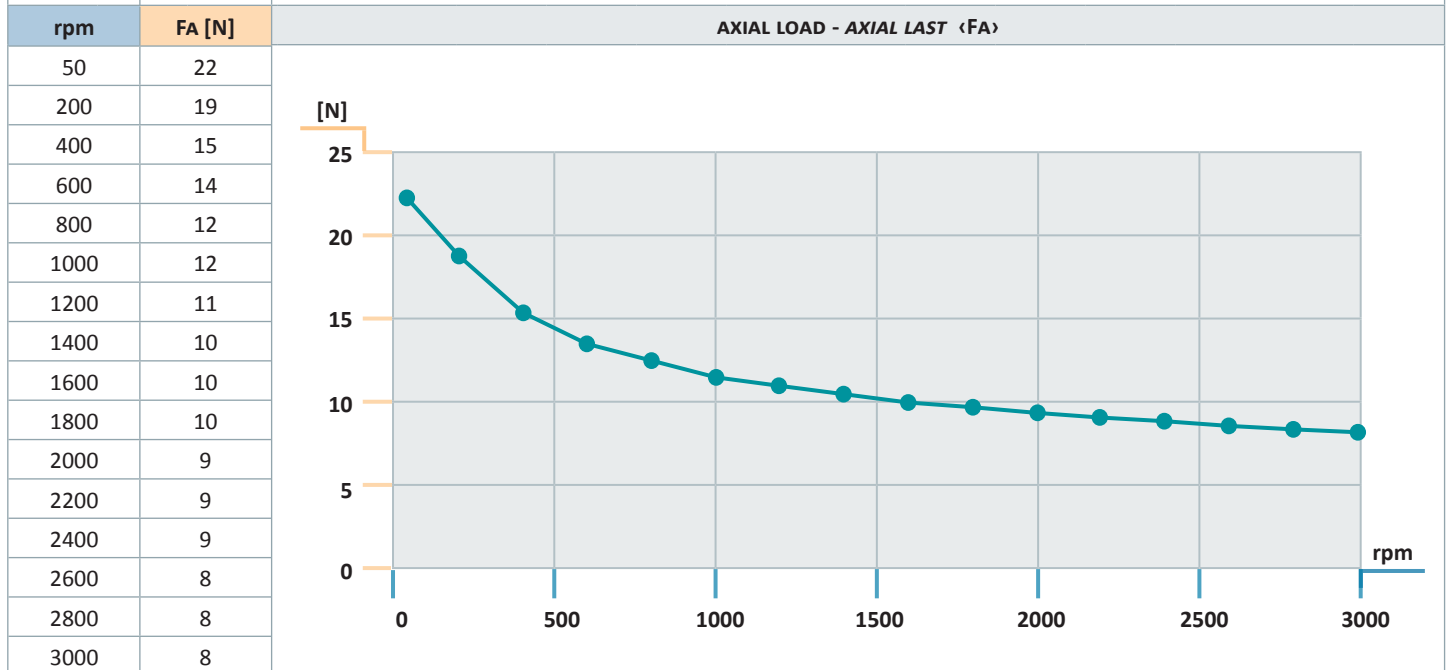
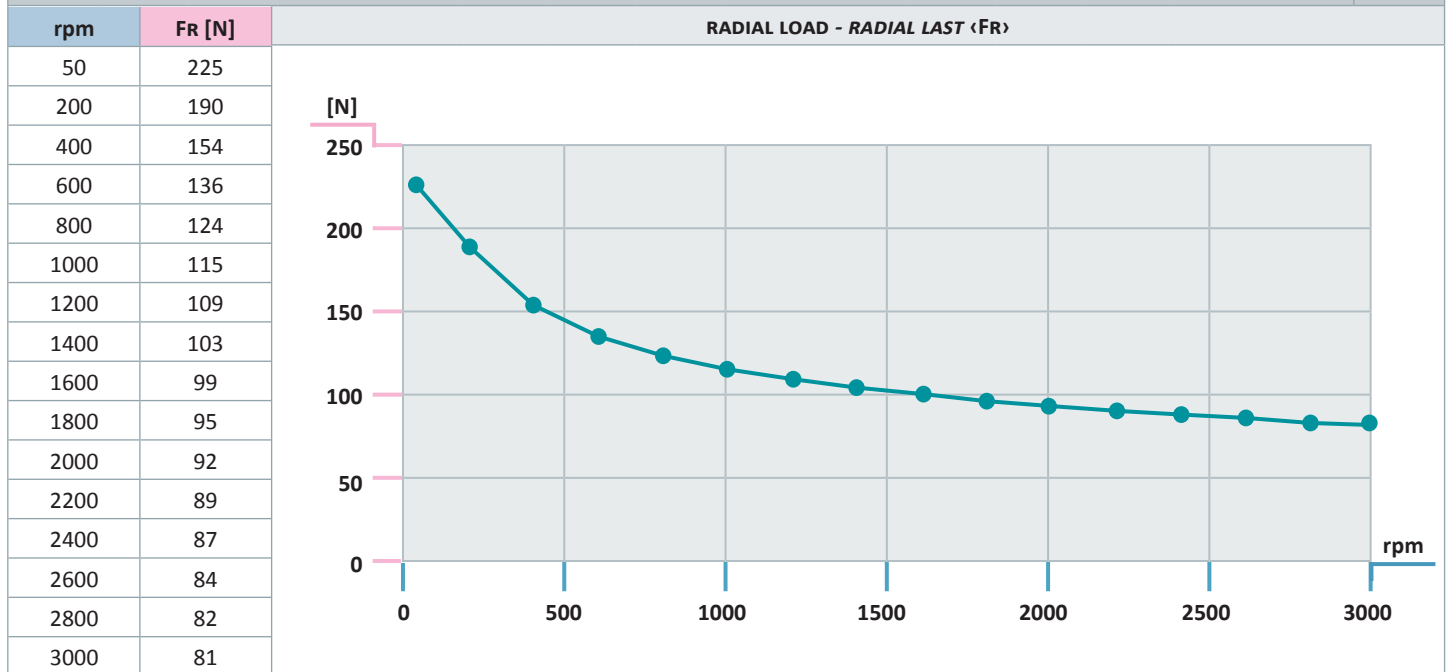
A 3D CAD model of a four-way valve. The valve has a central body with four ports. Three red curved arrows are shown, each indicating a direction of rotation for one of the ports: the left port rotates clockwise, the top-right port rotates counter-clockwise, and the bottom port rotates clockwise.



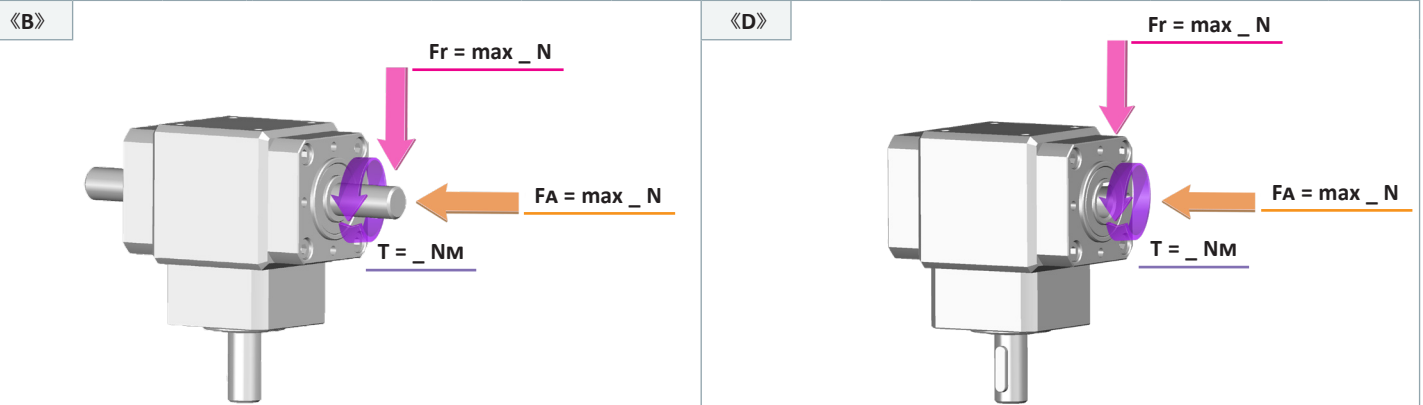
A 3D CAD model of a three-ported directional control valve. The valve has a hexagonal body with a mounting flange on top. Three ports are visible: two on the side and one on the bottom. Red curved arrows indicate the flow direction: from the top port, through the valve body, and out through the side and bottom ports.







REPRESENTATION OF LOADS - DARSTELLUNG VON LASTEN



- The transmission efficiency of the gearbox is 90%.

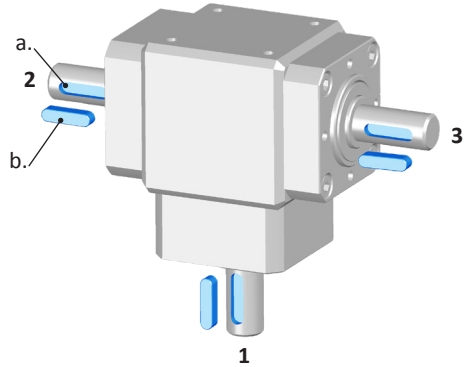
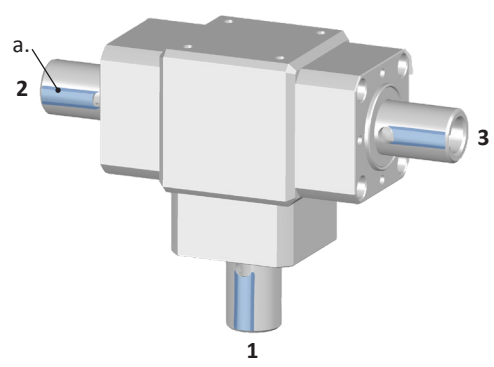
- The charts represent the maximum radial and axial loads applicable to the gearbox shaft.

Note: a radial load (ex. belt tension) can only be applied to the long shaft of the «B» and «D» versions; otherwise, a support must be provided.

- Der Übertragungsleistungsgrad des Getriebes liegt bei 90 %.

- Die Diagramme stellen die maximalen radialen und axialen Belastungen dar, die auf die Getriebewelle einwirken können.

Hinweis: Eine radiale Belastung (z. B. Riemenspannung) kann nur auf die lange Welle der Versionen «B» und «D» ausgeübt werden; andernfalls muss eine Abstützung vorgesehen werden.

PHASE BETWEEN KEYS - KEILNUT AUSRICHTUNG			
ratio - Übersetzung	degrees - Grade °	«B»	«C»
1/1	± 7,2°		
1/2	± 6,9°		
2/1	± 6,9°		
a. keyway - Keilnut			
b. key - Federnut			
The keyways on the shafts are never perfectly in phase, except for shaft 2 and 3 in versions «B» and «D».			
Die Keilnuten auf den Wellen sind nie perfekt in Phase, mit Ausnahme der Wellen 2 und 3 in den Versionen «B» und «D».			

GUIDELINES	PRAKTISCHE HINWEISE
SELECTION OF THE GEARBOX	WINKELGETRIEBE AUSWAHL
For correct sizing it is necessary to identify: the power, the torque and the rotation speed. We advise to consult also the tables, and the technical data shown in the "General Information" (p. 4 - 7). For abbreviations and acronyms consult the "glossary" (p. 7)	Für eine korrekte Dimensionierung müssen die Leistung, das Drehmoment und die Drehzahl ermittelt werden. Wir empfehlen, auch die Tabellen und technischen Daten in den "Allgemeinen Informationen" (S. 4 - 7) zu konsultieren. Für Abkürzungen und Symbole siehe das "Glossar" (S. 7).
INSTALLATION	INSTALLATION
Ensure proper alignment of the shafts to avoid overloading, overheating, and premature wear of the bearings. The gearboxes, thanks to their construction design, can be installed in any position.	Sicherstellen, dass die Achsen korrekt ausgerichtet sind, um Überlastungen, Überhitzung und vorzeitigen Verschleiß der Kugellagerung zu vermeiden. Die Winkelgetriebe können aufgrund ihrer Bauweise in jeder Position installiert werden.
START-UP	INBETRIEBNAHME
After a brief pre-delivery test, the gearbox requires several hours of running to reach maximum efficiency. A gradual increase in load is recommended, reaching full load within 20-30 hours of operation. Initial temperatures will be higher during the break-in period.	Nach einem kurzen Vorabtest benötigt die Winkelgetriebe einige Stunden Einlaufzeit, um die maximale Leistung zu erreichen. Es wird empfohlen, die Belastung schrittweise bis zur maximalen Belastung innerhalb von 20-30 Betriebsstunden zu erhöhen. Die Anfangstemperaturen werden während des Einlaufens höher sein.
PERIODIC MAINTENANCE	REGELMÄSSIGE WARTUNG
Our gearboxes are maintenance-free; however, it is advisable to periodically check for any lubricant leaks. The replacement of the gearbox depends on operating conditions, with an estimated lifespan of 10,000 hours under normal conditions.	Unsere Winkelgetriebe sind wartungsfrei; es wird jedoch empfohlen, regelmäßig auf eventuelle Schmiermittelleckagen zu prüfen. Der Austausch der Winkelgetriebe hängt von den Betriebsbedingungen ab, mit einer geschätzten Lebensdauer von 10.000 Stunden unter normalen Bedingungen.
STORAGE	LAGERUNG
During warehouse storage, protect the gearboxes from dust and corrosive environments. We recommend periodically rotating the gearboxes to ensure proper lubrication of internal parts and seals.	Während der Lagerung sollten die Winkelgetriebe vor Staub und korrosiven Umgebungen geschützt werden. Wir empfehlen, die Winkelgetriebe regelmäßig zu drehen, um eine angemessene Schmierung der Innenkomponenten und Dichtungen sicherzustellen.
WARRANTY	GARANTIE
The warranty is valid only if all instructions provided in the catalog are strictly followed.	Die Garantie ist nur gültig, wenn alle im Katalog angegebenen Anweisungen befolgt werden.

PART NR. CONFIGURATION - BESTELLMUSTER

66/4UC

B

FØ8CH2

MØ8CH2

MØ8CH2

1/1

OIL

VERSION - AUFÜHRUNG (☛Tab. 1)

A - B - C - D

SHAFT 1 - WELLE 1 (☛Tab. 9)

MØ8CH2 - FØ8CH2 (standard)

MØ10CH3 - FØ10CH3 (version-Ausführung A - B - C - D)

MØ14CH5 - FØ14CH5 (version-Ausführung A - B - C - D)

SHAFT 2 - WELLE 2 (☛Tab. 9)

MØ8 - FØ8 (standard)

MØ10CH3 - FØ10CH3 (version-Ausführung A - B - C)

MØ14CH5 - FØ14CH5 (version-Ausführung A - B - C)

SHAFT 3 - WELLE 3 (☛Tab. 9)

MØ8 - FØ8 (standard)

MØ10CH3 - FØ10CH3 (version-Ausführung A - B - C)

MØ14CH5 - FØ14CH5 (version-Ausführung A - B - C)

RATIO - ÜBERSETZUNG (☛Tab. 3)

1:1 - 1:2

2:1 (version-Ausführung A - B - C)

LUBRICANT - SCHMIERUNG

GREASE (grease-filled up to 200 rpm - fettgeschmiert bis 200 rpm)

OIL (oil-filled over 200 rpm - ölfüllt über 500 rpm)

exclusive option - keine Auswahl

optional - auf Wunsch lieferbar