



PLANETENMOTOR SP ORBITAL MOTOR SP

ANWENDUNG

- o Förderbänder
- o Metallbearbeitungsmaschinen
- o Fördertechnik für Roboter
- o Landmaschinen
- o Nahrungsmittelindustrie
- o Textilmaschinen
- o u.a.

APPLICATION

- o Conveyors
- o Metal working machines
- o Feeding mechanism of robots and maipulators
- o Agricultural machines
- o Food industries
- o Textile machines
- o etc.

BAUWEISE UND AUSFÜHRUNGEN

- o Modell: Längsschieberventil, Planetensatz
- o Ovalflansch oder Quadratflansch
- o Anschlüsse: Seitlich, BSPP Gewinde
- o Wellen: Zylindrisch oder verzahnt

CONSTRUCTION AND OPTIONS

- o Model: Spool valve, gerotor
- o Ovalflange or squareflange
- o Ports: Side ports, BSPP threaded
- o Shafts: Straight or splined

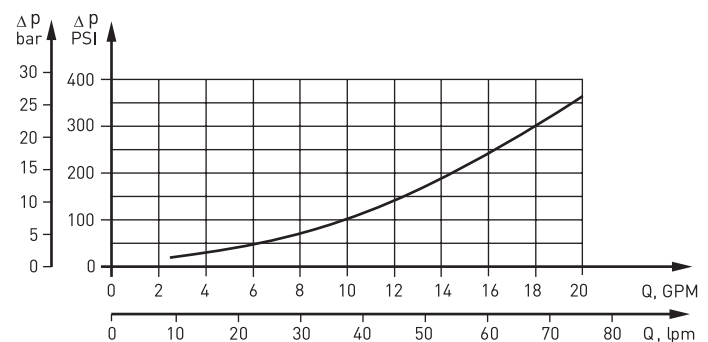
ÜBERSICHT OVERVIEW

| | | | | | |
|----------------------|-------------------------|--------------------|---------|------------------------|---|
| Max. Schluckvolumen | Max. Displacement | cm ³ /U | ccm/rev | [in ³ /rev] | 396,0 [24.16] |
| Max. Drehzahl | Max. Speed | U/min | rpm | | 1515 |
| Max. Drehmoment | Max. Torque | daNm | | [in/lb] | 46,0 [3240] |
| Max. Leistungsabgabe | Max. Output | kW | | [HP] | 17,5 [23.5] |
| Max. Druckgefälle | Max. Pressure drop | bar | | [PSI] | 175 [2540] |
| Max. Ölstrom | Max. Oil flow | l/min | lpm | [GPM] | 75 [20] |
| Min. Drehzahl | Min. Speed | U/min | rpm | | 10 |
| Hydrauliköl | Pressure fluid | | | | HLP (DIN 51524) oder or HM (ISO 6743/4) |
| Öltemperatur | Temperature range | ° C | | [° F] | -40 ÷ 140 [-40 ÷ 284] |
| Optimalviskosität | Optimal viscosity range | mm ² /s | | [SUS] | 20 ÷ 75 [98 ÷ 347] |
| Filtrierung | Filtration | | | | ISO code 20/16 (min. empfohlene Filtrierung recommended filtration 25 µm) |

ÖLSTROM LECKÖLLEITUNG OIL FLOW DRAIN LINE

| Druckgefälle Pressure drop bar [PSI] | Viskosität Viscosity mm ² /s [SUS] | Ölstrom Oilflow l/min lpm [GPM] |
|--|---|---------------------------------------|
| 100 [1450] | 20 [98] | 2,5 [.660] |
| | 35 [164] | 1,8 [.476] |
| 140 [2030] | 20 [98] | 3,5 [.925] |
| | 35 [164] | 2,8 [.740] |

DRUCKVERLUST PRESSURE LOSSES



TECHNISCHE DATEN

TECHNICAL DATA

Wellenoption C und CO Shaft option C and CO

| Typ Type | | SP 50 | SP 80 | SP 100 | SP 125 | SP 160 | SP 200 | SP 250 | SP 315 | SP 400 |
|---|---|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
| Schluckvolumen Displacement | cm ³ /U ccm/rev [in ³ /rev] | 49,5 [3.02] | 79,2 [4.83] | 99,0 [6.04] | 123,8 [7.55] | 158,4 [9.66] | 198,0 [12.10] | 247,5 [15.10] | 316,8 [19.30] | 396,0 [24.16] |
| Max. Drehzahl Max. Speed U/min RPM | Dauerbetrieb Continuous | 1210 | 755 | 605 | 486 | 378 | 303 | 242 | 190 | 150 |
| | Int. * Int. * | 1515 | 945 | 755 | 605 | 472 | 378 | 303 | 236 | 189 |
| Max. Drehmoment Max. Torque daNm [lb-in] | Dauerbetrieb Continuous | 9,4 [832] | 15,1 [1336] | 19,3 [1708] | 23,7 [2100] | 30,0 [2655] | 30,0 [2655] | 27,6 [2442] | 29,5 [2610] | 28,5 [2522] |
| | Int. * Int. * | 11,9 [1054] | 19,5 [1725] | 23,7 [2097] | 29,8 [2637] | 37,8 [3345] | 36,5 [3230] | 35,5 [3142] | 36,6 [4070] | 36,0 [3185] |
| | Spitze ** Peak ** | 14,0 [1240] | 22,0 [1947] | 27,0 [2390] | 36,5 [3230] | 42,0 [3717] | 53,0 [4700] | 54,0 [4780] | 59,0 [5222] | 59,0 [5222] |
| Max. Leistungsabgabe Max. Output kW [HP] | Dauerbetrieb Continuous | 9,9 [13.30] | 9,9 [13.30] | 9,9 [13.30] | 9,9 [13.30] | 9,9 [13.30] | 9,5 [12.70] | 6,0 [8.10] | 4,0 [5.40] | 3,0 [4.00] |
| | Int. * Int. * | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 13,2 [17.70] | 5,8 [7.80] | 5,0 [6.70] |
| Max. Druckgefälle Max. Pressure drop bar [PSI] | Dauerbetrieb Continuous | 140 [2030] | 140 [2030] | 140 [2030] | 140 [2030] | 140 [2030] | 115 [1670] | 85 [1233] | 70 [1015] | 55 [798] |
| | Int. * Int. * | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 140 [2030] | 110 [1450] | 90 [1305] | 70 [1015] |
| | Spitze ** Peak ** | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 180 [2610] | 160 [2320] | 130 [1885] |
| Max. Ölstrom Max. Oil flow l/min lpm [GPM] | Dauerbetrieb Continuous | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] |
| | Int. * Int. * | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] |
| Max. Eingangsdruck Max. Inlet pressure bar [PSI] | Dauerbetrieb Continuous | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] |
| | Int. * Int. * | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] |
| | Spitze ** Peak ** | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] |
| Max. Anlaufdruck mit unbelasteter Welle Max. Starting pressure with unloaded shaft | bar [PSI] | 10 [145] | 10 [145] | 10 [145] | 9 [131] | 8 [116] | 7 [100] | 6 [87] | 5 [73] | 5 [73] |
| Min. Anlaufmoment Min. Starting torque | daNm [lb-in] | 7,7 [681] | 14,0 [1240] | 16,8 [1487] | 21,0 [1860] | 28,0 [2478] | 28,5 [2522] | 26,5 [2345] | 26,5 [2345] | 26,5 [2345] |

* Intermittierend: Betrieb max. 10% pro Minute

** Spitze: max. 1% pro Minute

○ Intermittierende Druckgefälle und Ölströme dürfen nicht gleichzeitig erreicht werden.

○ Minimale Viskosität 13 mm²/s [70 SUS] bei 50 °C [122 °F]

○ Maximale Öltemperatur während des Betriebs 82 °C [180 °F]

○ Die Lebensdauer der Motoren kann erhöht werden, wenn die Antriebswelle 10-15 Minuten vor voller Belastung frei läuft.

* Intermittent: Working max. 10% per minute

** Peak: max. 1% per minute

○ Int. speed and pressure should not occur simultaneously.

○ Recommended min. oil viscosity 13 mm²/s [70 SUS] at 50 °C [122 °F]

○ Recommended max. system operating temperature is 82 °C [180 °F]

○ To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

TECHNISCHE DATEN

TECHNICAL DATA

Wellenoption SH Shaft option SH

| Typ Type | | SP 50 | SP 80 | SP 100 | SP 125 | SP 160 | SP 200 | SP 250 | SP 315 | SP 400 |
|---|---|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|
| Schluckvolumen Displacement | cm ³ /U ccm/rev [in ³ /rev] | 49,5 [3.02] | 79,2 [4.83] | 99,0 [6.04] | 123,8 [7.55] | 158,4 [9.66] | 198,0 [12.10] | 247,5 [15.10] | 316,8 [19.30] | 396,0 [24.16] |
| Max. Drehzahl Max. Speed U/min RPM | Dauerbetrieb Continuous | 1210 | 755 | 605 | 486 | 378 | 303 | 242 | 190 | 150 |
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| Max. Drehmoment Max. Torque daNm [lb-in] | Dauerbetrieb Continuous | 9,4 [832] | 15,1 [1336] | 19,3 [1708] | 23,7 [2100] | 30,0 [2655] | 36,6 [3240] | 38,0 [3360] | 38,0 [3360] | 36,0 [3190] |
| | Int. * Int. * | 11,9 [1054] | 19,5 [1725] | 23,7 [2097] | 29,8 [2637] | 37,8 [3345] | 45,6 [4035] | 45,0 [3980] | 46,0 [4035] | 46,0 [4035] |
| | Spitze ** Peak ** | 14,0 [1240] | 22,0 [1947] | 27,0 [2390] | 36,5 [3230] | 42,0 [3717] | 53,0 [4700] | 67,0 [5930] | 85,0 [7523] | 85,0 [7523] |
| Max. Leistungsabgabe Max. Output kW [HP] | Dauerbetrieb Continuous | 9,9 [13.30] | 9,9 [13.30] | 9,9 [13.30] | 9,9 [13.30] | 9,9 [13.30] | 10,3 [13.80] | 8,0 [10.70] | 6,0 [8.10] | 4,8 [6.40] |
| | Int. * Int. * | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 12,5 [16.80] | 15,3 [20.50] | 17,5 [23.50] | 8,2 [10.90] | 9,2 [12.30] |
| Max. Druckgefälle Max. Pressure drop bar [PSI] | Dauerbetrieb Continuous | 140 [2030] | 140 [2030] | 140 [2030] | 140 [2030] | 140 [2030] | 140 [2030] | 110 [1450] | 90 [1305] | 70 [1015] |
| | Int. * Int. * | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 140 [2030] | 140 [2030] | 90 [1305] |
| | Spitze ** Peak ** | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 180 [2610] |
| Max. Ölstrom Max. Oil flow l/min lpm [GPM] | Dauerbetrieb Continuous | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] | 60 [16.0] |
| | Int. * Int. * | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] | 75 [20.0] |
| Max. Eingangsdruck Max. Inlet pressure bar [PSI] | Dauerbetrieb Continuous | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] | 175 [2540] |
| | Int. * Int. * | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] | 200 [2900] |
| | Spitze ** Peak ** | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] | 225 [3260] |
| Max. Anlaufdruck mit unbelasteter Welle Max. Starting pressure with unloaded shaft | bar [PSI] | 10 [145] | 10 [145] | 10 [145] | 9 [131] | 8 [116] | 7 [100] | 6 [87] | 5 [73] | 5 [73] |
| Min. Anlaufmoment Min. Starting torque | daNm [lb-in] | 7,7 [681] | 14,0 [1240] | 16,8 [1487] | 21,0 [1860] | 28,0 [2478] | 34,6 [3062] | 34,5 [3050] | 35,0 [3098] | 35,0 [3098] |

- * Intermittierend: Betrieb max. 10% pro Minute
- ** Spitze: max. 1% pro Minute
- Intermittierende Druckgefälle und Ölströme dürfen nicht gleichzeitig erreicht werden.
- Minimale Viskosität 13 mm²/s [70 SUS] bei 50 °C [122 °F]
- Maximale Öltemperatur während des Betriebs 82 °C [180 °F]
- Die Lebensdauer der Motoren kann erhöht werden, wenn die Antriebswelle 10-15 Minuten vor voller Belastung frei läuft.

- * Intermittent: Working max. 10% per minute
- ** Peak: max. 1% per minute
- Int. speed and pressure should not occur simultaneously.
- Recommended min. oil viscosity 13 mm²/s [70 SUS] at 50 °C [122 °F]
- Recommended max. system operating temperature is 82 °C [180 °F]
- To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

BESTELLCODE ORDER CODE

| | | | | | | |
|----|---|---|---|---|---|---|
| SP | 1 | 2 | 3 | 4 | 5 | 6 |
|----|---|---|---|---|---|---|

| | |
|--------------|--|
| 1. | Montageflansch Mounting flange |
| frei omit | Ovalflansch, zwei Befestigungslöcher Oval mount two holes |
| Q | Quadratflansch, vier Gewindebohrungen Square mount four bolts |
| 2. | Schluckvolumen Displacement |
| 50 | 49,5 cm ³ /U ccm/rev. [3.02 in ³ /rev] |
| 80 | 79,2 cm ³ /U ccm/rev. [4.83 in ³ /rev] |
| 100 | 99,0 cm ³ /U ccm/rev. [6.04 in ³ /rev] |
| 125 | 123,8 cm ³ /U ccm/rev. [7.55 in ³ /rev] |
| 160 | 158,4 cm ³ /U ccm/rev. [9.66 in ³ /rev] |
| 200 | 198,0 cm ³ /U ccm/rev. [12.10 in ³ /rev] |
| 250 | 247,5 cm ³ /U ccm/rev. [15,10 in ³ /rev] |
| 315 | 316,8 cm ³ /U ccm/rev. [19.30 in ³ /rev] |
| 400 | 396,0 cm ³ /U ccm/rev. [24.16 in ³ /rev] |

| | |
|-----------|--|
| 3. | Abtriebswelle (Zul. Momentabgabe darf nicht überschritten werden) Shaft (Permissible output torque should not be exceeded) |
| C | Zylindrisch Ø25, Passfeder A8x7x30 DIN6885 Straight Ø25, parallel key A8x7x30 DIN6885 |
| CO | Zylindrisch Ø1", Passfeder 1/4"x1/4"x1" BS246 Straight Ø1", parallel key 1/4"x1/4"x1" BS246 |
| SH | Verzahnt Ø25,32 BS2059 (SAE 6 B) Splined Ø25,32, BS2059 (SAE 6 B) |

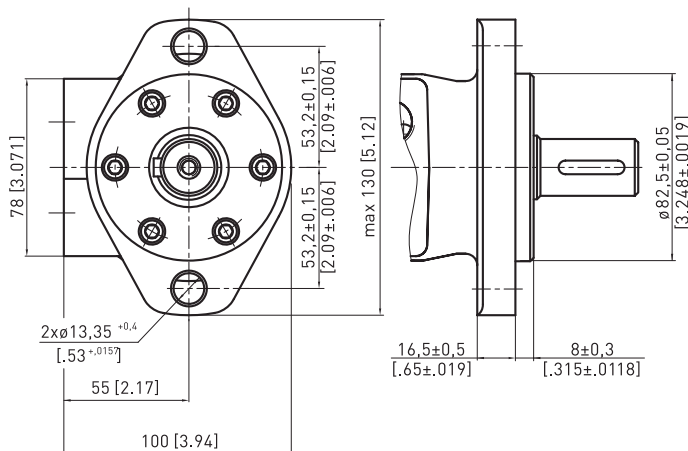
| | |
|--------------|---|
| 4. | Version Wellendichtung Shaft seal version |
| frei omit | Standard Wellendichtung Standard shaft seal |
| U | Hochdruck Wellendichtung High pressure shaft |

| | |
|-----------|--|
| 5. | Sonderausführungen Special features |
| R | Drehrichtung umgedreht Reverse rotation |
| P | Lackiert (Farbe auf Anfrage) Paint (colour on request) |
| PC | Korrosionsschutzfarbe (Farbe auf Anfrage) Corrosion protected paint (colour on request) |

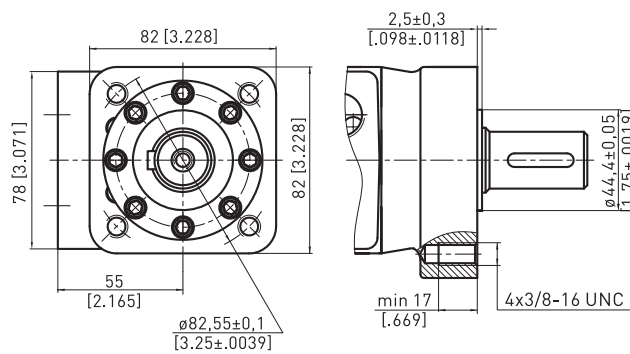
| | |
|--------------|--|
| 6. | Design Serie Design series |
| frei omit | Betriebspezifisch Factory specified |

1. MONTAGEFLANSCH 1. MOUNTING FLANGE

Standard: Ovalflansch, 2 Befestigungslöcher
Standard: Oval mount, 2 holes

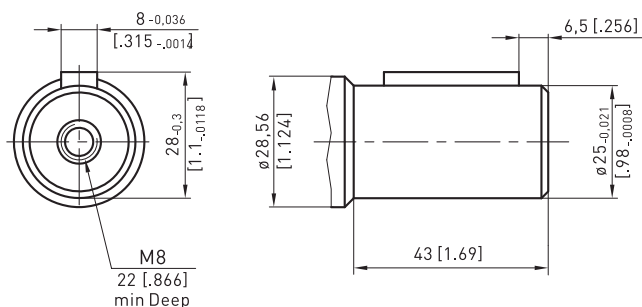


Option Q: Quadratflansch, 4 Gewindebohrungen
Option Q: Square mount, 4 bolts

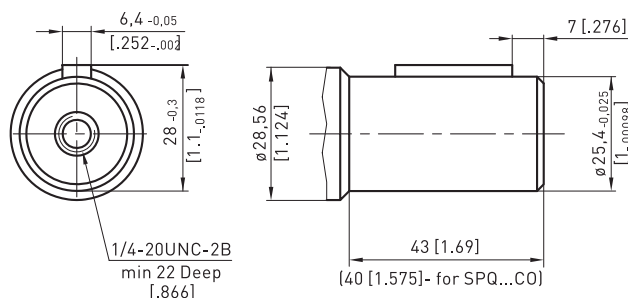


3. ABTRIEBSWELLE 3. SHAFT

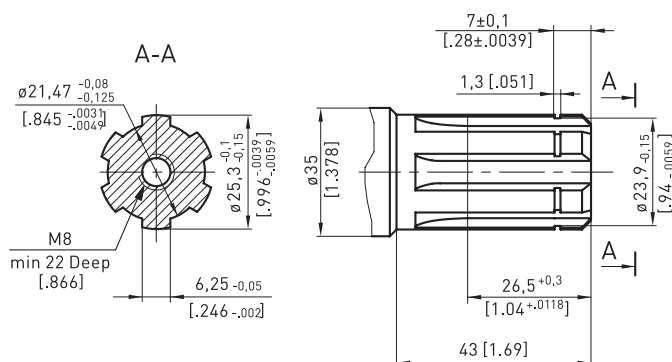
Option C: Zylindrisch Ø25 mm
Option C: Straight Ø 25 mm



Option CO: Zylindrisch Ø1"
Option CO: Straight Ø1"



Option SH: Verzahnt SAE 6 B
Option SH: Splined SAE 6 B

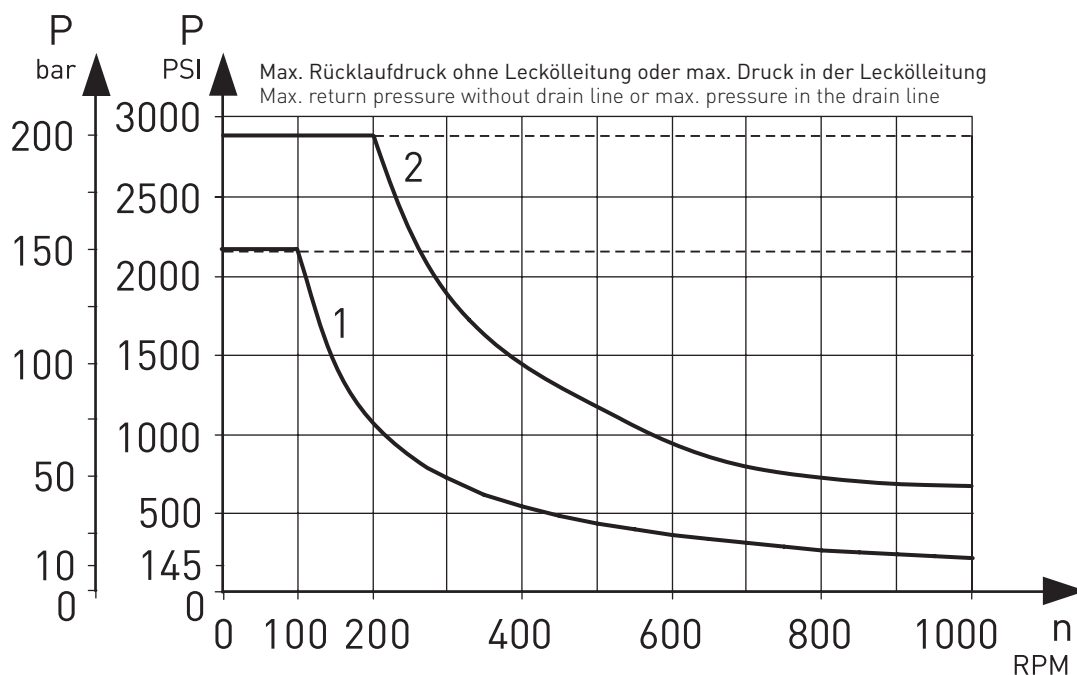


Zulässige Drehmomentabgabe
Permissible output torque

| Zulässige Drehmomentabgabe je nach Wellentyp Permissible output torque based on shaft type daNm [lb-in] | | |
|---|--------------|--------------|
| C | CO | SH |
| 34 [3010] | 34 [3010] | 40 [3540] |

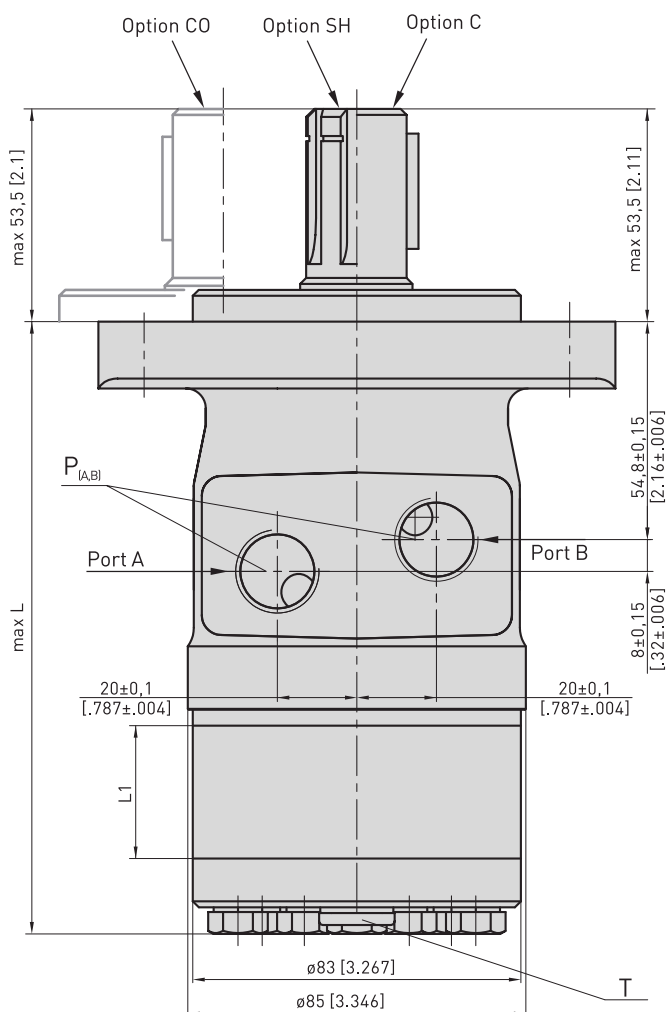
4. VERSION WELLENDICHTUNG 4. SHAFT SEAL VERSION

Max. Druck auf die Wellendichtung
Max. permissible shaft seal pressure



EINBAUMAß DIMENSION

Montageflansch Option Standard Mounting flange option standard



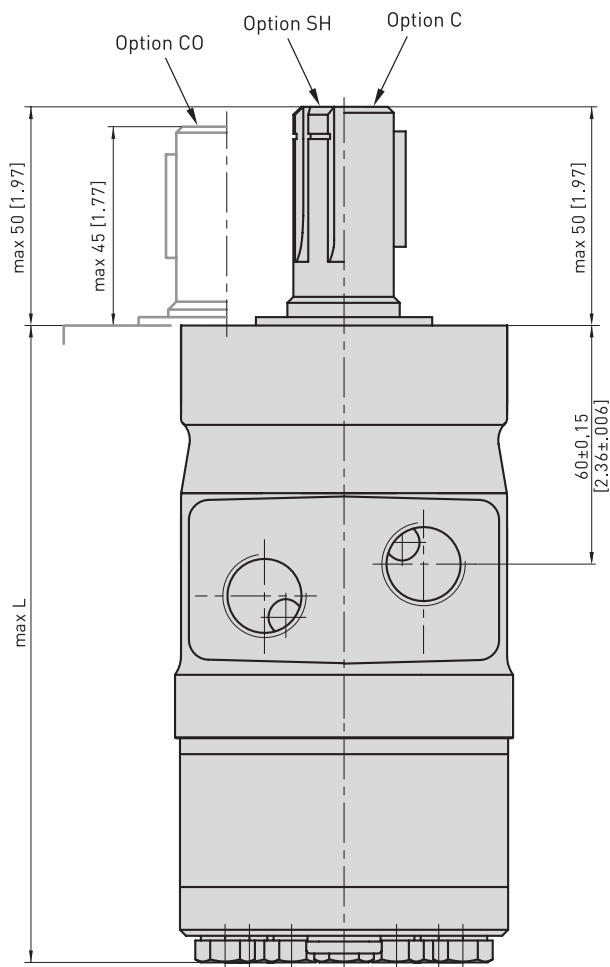
Standarddrehung
mit Blick auf Abtriebswelle
Druck auf Anschluss A - rechtsdrehend
Druck auf Anschluss B - linksdrehend

Reversierdrehung (5. - Option R)
mit Blick auf Abtriebswelle
Druck auf Anschluss A - linksdrehend
Druck auf Anschluss B - rechtsdrehend

Standard rotation
Viewed from shaft end
Port A pressurised- right running
Port B pressurised- left running

Reverse rotation (5. - Option R)
Viewed from shaft end
Port A pressurised- left running
Port B pressurised- right running

Montageflansch Option Q Mounting flange option Q



P (A,B): 2xG1/2 - 18mm [.709 in] tief deep
T: G1/4 - 8,5 mm [.47 in] tief deep

| Typ Type | L, mm [in] | Typ Type | L, mm [in] | L ₁ , mm [in] |
|----------|--------------|----------|--------------|--------------------------|
| SP 50 | 128,0 [5.04] | SP-Q 50 | 134,0 [5.28] | 6,67 [.26] |
| SP 80 | 132,0 [5.19] | SP-Q 80 | 138,0 [5.43] | 10,67 [.42] |
| SP 100 | 134,5 [5.29] | SP-Q 100 | 140,9 [5.55] | 13,33 [.52] |
| SP 125 | 138,0 [5.43] | SP-Q 125 | 144,0 [5.67] | 16,67 [.66] |
| SP 160 | 142,5 [5.61] | SP-Q 160 | 148,9 [5.86] | 21,33 [.84] |
| SP 200 | 148,0 [5.83] | SP-Q 200 | 154,0 [6.06] | 26,67 [1.05] |
| SP 250 | 154,5 [6.08] | SP-Q 250 | 160,9 [6.33] | 33,33 [1.31] |
| SP 315 | 164,0 [6.46] | SP-Q 315 | 170,0 [6.69] | 42,67 [1.68] |
| SP 400 | 174,5 [6.87] | SP-Q 400 | 180,9 [7.12] | 53,33 [2.10] |

WEITERE TECHNISCHE INFORMATIONEN FURTHER TECHNICAL INFORMATION

Zulässige Wellenbelastung SP Permissible shaft load SP

Die zulässige radiale Wellenbelastung P_{rad} hängt ab von den Drehzahlen (n) und Abstand (L) zwischen dem Angriffspunkt der Last und dem Befestigungsflansch.

The permissible radial shaft load P_{rad} depends on the speed (n) and the distance (L) from the point of load to the mounting flange and shaft version.

Montageflansch Option Standard Mounting flange option standard

$$P_{rad} = \frac{800}{n} \times \frac{24300}{91,5+L} [\text{daN}]^*$$

$$\left[\frac{800}{\text{RPM}} \times \frac{2150}{3.6+L} \right] [\text{lbs}]$$

* $n \leq 200$ U/min RPM: Max $P_{rad} = 800$ daN [1800 lbs]
 $n \geq 200$ U/min RPM: $L < 55$ mm [2.2 in]

Montageflansch Option Q Mounting flange option Q

$$P_{rad} = \frac{800}{n} \times \frac{24300}{97,5+L} [\text{daN}]^*$$

$$\left[\frac{800}{\text{RPM}} \times \frac{2150}{3.84+L} \right] [\text{lbs}]$$

* $n \leq 200$ U/min RPM: Max $P_{rad} = 800$ daN [1800 lbs]
 $n \geq 200$ U/min RPM: $L < 55$ mm [2.2 in]

Radiale Wellenbelastung P_{rad} für Wellenoptionen C und CO bei $L=30$ mm [1.18 in] [24 mm [.94 in]]
 Radial shaft load P_{rad} for shaft options C and CO at $L=30$ mm [1.18 in] [24 mm [.94 in]]

