

Availability / Verfügbarkeit				Code		Description / Beschreibung
				Painted	Unpainted	
TC	TB	TE	TJ	Lackiert	UnLackiert	Description / Beschreibung
x	x	x	x	AAAA	AAAB	Standard seals
x	x ⁷	x ⁷		AAJV	AANC	Bidirectional shuttle 3:30
				AABT	-	No nut
x	x ⁷	x ⁷	x	BBDF	BBDM	53 Bar (761 PSI) Internal Bidirectional Relief
x	x ⁷	x ⁷	x	BBCV	-	64 Bar (921 PSI) Internal Bidirectional Relief
x				-	BBCE	83 Bar (1200 PSI) Internal Bidirectional Relief, Fluorocarbon (Viton) shaft seals
x ³	x ⁷		x	BBCR	BBCP	100 Bar (1450 PSI) Internal Bidirectional Relief
x ³	x ⁷	x ⁷	x	-	BBCT	108 Bar (1560 PSI) Internal Bidirectional Relief
x		x		AAAC	-	Double Paint / Zweischichten – Lackierung
	x ⁶	x ⁶	x	AAAF	AABP	Castle Nut / Kronenmutter
x	x	x	x	AAAG	AAAH	Fluorocarbon Seals / Fluorocarbon Dichtungen
x	x	x	x	AAAJ	AAFG	High Temperature Commutator Seal / Kommutatordichtung fuer hohe Temperaturen
x ¹	x ¹	x ¹	x ¹	AABJ	AABK	Free Running Rotorset / Leichtläufer-Rotorsatz
	x ¹	x ¹		AABL	AABM	Free Running Rotorset, No Commutator Seal
	x	x	x	AAFW	AAFA	High Temperature Commutator Seals, Fluorocarbon Seals
			x	AAFB	AANG	High Temperature Commutator Seal, Castle Nut
				AAPL	-	Fluorocarbon Seals, Castle Nut, Black Paint
x				AAUA	-	Double Paint, Free Running Rotorset
				-	AAXD	Fluorocarbon Seals, No Commutator Seal, No Paint
	x	x		FSAA	FSAB	Speed Sensor / Drehzahl-Sensor
	x ^{5,7}	x ²	x ²	BBFZ	BBCN	140 Bar (2030 PSI) Internal Bidirectional Relief / Internes Schockventil
x ⁴	x ^{2,7}	x ⁷	x	BBDY	BBCK	120 Bar (1740 PSI) Internal Bidirectional Relief Internes Schockventil
x ²	x ⁷	x ⁷	x	BBGA	BBCM	83 Bar (1200 PSI) Internal Bidirectional Relief / Internes Schockventil
	x ⁸	x ⁸		HAAA	HAAB	Adjustable external Relief Valve / Schockventil (einstellbar)
	x	x		-	AAUY	Nickel Plated Except Shaft
Consult factory for other positions and combinations. / Weitere Optionen nach Rücksprache verfügbar						

¹ Not applicable to 0365 or 0390 displacements

² Not available in 0330, 0365 or 0390 displacements

³ Not available in 0260, 0295, 0330, 0365 or 0390 displacements

⁴ Not available in 0230, 0260, 0295, 0330, 0365 or 0390 displacements

⁵ Not available with 0230, 0295, 0330, 0365 or 0390 displacements

⁶ Only available with 25 shaft

⁷ Not available with R or Y ports

⁸ Only available with M ports

Code: AAAA
 Black Paint

Code: AAAA
 Schwarz lackiert

Code: AAAB
 No Paint

Code: AAAB
 No Paint

Code: AAAC
 Double Paint — Base coat of red oxine primer and finish coat of black paint for increased corrosion resistance.

Code: AAAC
 Zweischichtlackierung schwarz

Code AAAF* or AABP
Castle Nut — All motors ordered with Tapered shafts are equipped with patch locking nuts. If desired, a castle nut may be specified.

Code AAAF* or AABP
 Kronenmutter
 Selbstsichernde Mutter wird ersetzt durch Kronenmutter

Code: AAAJ* or AAFG
 High Temperature Commutator Seal — Under conditions of high temperature, it is suggested that a high temperature commutator seal be used.

Code: AAAJ* or AAFG
Kommutatordichtung fuer hohe Temperaturen — Bei hohen Temperaturen des Hydraulikoels wird empfohlen die Kommutatordichtung fuer hohe Temperaturen einzusetzen!

Code: AAAG* or AAAH
Fluorocarbon — is available under various registered trademarks, including **VITON™** (a registered trademark of DuPont), **FLUOREL™** (a registered trademark of 3M) or **FPM™** (a registered trademark of DuPont).

Code: AAAG* or AAAH
 Fluorocarbon Dichtungen
 Für Anwendungen im höheren/niedrigeren Temperaturbereich oder speziellen Flüssigkeiten wird der Einsatz von Fluorcarbon Dichtungen empfohlen. Fluorocarbon ist bekannt unter verschiedenen eingetragenen Warenzeichen
 VITON™ - DuPont, Fluorel™ - 3M, FPM™ - DuPont

Code: AABJ* or AABK
 Free Running Rotorset — The “free running rotorset” is a specially dimensioned rotorset that allows for smooth operation at low flows and low pressure. Volumetric efficiency can be affected.

Code: AABJ* or AABK
 Leichtläufer Rotorsatz
 Anlaufdruck < 5 bar

* Option code shown is with a single black coat of paint.
 * Code: Motor schwarz grundiert
 * Le code d’option montré correspond à une seule couche de peinture noire.
 * El código de la opción mostrado es con una sola capa de pintura negra.

Code: FSAA* or FSAB

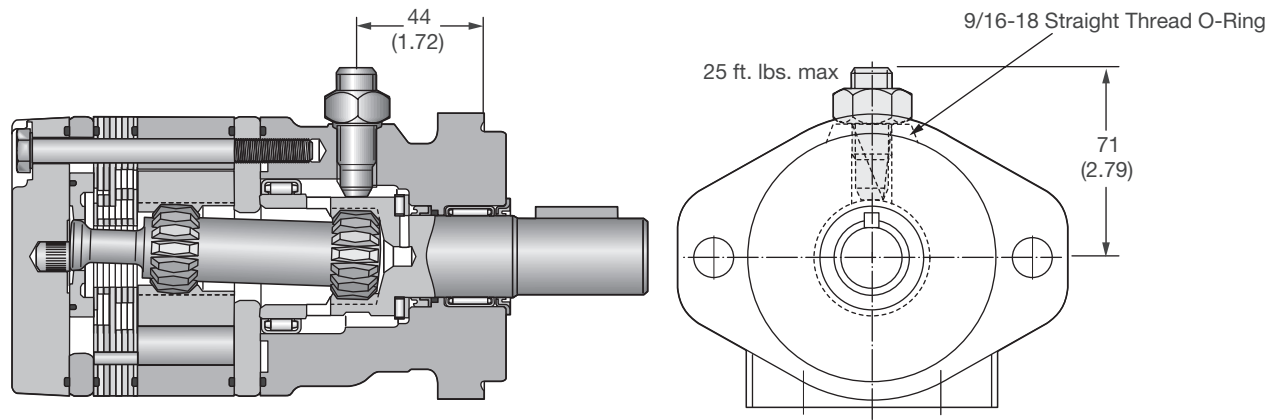
An Economical Sensor for Speed Readout

This rugged, weather resistant design is ideal for industrial and mobile applications. Applications include salt/sand/fertilizer spreader drives, conveyer drives and injection molder compression drives. The sensor is a hall-effect type, which when externally powered outputs 30 square wave digital pulses per coupling shaft revolution. The connector is a user friendly universally available 4 pin polarized M12 connector allowing for simplified field service. The integrated design does not effect the side load capacity or performance of the torque motor.

Dieser robuste, wetterfeste Drehzahlaufnehmer arbeitet nach dem Halleffekt. Es werden 30 Rechteckimpulse pro Abtriebswellenumdrehung erzeugt. Durch Erfassung der positiven und negativen Wellenflanken sind 60 Impulse pro Umdrehung möglich. Der Sensor führt zu keiner Leistungsbeschränkung des Motors. Die volle Radiallastkapazität bleibt erhalten.

Un capteur économique pour mesure de la vitesse. Ce capteur robuste et résistant aux intempéries est à effet Hall. Alimenté par une source externe, il fournit 30 ondes digitales carrées par tour. Par multiplication électronique on obtient 60 pulsations par tour. Son montage ne modifie pas le couple ni la charge radiale du moteur qui le reçoit.

Este es un diseño de construcción reforzada, apto para uso a la intemperie e ideal para uso industrial y en equipos móviles. Entre sus aplicaciones, se puede mencionar esparcidores de sal, arena o fertilizantes, unidades motoras de transportadores y unidades motoras de compresión para moldeado a inyección. El sensor es del tipo de medio efecto, que al ser excitado externamente, genera 30 pulsos digitales de onda cuadrada por cada revolución del eje del acoplamiento. Utiliza un simple conector M12 polarizado tetrapolar, que es de uso común y facilita el mantenimiento en el lugar de instalación. El diseño integrado no afecta la capacidad de carga lateral ni la potencia del motor de torque.

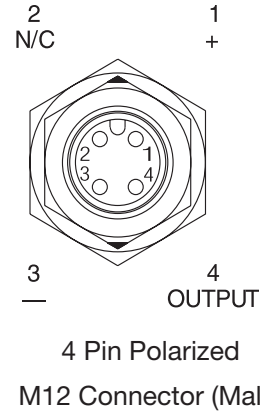


- * Option code FSAA is with a single black coat of paint.
- * Code FSAA: Motor schwarz grundiert
- * Le code d'option montré correspond à une seule couche de peinture noire.
- * El código de la opción mostrado es con una sola capa de pintura negra.

US equivalents for metric specifications are shown in ().

006 Light Duty Options.indd, js

Operating voltage range Versorgungsspannung Gamme de tension de service Gama de voltaje de alimentacion	4.5...24 VDC
Operating temperature Arbeitstemperatur Temperature de service Temperatura de servicio	-20° to 220° F -29° ...104° C
Operating frequency range Arbeitsfrequenz Gamme de frequences de service Gama de frecuencia de servicio	0...10 KHZ
Max sink current Erforderlicher Laststrom Courant d'affaissement maxi Corriente maxima de alimentacion	0 ... 20 mA (max.)
Connection Anschluß Branchement Conexion	4 Pin Polarized (12mm)
Sensor output Sensorausgang Sortie du détecteur Salida del sensor	30 Pulses per revolution which can be doubled electronically 30 impulsions par revolution pouvant etre doublees electroniquement 30 pulsos por revolucion, que pueden duplicarse electronicamente
Output is NPN Ausgang is NPN La sortie est NPN La salida es NPN	Open Collector

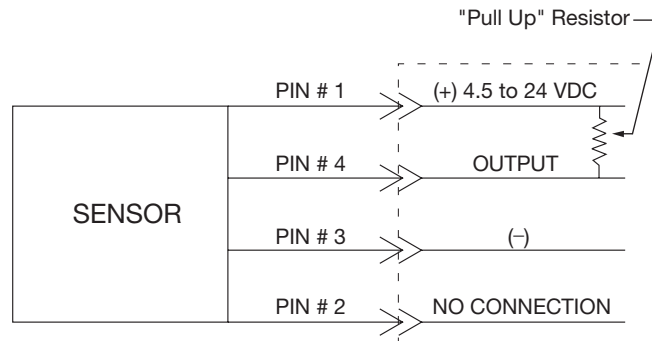


Cable and "Pull Up" Resistor are not supplied by factory.

Zubehör wie z.B. Kabel gehören nicht zum Lieferumfang

Le câble et la résistance "Pull Up" ne sont pas fournis par l'usine.

El cable y la resistencia de arranque no se suministran originalmente de fábrica.



Pull-up Resistor Value Formula

Formel zur Ermittlung des Pull up-Widerstandes

Formule de la valeur de resistance Pull-up
 Calculo de la resistencia de carga

(0.25 Watt, 5% de tol.)
 (0.25 Watt, Tol. 5%)
 (0.25 Watt 5% Tol.)
 (0.25 Watt, toll. 5%)

Voltage / Spannung

Courant d'affaissement/
 Voltaje

4.5...24 VDC

Sink Current / Laststrom
 Resistance / Corriente de alimentacion

0...20 mA

= Resistor
 Widerstand
 Resistance
 Resistencia (k Ohm)

Status: Offstate / aus
 Etat: Arret / Estado: Inactivo
 (95% +V)

+ V

Status: Onstate / ein
 Etat: Marche / Estado: Activo
 (max. 0.4 VDC)

0 V

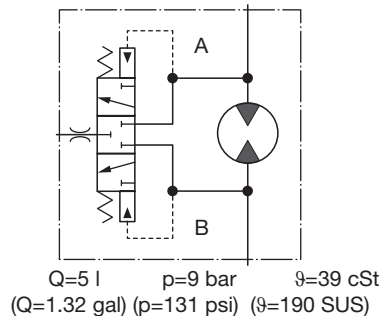
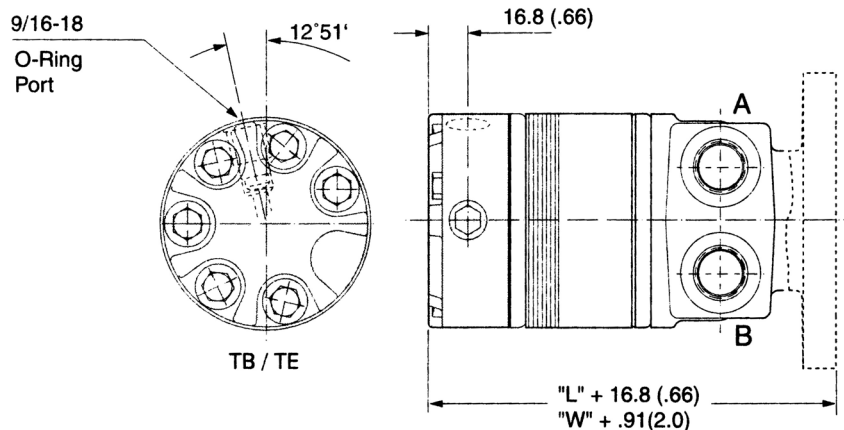
Code: AANC or AAJV*

A Hot Oil Shuttle is used to continuously remove a portion of the fluid in a closed loop transmission or other closed loop system. At 125 PSI pressure differential between the motor return port and the shuttle outlet, 1.5 GPM will exit the circuit to cool, filter and return to the reservoir. The constant loop replenishment helps to keep heat and contamination from building up in the circuit.

Spülventil für geschlossene Systeme zur Rückführung einer definierten Menge des Niederdrucköls in den Tank zur Abkühlung innerhalb desselben Kreislaufs.

Valve de rincage pour systèmes fermés pour le retour d'un volume déterminé de fluide basse pression vers le réservoir, un refroidisseur ou un filtre de réfrigération, dans le même circuit.

Un transferidor de aceite caliente actúa permanentemente para extraer una parte del fluido en una transmisión de circuito cerrado u otro sistema de circuito cerrado. Entre la entrada de retorno del motor y la salida del transferidor hay una diferencia de presión de 125 psi (libras/pulg.²), y a esta presión salen 1,5 galones por minuto del circuito para enfriarse, filtrarse y volver al depósito de fluido. El reacondicionamiento permanente de parte del fluido evita la contaminación del mismo y el incremento de temperatura en el circuito.



- * Option code AAJV is with a single black coat of paint
- * Code AAJV: Motor schwarz grundiert
- * Le code d'option moneté correspond à une seule couche de peinture noire
- * El código de la opción mostrado es con una sola capa de pintura negra

English equivalents for metric specifications are shown in ().

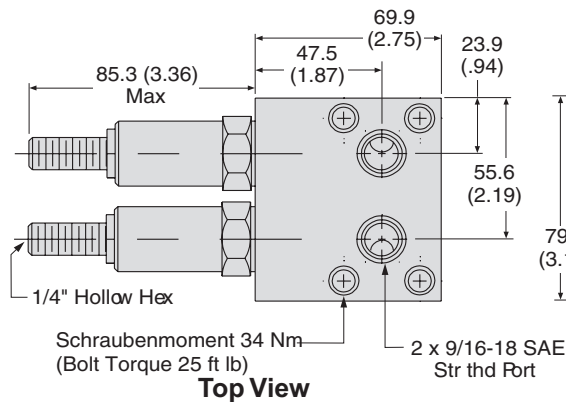
Code: HAAA* or HAAB

Specifications

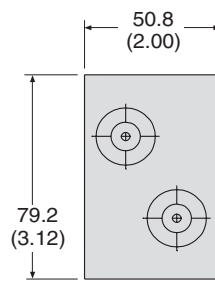
- **Rated flow** — 20 gpm
- **Max. Operating Pressure** — adjustable up to 3500 psi, factory preset at 1750 psi.
- **Reseat Pressure** — 90% of set pressure
- **Operating Temperature Range:** -40°F to 250°F
- **Cartridge Material** — All parts steel. All operating parts hardened steel.
- **Body Material** — Steel

Einsatzdaten

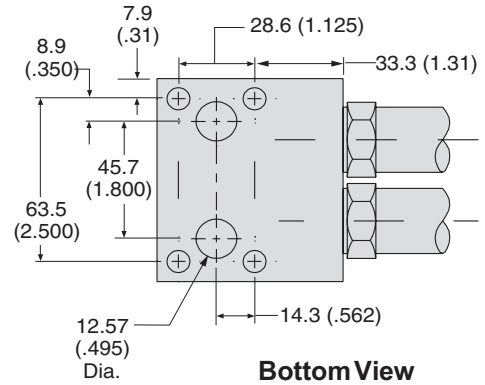
- Max. Fluß 76l/min.
- Max. Druck 240 bar (Voreinstellung 120 bar)
- Hysteresis 90% des Öffnungsdrucks
- Betriebstemperatur - 40°C bis 115°C
- Ventil in Stahlausführung
- Code für Ausführung schwarz grundiert



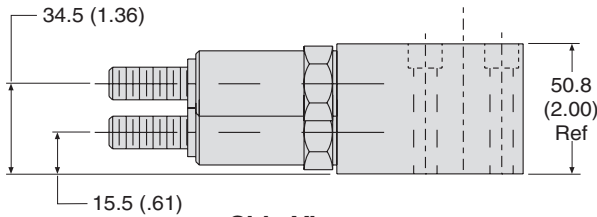
Top View



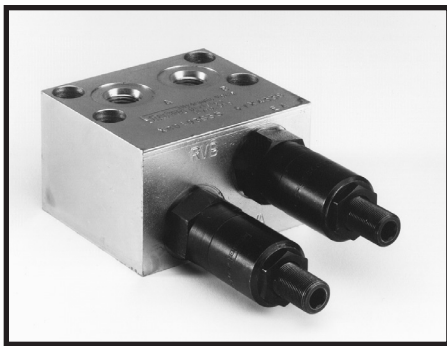
Rear View



Bottom View



Side View



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English equivalents for metric dimensions are shown in ().

006 Light Duty Options.indd, js

Spécifications

- **Débit nominal** – 75,7 litres/minute (20 gallons/minute)
- **Pressure de service maximale** – ajustable jusqu'à 246 kg/cm² (3 500 ppo²), préréglée à l'usine à 123 kg/cm² (1 750 ppo²).
- **Pression de rajustage** – 90% de la pression de consigne
- **Gamme des températures de service** – de - 40° C à 121° C (-40° F à 250° F).
- **Matériau de la cartouche** – Entièrement en acier. Toutes les pièces de service en acier durci.
- **Matériau du corps** – Acier

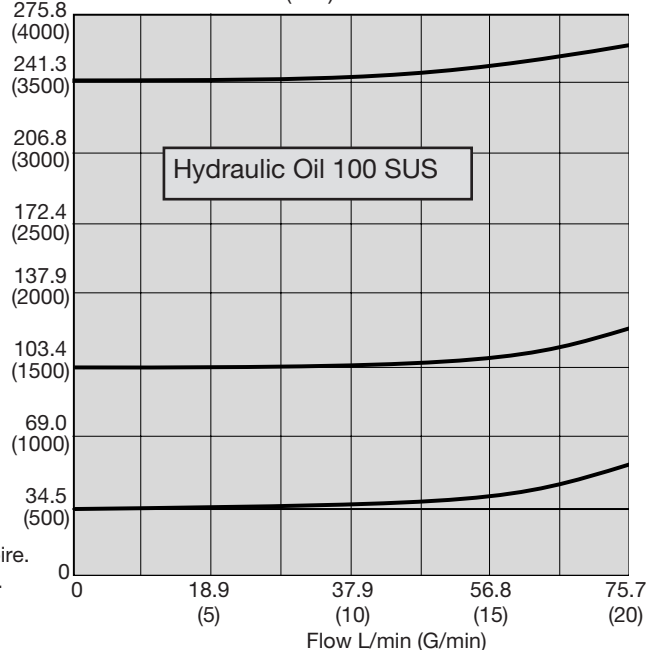
Especificaciones técnicas

- **Caudal:** 20 galones/minuto
- **Presión máxima de servicio:** regulable hasta 3.500 libras/pulg.². Regulada de fábrica a 1.750 libras/pulg.².
- **Presión de reasentamiento:** 90% de la presión calibrada.
- **Gama de temperatura de servicio:** - 40° F a 250° F
- **Material del cartucho:** todas las partes son de acero. Todas las partes activas son de acero templado.
- **Material del cuerpo:** acero

Performance Curve

Flow vs. Pressure

Inlet Pressure- bar (PSI)



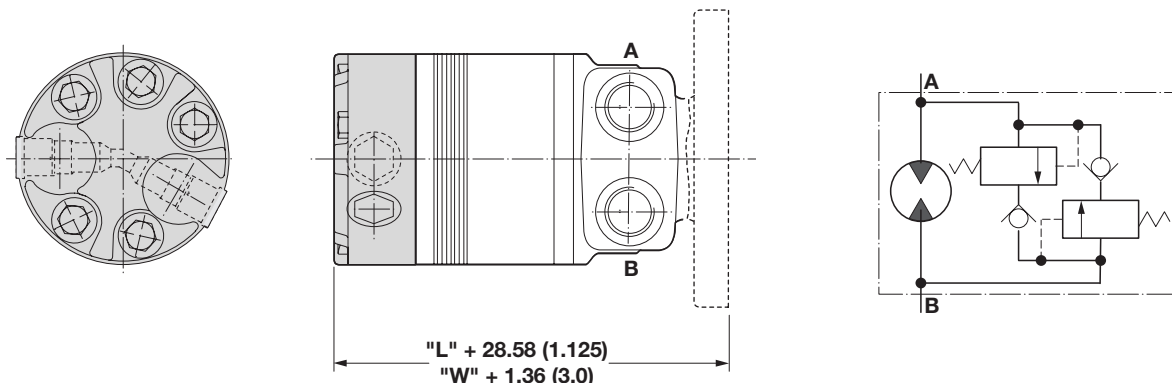
Code: Bidirectional Relief Valves

This integrated internal relief valve is used for fixed pressure settings.

Internes Schockventil mit festen Einstelldrucken

La soupape de sécurité interne s'utilise pour des valeurs de pression fixes.

La valvula interna de alivio se utiliza para cabliraciones fijas de presion.



Code	Description	TC	TB	TE	TJ
BBCM	83 Bar / 1200 PSI Int Bidirectional Relief, No paint	x ²	x ⁷	x ⁷	x
BBCN	140 Bar / 2030 PSI Int Bidirectional Relief, No paint		x ⁷	x ²	x ²
BBCP	100 Bar / 1450 PSI Int Bidirectional Relief, No paint	x ³	x ⁷	x ⁷	x
BBCR	100 Bar / 1450 PSI Int Bidirectional Relief, Black paint	x ³	x ⁷	x ⁷	x
BBCT	108 Bar / 1560 PSI Int Bidirectional Relief, No paint	x ³	x ^{1,7}	x ⁷	x
BBCV	64 Bar / 921 PSI Int Bidirectional Relief, Black paint	x	x ⁷	x ⁷	x
BBCK	120 Bar / 1740 PSI Int Bidirectional Relief, No paint	x ⁴	x ^{2,7}	x ⁷	x
BBCE	83 Bar / 1200 PSI Int Bidirectional Relief, Flourocarbon (Viton) Seals, No Paint				
BBDE	150 Bar / 2175 PSI Int Bidirectional Relief, Flourocarbon (Viton) Seals, No paint				
BBDF	53 Bar / 761 PSI Int Bidirectional Relief, Black paint	x	x ⁷	x ⁷	x
BBDM	53 Bar / 761 PSI Int Bidirectional Relief, No paint	x	x ⁷	x ⁷	x
BBDT	150 Bar / 2175 PSI Int Bidirectional Relief, No paint				
BBDY	120 Bar / 1740 PSI Int Bidirectional Relief, Black paint	x ⁴	x ^{5,7}	x ⁷	x
BBGA	83 Bar / 1200 PSI Bar Int Bidirectional Relief, Black Paint	x ²	x ⁷	x ⁷	x
BBFZ	140 Bar / 2030 PSI Bar Int Bidirectional Relief, Black Paint		x ^{5,7}	x ²	x ²

¹ Not applicable to 0365 or 0390 displacements - Nicht verfügbar für 0365 und 0390

² Not available in 0330, 0365 or 0390 displacements

³ Not available in 0260, 0295, 0330, 0365 or 0390 displacements

⁴ Not available in 0230, 0260, 0295, 0330, 0365 or 0390 displacements

⁵ Not available with 0230, 0295, 0330, 0365 or 0390 displacements

⁶ Only available with 25 shaft

⁷ Not available with R or Y ports

⁸ Only available with M ports

Standard Length & Weights for TB Series on Pages 36-43 and TE Series on Pages 76-81.

Längen/Gewichte TB Serie siehe Seiten 36-43, TE Serie Seiten 76-81.

Longueurs et poids courants pour la série TB, voir les pages 36-43, et la série E, voir les pages 76-81.

Los valores estándar de longitud y peso de la Serie TB se puede ver en las Páginas 36-43, y de la Serie E en las Páginas 76-81.

English equivalents for metric specifications are shown in ().

