

Standard Options

LSHT Torqmotors™ and Nichols™ Motors Heavy Duty Motors

HY13-1590-012/US,EU

| TF/DF | Availability | | | | | Code | | Description |
|--------------------|-----------------|--------------------|--------------------|--------------------|----|---------|-----------|--|
| | Clutch | TG/DG | TH | BG/BH | TL | Painted | Unpainted | |
| x | x | x | x | x | x | AAAA | AAAB | Black Paint |
| x | x | x | x | x | x | AAAC | - | Double Paint |
| x ⁹ | x | x ¹⁵ | x ¹⁵ | x ¹⁵ | x | AAAF | AABP | Castle Nut |
| x | x | x | x | x | x | AAAG | AAAH | Fluorocarbon Seals |
| x | x | x | x | x | x | AAAJ | AAFG | High Temperature Commutator Seal |
| x | x | x | x | x | | AABJ | AABK | Free Running Rotorset |
| x ¹⁰ | | x ¹⁰ | x ¹⁰ | x | | AAAT | AAFX | Hot Oil Shuttle (11:00) |
| x | | x | | | | AANM | - | Seal saver for 1.25 taper shaft only |
| x | | | | x | | AANB | - | 678 Nm (6000 in-lb) Holding Capacity |
| | | | | x | | AAMN | AANH | 1808 Nm (16000 in-lb) Holding Capacity |
| x ^{9,10} | | x ^{10,15} | x ^{10,15} | x | x | AAAU | AAGF | Bi-directional Shuttle (11:00*), Castle Nut |
| x | | x | x | x | x | AAAW | - | Bi-directional Shuttle (11:00*), High Temperature Commutator Seal |
| x | x | x | x | x | | AABL | AABM | Free Running Rotor Set & No Commutator Seal |
| x | x | x | x | x | | AABT | - | No Nut |
| x | | x | x | x | x | AACP | - | Free Running Rotor Set, Castle Nut |
| x | x | x | x | x | x | - | AADJ | High Temperature Commutator Seal, Castle Nut |
| x | x | x | | x | x | AAFW | AAFA | Fluorocarbon (Viton) Seals, High Temperature Commutator Seal |
| x | x | x | x | x | x | - | AAFX | Bidirectional shuttle (11:00*) |
| x | | x | x | x | x | AAHU | - | High Temperature Commutator Seal, No Nut |
| x | | x | x | x | x | - | AAJL | No Nut |
| x | | x | x | x | x | AALD | - | Bidirectional shuttle (1:00*), Castle Nut |
| x | | x | x | x | x | AALE | - | Bidirectional shuttle (1:00*) |
| x | | x | x | x | | AALF | - | No Commutator Seal |
| x | | x | x | x | | - | AALP | Free Running Rotor Set, Fluorocarbon (Viton) Seals, High Temperature Commutator Seal |
| | | | | x | | AAML | - | (IBM) Bidirectional shuttle (11:00*), Castle Nut, 6 Brake Springs Installed |
| | | | | x | | AAMM | - | (IBM) Castle Nut, 6 brake springs installed, (9000 in-lbs hold cap) |
| | | | | x | | AAMN | - | (IBM) 'Yellow' brake springs (8), (16,000 in-lbs hold cap) |
| | | | | x | | AAMP | - | (IBM) 'Yellow' brake springs (8), (16,000 in-lbs hold cap), Castle Nut |
| x ¹⁰ | x | x ¹⁰ | x ¹⁰ | x ¹⁰ | x | BBBA | BBBM | 69 Bar (1000 PSI) Internal Bidirectional Relief |
| x ¹⁰ | x | x ¹⁰ | x ¹⁰ | x ¹⁰ | x | BBBG | BBBJ | 103 Bar (1500 PSI) Internal Bidirectional Relief |
| x ¹⁰ | x | x ^{10,16} | x ^{10,16} | x ^{10,16} | x | BBBB | BBBN | 138 Bar (2000 PSI) Internal Bidirectional Relief |
| x ^{10,12} | x ¹⁴ | x ^{10,18} | x ^{10,18} | x ^{10,18} | x | BBBC | BBBF | 207 Bar (3000 PSI) Internal Bidirectional Relief |
| x ^{10,13} | x ¹³ | x ^{10,19} | x ^{10,19} | x ^{10,19} | | BBBD | BBBW | 276 Bar (4000 PSI) Internal Bidirectional Relief |
| x ^{10,11} | x ¹⁴ | x ^{10,17} | x ^{10,17} | x ^{10,17} | x | BBDL | BBCG | 2500 PSI Int Bidirectional Relief |
| x | | x | x | x | x | - | BBCW | 3000 PSI Int Bidirectional Relief, No Nut |
| x | | x | x | x | x | BBCX | - | 2500 PSI Int Bidirectional Relief, No Nut |
| x | | x | x | x | x | - | BBDA | 3000 PSI Int Bidirectional Relief, Castle Nut |
| x | | x | x | x | x | - | BBDH | 2500 PSI Int Bidirectional Relief, Castle Nut |
| x ¹⁰ | x | x | x | x | x | BBDN | - | 1750 PSI Int Bidirectional Relief |
| x | x | x | x | x | x | - | BBDP | 725 PSI Int Bidirectional Relief |
| x | | x | x | x | | BBDW | - | 725 PSI CCW Int Bidirectional Relief (045134) |
| x | | x | | | | FSAA | FSAB | Speed Sensor |
| x | | x | | | | FSAJ | FSAH | Int Short Speed Sensor, Castle Nut |
| x | | x | x | | | - | AAUY | Complete Motor Nickel Plated, 40 um, Except Shaft |

Consult factory for other positions and combinations.

⁹ Available only with shaft code 08

¹⁰ Not available with ports code A, B or E

¹¹ Not available with displacement 0475

¹² Not available with displacements 0360, 0405 or 0475

¹³ Only available with displacement 0080

¹⁴ Not available with displacements 0365

¹⁵ Available only with shaft codes 08 and 19

¹⁶ Not available with displacement 0960

¹⁷ Not available with displacements 0625, 0785 or 0960

¹⁸ Not available with displacements 0530, 0625, 0785 or 0960

¹⁹ Not available with displacements 0360, 0405, 0530, 0625, 0785 or 0960



WARNING

This product can expose you to chemicals including lead which is known to the State of California to cause cancer, and DEHP which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Code: AAAC

Double Paint — Base coat of red oxide primer and finish coat of black paint for increased corrosion resistance.

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: AAAJ* or AAFG

High Temperature Commutator Seal — Under conditions of high temperature, it is suggested that a high temperature commutator seal be used.

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: AABJ* or AABK

Free Running Rotorset — The “free running rotorset” is a specially dimensioned rotorset that allows for smoother operation at low flows and low pressure. Volumetric efficiency can be affected.

Code: AANM*

Seal Saver — Seal saver is a metal disc that presses onto the motor shaft, covering the dirt and water (D&W) seal. It's purpose is to aid in preventing external contamination from damaging the D&W seal.

Code: AAAC**Zweischichtlackierung schwarz****Code AAAF* or AABP****Kronenmutter**

Selbstsichernde Mutter wird ersetzt durch Kronenmutter

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 Dichtungen**

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

Code: AABJ* or AABK**Leichtläufer Rotorsatz**

Anlaufdruck < 5 bar

Code: AANM***Versiegelungsschutz**

— Der Versiegelungsschutz besteht aus einer Metallscheibe, die gegen die Antriebswelle drückt und damit Schmutz- und Wasserdichtung (D&W-Dichtung) abdeckt. Hierdurch soll einer Beschädigung der D&W-Dichtung auf Grund externer Verunreinigungen vorgebeugt werden.

* Option code shown is with a single black coat of paint.

* Motor schwarz grundiert

Code: FSAA* or FSAB

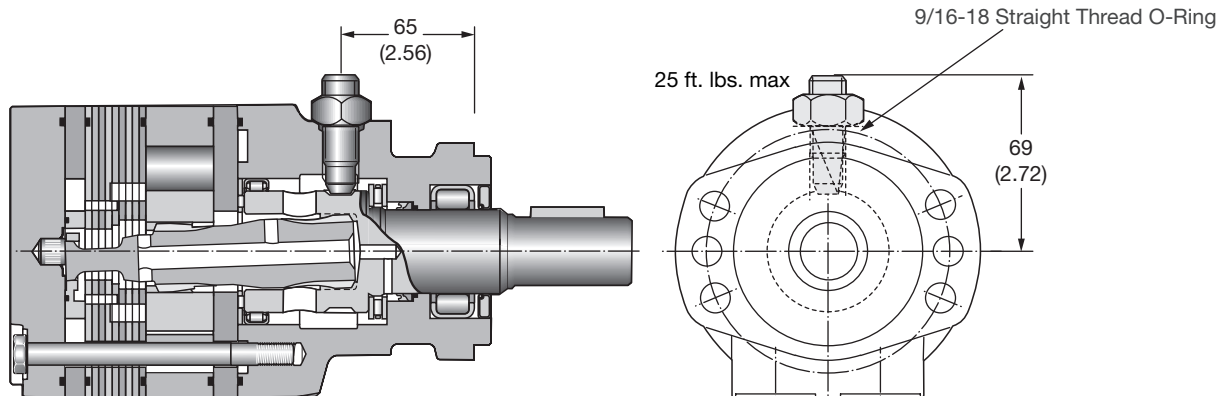
An Economical Sensor for Speed Readout

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 economique pour mesure de la vitesse. Ce capteur robuste et resistant aux intemperies est a effet Hall. Alimente par une source externe, il fournit 30 ondes digitales carrees par tour. Par multiplication lelectronique on obtient 60 pulsations par tour. Son montage ne modifie pas le couple ni la charge radiale du moteur qui le recoit.

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 moldeo 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.



English equivalents for metric specifications are shown in ().

016 Medium Duty Options.indd, a



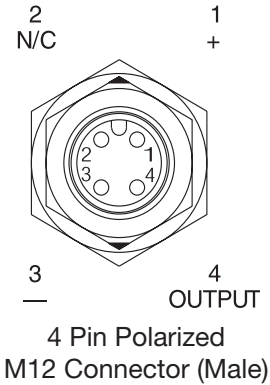
WARNING

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Pump & Motor Division
Greeneville, Tennessee, USA

239

| | |
|---|--|
| 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 Sonorausgang 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 revlucion, que pueden duplicarse electronicamente |
| Output is NPN Ausgang is NPN La sortie est NPN La salida es NPN | Open Collector Collecteur ouvert Colector abierto |

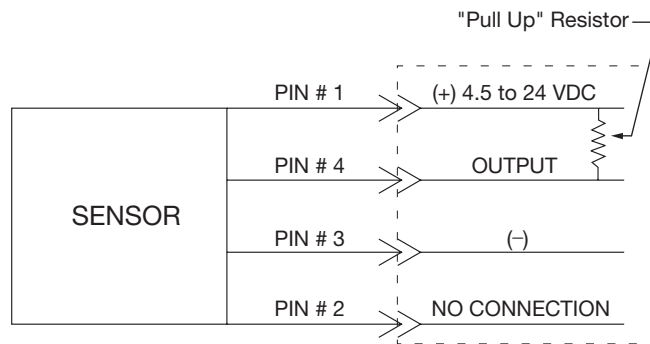


Cable and "Pull Up" Resistor are *not* supplied by factory.

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 resisancia 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

Curant d'affaissement / Voltaje 4.5...24 VDC

Sink Current / Laststrom 0...20 mA

Resistance / Corriente de ali mentacion

Resistor
 Widerstand (k Ohm)
 Resistance
 Resistancia

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

+ V

0 V

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



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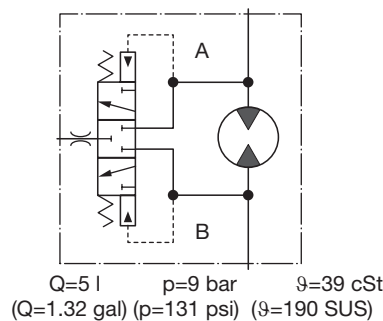
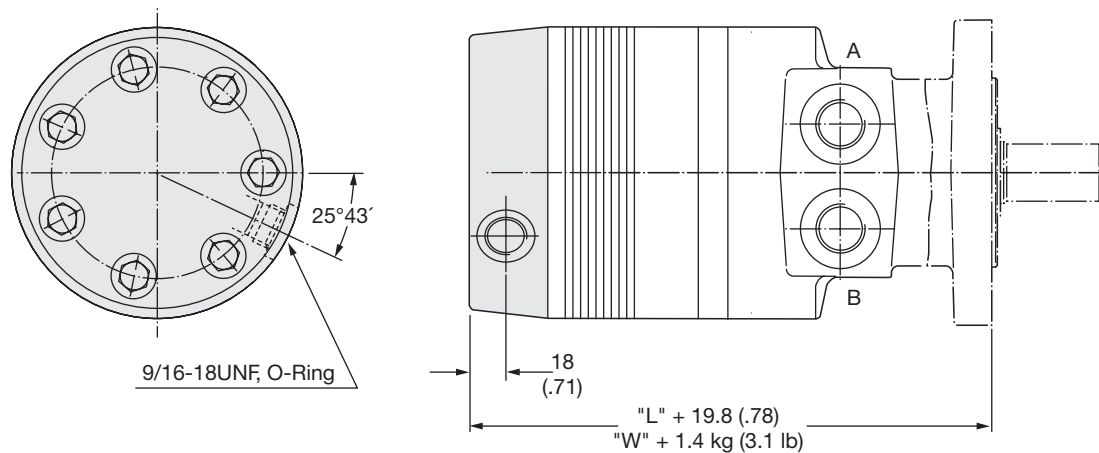
Code: AAFX or AAAT*

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. This option is not available with rear ports or integral cross over relief.

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.



Standard Length & Weights for TF Series on Pages 131-136, TG Series on Pages 185-189 and TH Series on Pages 227-228.
 Längen/Gewichte TF Serie Seiten 131-136, TG Serie Seiten 185-189, TH Serie Seiten 150-151.
 Longueurs et poids courants pour la série TF, voir les pages 131-136, et la série TG, voir les pages 185-189, et la série TH, voir les pages 227-228.
 Los valores estándar de longitud y peso de la Serie TF se puede ver en las Páginas 131-136, y de la Serie TG en las Páginas 185-189, y de la Serie TH en las Páginas 227-228.

English equivalents for metric specifications are shown in ().

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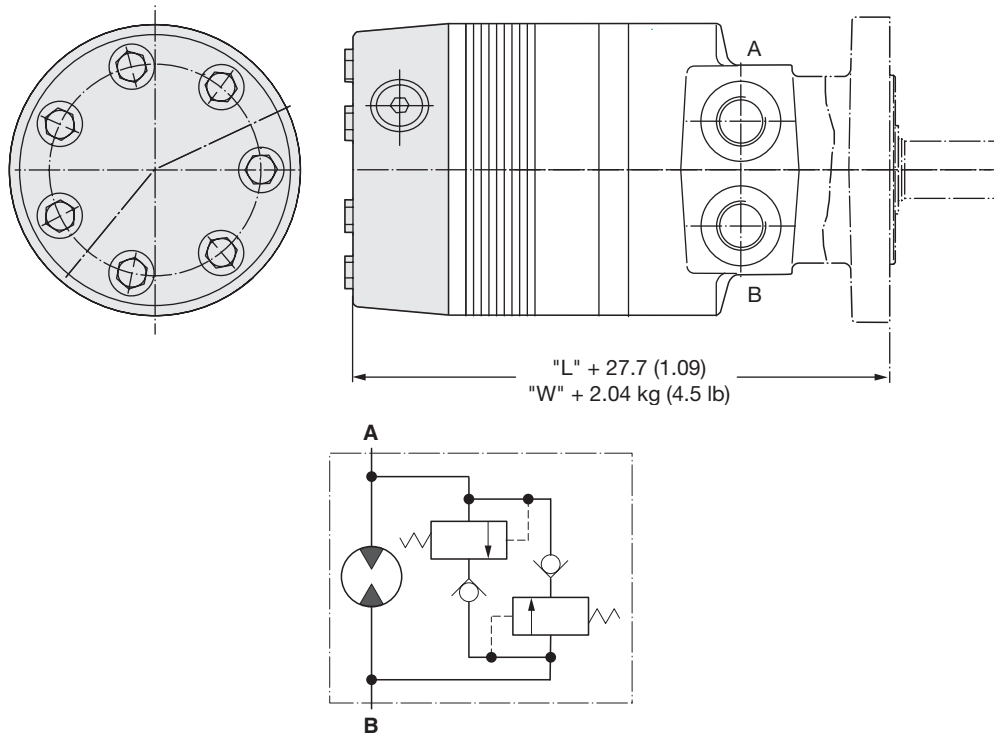
Code: BBBA*, BBBB*, BBBC*, BBBD* or BBBG*

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

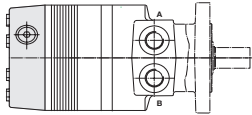
Internes Schockventil

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

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



Bestellschlüssel / Système de Commande / Ordering system / Información para pedidos

| Option | | Pressure bar (psi) |
|--------|---|-----------------------|
| BBBA |  <p>Öffnungsdruck Opening pressure Tarage Presion de apertura</p> | 69 (1000) |
| BBBB | | 138 (2000) |
| BBBC | | 207 (3000) |
| BBBD | | 276 (4000) |
| BBBG | | 103 (1500) |

Standard Length & Weights for TF Series on Pages 131-136, TG Series on Pages 185-189 and TH Series on Pages 227-228.

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