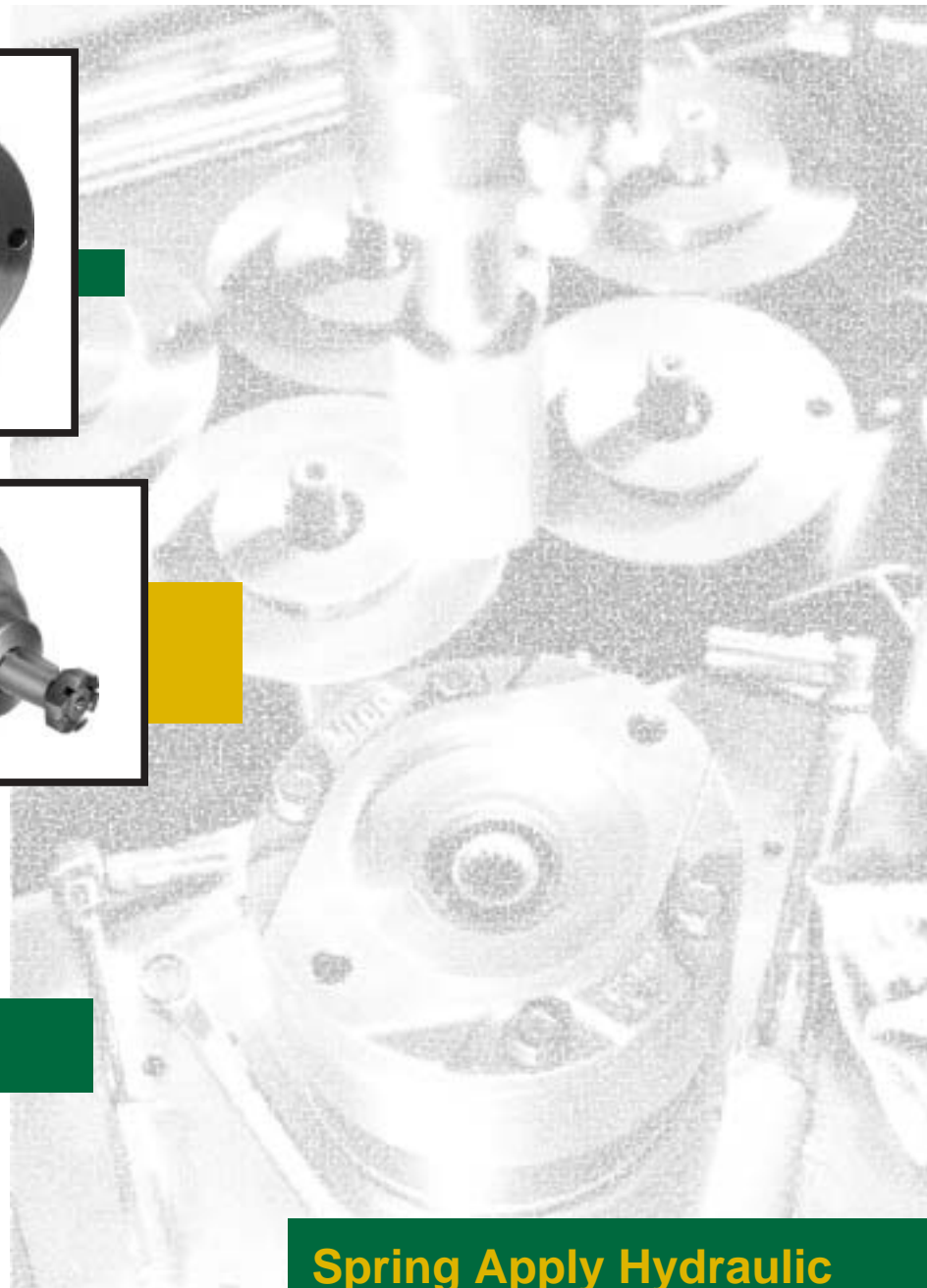




Multiple Disc Brakes



**Spring Apply Hydraulic
Release Multiple
Disc Brakes**



Spring Apply, Hydraulic Release, Multiple Disc Brakes

Introduction

Safe, sure controlled braking . . . precise control of swing booms or other vehicles and equipment with swivel joints . . . positive load positioning and "run-away" protection for winches . . . virtual elimination of slippage in hydraulic motors . . . These and many other brake related problems have been solved by applying a superior, quality built MICO Multiple Disc Brake to the application.

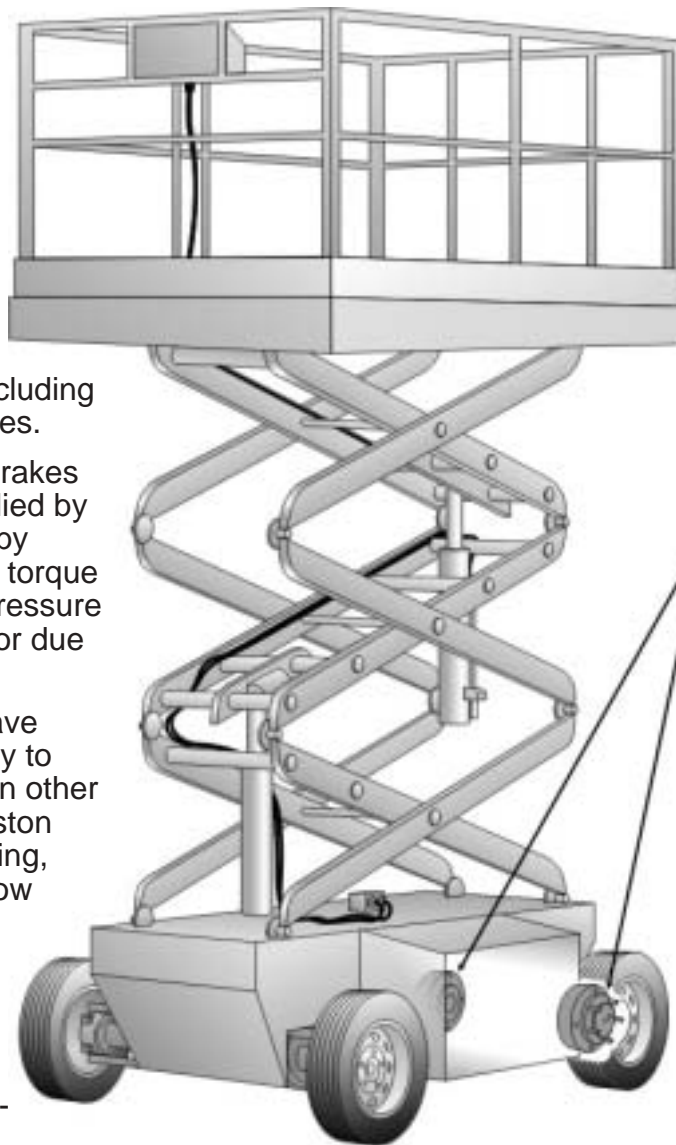
MICO, Inc. began operations on January 25, 1946. Since our inception we have enjoyed sure, steady growth and have emerged as a leader in our selected market areas, including the area of Multiple Disc Brakes.

These precisely engineered brakes are totally enclosed units applied by built-in springs and "held off" by hydraulic pressure. Maximum torque is produced when hydraulic pressure is absent, either intentionally or due to system failure.

Many MICO brake designs have features developed specifically to solve problems encountered in other brake designs . . . Such as piston breakage, piston cocking, spring, spline or bearing failure and low torque and high torque pressure drag.

Typical Multiple Disc Brake applications include manlifts, scissor lifts, swing booms, low speed vehicles and equipment used in farm harvesting.

Producing a top quality product and providing unequalled service is what MICO customers have come to expect . . . and that is what we will continue to provide.



MICO
Mini - Wheel
Mount Brakes

Purpose of this catalog

This catalog is designed to introduce you to a selection of MICO Multiple Disc Brakes. Each section includes features, specifications, dimensional drawings and order information.

The order information describes mounting, shaft, torque and available options. The order information system offers considerable versatility and flexibility, enabling you to select the product for your specific application. To assist you in your selection, we strongly recommend that you complete the proper data sheet found in the back of this catalog and mail or fax it to your inside sales contact at MICO West. The Engineering Department will analyze your requirements and recommend the product best suited to your needs.

Also included in this catalog are engineering design considerations for Multiple Disc Brake applications.

Minimum quantity orders apply to some brake combinations. All possible brake combinations are not currently in production. Contact MICO West for the availability of special brakes.

We hope you will find this catalog to be a useful reference manual as well as a product catalog.

Contents

Introduction	1
Purpose of this Catalog	2
MICO Advantages	3
Multiple Disc Brake Applications	4
Order Number Explanation	5
General Brake Information	6
MICO Multiple Disc Brakes (modular) Introduction	7
SAE A - Mount	9
SAE C - Mount	11
SAE D - Mount	13
MICO Multiple Disc Brakes (narrow) Introduction	15
SAE B - Mount	17
MICO Multiple Disc Brakes (gold series) Introduction	19
SAE B - Mount	21
"Top Hat" Thru-Shaft Motor Brakes	23
Posi-Torque Winch Brakes Introduction	24
SAE C - Mount	25
Pressure Override Brakes SAE B - Mount	27
SAE C - Mount	29
Large Wheel Mount Brakes (motor input)	31
(closed input)	33
Mini Wheel Mount Brakes (closed input)	35
Repair Kit Cross Reference	37
Multiple Disc Brake Data Sheets For Winch or Holding Type Applications Only	42
For Vehicle Parking or Emergency Stop Applications Only	44
For Service Braking or Pressure Override Brakes Only	46
Limited Warranty	50

Representation and Service

In addition to the numerous design improvements over competitive models, you also get MICO representation and service which is second to none.

Direct Access to MICO Engineers

Involving the customer directly in product design and testing insures that customer requirements are met. Our engineering staff has a very strong background in spring apply, hydraulically released brakes. As new technology becomes available, it is integrated into MICO products and when technology is not available, MICO Engineers develop it.

Simplified Disassembly and Assembly

Features such as inboard oil seal, one piece piston separators, longer torque pins and modular design concepts on many models help to simplify disassembly and assembly procedures.

Large Diameter Discs

Larger disc diameters on many models give MICO Brakes higher torque, better heat dissipation and fewer operating parts.

Extensive Testing

Testing on MICO Multiple Disc Brakes include high pressure cycle, temperature, horizontal and vertical mount heat generation, spring life and performance, static torque, dynamic torque and leak testing.

Compact Modular Designs

Compact modular designs reduce problems encountered in many installations. Most models can be installed into restricted space with little or no additional adjustment, alignment or special brackets.



Advantages

Interchangeable with Other Fail-safe Type Brakes

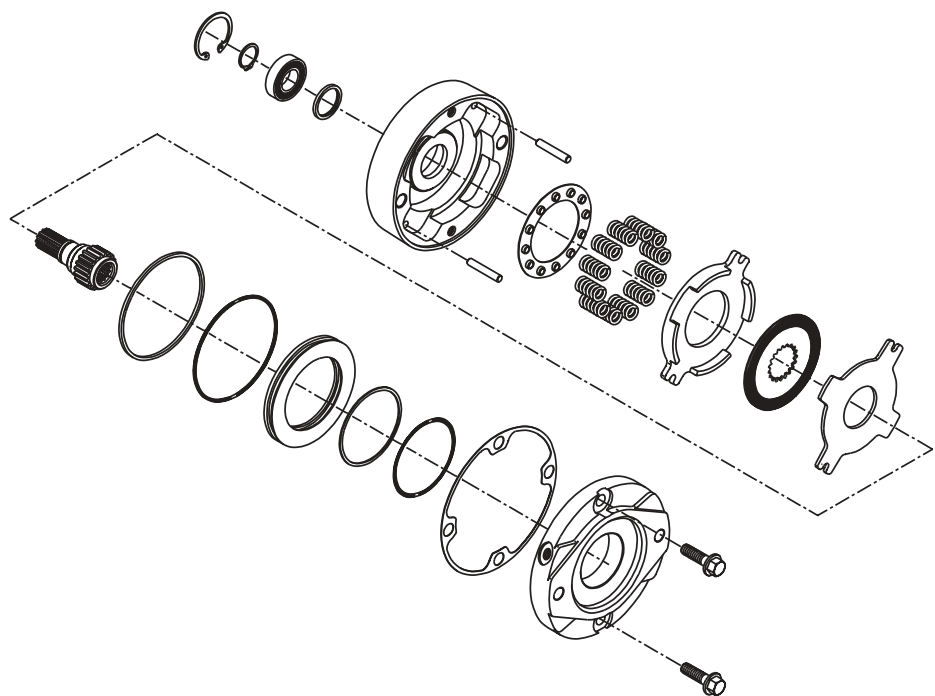
MICO Multiple Disc Brakes are interchangeable with other fail-safe type brakes using SAE and industry standards as a guide. In most cases engineering changes are not required, therefore, these brakes are economical to use.

Unique Balanced Piston Design

Some models feature a piston design that virtually eliminates areas of localized stress by more uniformly distributing the pressure generated load.



Quality & Reliability equal fewer field problems.





Multiple Disc Brakes

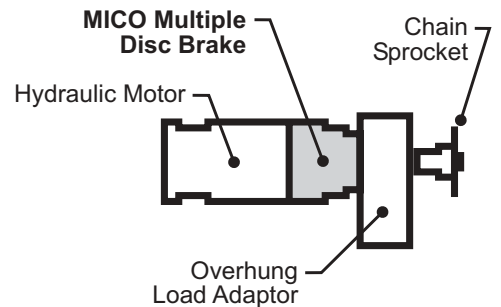
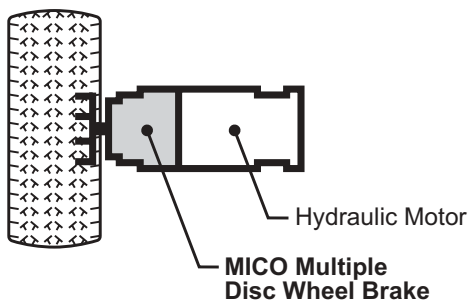
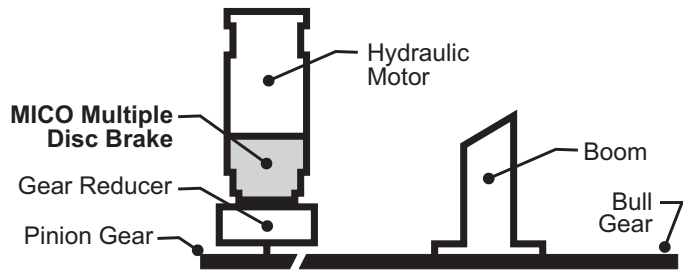
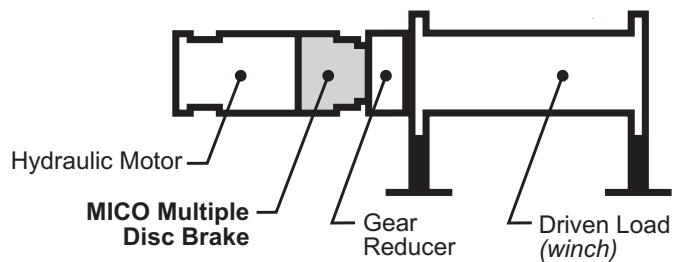
(Spring apply, hydraulic release)

MICO engineers are innovators in the design of spring apply, hydraulic release multiple disc brakes, wheel brakes, thru-shaft brakes, posi-torque winch brakes and more. These engineers are committed to improving the product while reducing cost. Simple, straight forward designs result in rugged brake products. These products require less maintenance because they are designed with fewer moving parts. They are truly superior in reliability and performance.

MICO Multiple Disc Brakes are designed for use with heavy duty machinery and off-highway vehicles in the construction, material

handling, agriculture, mining, sanitation, utilities and timber industries. They are also used in a multitude of winching applications. Brakes of this type reduce maintenance and downtime by preventing contaminants, which cause brake lining wear, from entering the brake. They will provide consistent braking torque, positive hold, and long life in rugged environments.

Typical Multiple Disc Brake Applications



Order Number Explanation

The catalog code numbering system allows you to construct the brake or other product by combining the variables that meet your needs. **Catalog code number example:** 3A-101025-M.

A production number will be assigned by our Engineering Department upon receipt of your order. **Production order number example:** 13-538-196.

NOTE

For brake combinations that are not currently established, but possible, quotation and assignment of part number must be predicated by receipt, review, and acceptance of applicable multiple disc brake data sheet.

Data sheets can be found in the back of this catalog or on our web site (www.mico.com). Any combination you are unsure of, please call MICO West. Our Engineering Department will analyze your data and recommend the best MICO product for your application. All data submitted will remain confidential.

Options Explanation

Z = OIL COOLED OPTION, noted as suffix Z, allows flow-through or sump oil cooling for brakes which may be required to handle limited dynamic inputs. Wet brakes are also used in applications where the package is exposed to severe duty or to adverse environmental conditions such as marine winches or mining vehicles. Products that are to be used strictly wet are noted as such. Oils containing slippery or antiwear additives, such as graphite or molybdenum disulfide or extreme pressure (EP) type lubricants, may allow the brake to slip at torque levels below the rated values.

Specifications (Modular Design)

- Flow thru - 3.8 L/min (1.0 gpm) to a maximum of 26.5 L/min (7.0 gpm)
- Case pressure should not exceed 1.03 bar (15 psi)
- Inlet ports - SAE No. 6, 9/16-18 o-ring boss
- Outlet ports - SAE No. 6, 9/16-18 o-ring boss
- Location of inlet and outlet ports are shown on each individual drawing
- For sump oil cooling fluid volumes refer to individual model order information
- Brakes are shipped dry and customer is responsible for adding proper type and volume of cooling oil

S = SPEED SENSOR OPTION, noted as suffix S, allows a customer supplied magnetic pick up to simply screw into the brake housing. The magnetic pick up generates a fixed frequency of pulses per revolution.

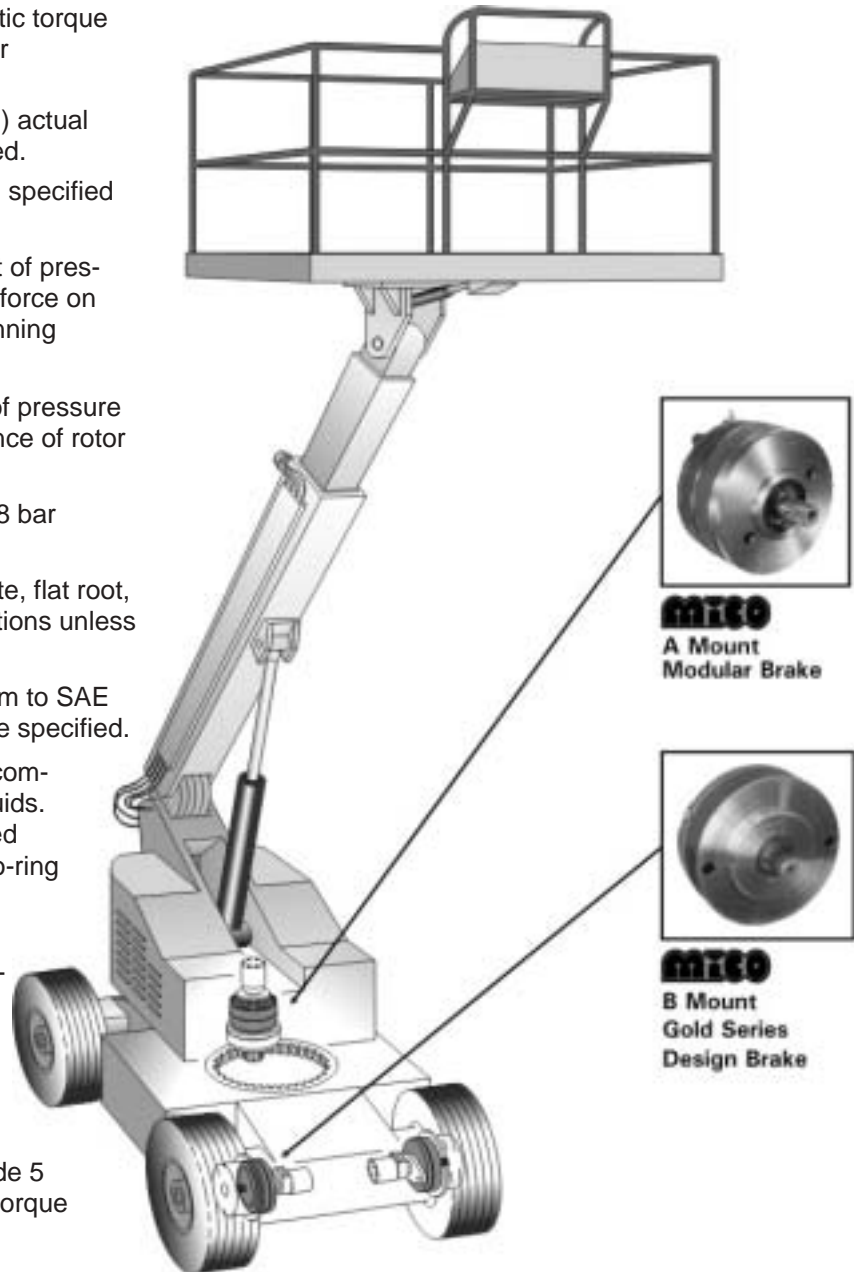
Specifications

- Direct mounting of Flow-Tech or Motorola® Tach Drive Pickup
- Speed sensing range 0 - 4000 rpm
- Speed sensor ports - 3/8-18 straight pipe or 3/4-16UNF (other sizes available upon request, consult MICO West)
- Contact MICO West for location of sensor port
- Notched teeth available:
 - C-Mount Modular: 11, 15, 18, 40, 55 & 70
 - B-Mount Narrow: 40 & 70

D = DOUBLE BEARING OPTION, is recommended only for special instances. In applications involving overhung loads, such as a sprocket or drum, a double bearing brake usually lacks the load capacity required. In these instances the use of a load adaptor is recommended.

General Brake Information

1. **Brake torque** values listed are dry static torque ratings except for the C-Mount Modular Posi-torque Brakes (page 25).
 - a. For brakes with Z option (oil-cooled) actual torque is 67% of the dry torque listed.
 - b. Static torque may vary $\pm 10\%$ from specified values.
2. **Initial release pressure** is the amount of pressure required to just relieve the spring force on the rotor stack. Zero torque with no running clearance.
3. **Full release pressure** is the amount of pressure required to achieve full running clearance of rotor stack.
4. Maximum continuous pressure is 206.8 bar (3000 psi) unless otherwise specified.
5. All splined shafts are 30 degree involute, flat root, side fit per ANSI B92.1-1970 specifications unless otherwise specified.
6. All mounting flange dimensions conform to SAE Standard J744 JUL88 unless otherwise specified.
7. Standard piston o-rings are (Buna N) compatible with mineral based hydraulic fluids. For applications with non-mineral based fluids or extreme temperatures, other o-ring materials are available.
8. Brakes include mounting face gaskets and/or o-rings. Some motors and gear-boxes allow for the use of o-rings to seal the mounting faces on either side of the brake. Do not use the o-ring and face gasket together to seal a mounting face.
9. When mounting a brake use SAE Grade 5 or better bolts. Tighten to appropriate torque specifications for grade used.



⚠ CAUTION

- A. If hydrostatic bench testing is performed on a brake assembly, release pressure must not exceed 68.9 bar (1000 psi) unless additional mounting bolts are used for supplemental clamping.
- B. Pressures above 206.8 bar (3000 psi) caused by spikes in the hydraulic system can shorten brake life and must be avoided.
- C. Most brakes are designed for limited side load capability at output end. Use of an overhung load adaptor is recommended for most applications. Contact MICO West for further information.



Multiple Disc Brakes (modular)

Features

- Large diameter spline shafts virtually eliminate spline battering
- Versatile modular design
- Spring loaded, hydraulically released
- Sealed environment - isolation from contaminants
- Nitrile case seals
- High strength ductile iron construction
- Standard SAE mounting flanges

Benefits

- Eliminates problems found in competitive brake designs, such as piston breakage, piston cocking, spring failure, bearing failure and low and high torque pressure drag
- Designed primarily for use on hydraulic drive systems, can replace most fail-safe type brakes in use today, and do it economically
- Engineering changes to replace fail-safe designs are not required in most cases

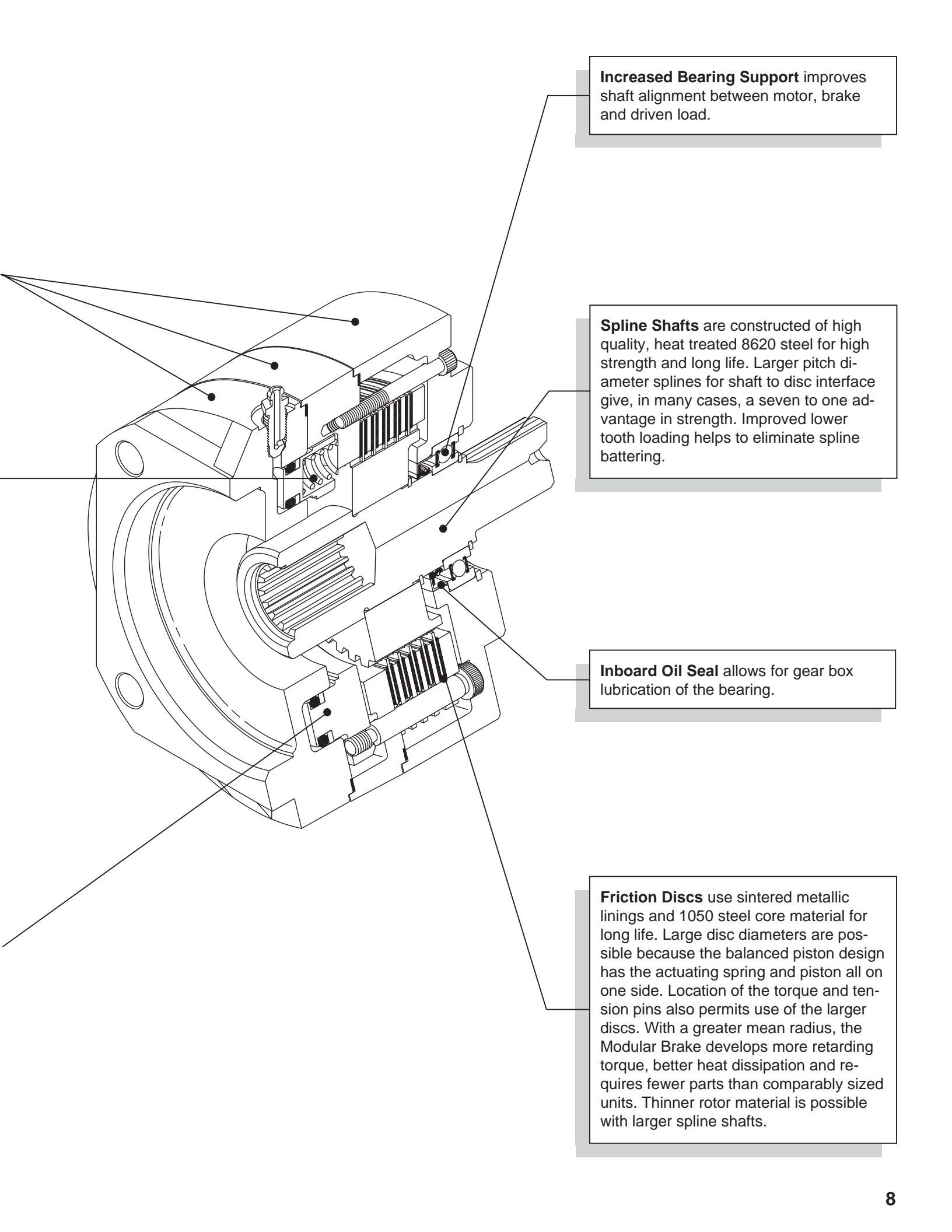
Operation

MICO Modular Multiple Disc Brakes are spring apply, hydraulic release brakes. Powerful chrome-silicon die springs automatically apply the brake's disc pack when hydraulic pressure drops, giving safe, sure braking.

Cover, Spring Plate and Pressure Plate constructed of heavy duty ductile iron.

Powerful Chrome Silicon Die Springs automatically apply the brake's disc packs when hydraulic pressure drops.

Balanced Piston Design virtually eliminates areas of localized stress by uniformly distributing the pressure generated load.



Increased Bearing Support improves shaft alignment between motor, brake and driven load.

Spline Shafts are constructed of high quality, heat treated 8620 steel for high strength and long life. Larger pitch diameter splines for shaft to disc interface give, in many cases, a seven to one advantage in strength. Improved lower tooth loading helps to eliminate spline battering.

Inboard Oil Seal allows for gear box lubrication of the bearing.

Friction Discs use sintered metallic linings and 1050 steel core material for long life. Large disc diameters are possible because the balanced piston design has the actuating spring and piston all on one side. Location of the torque and tension pins also permits use of the larger discs. With a greater mean radius, the Modular Brake develops more retarding torque, better heat dissipation and requires fewer parts than comparably sized units. Thinner rotor material is possible with larger spline shafts.



A-Mount Modular Brakes

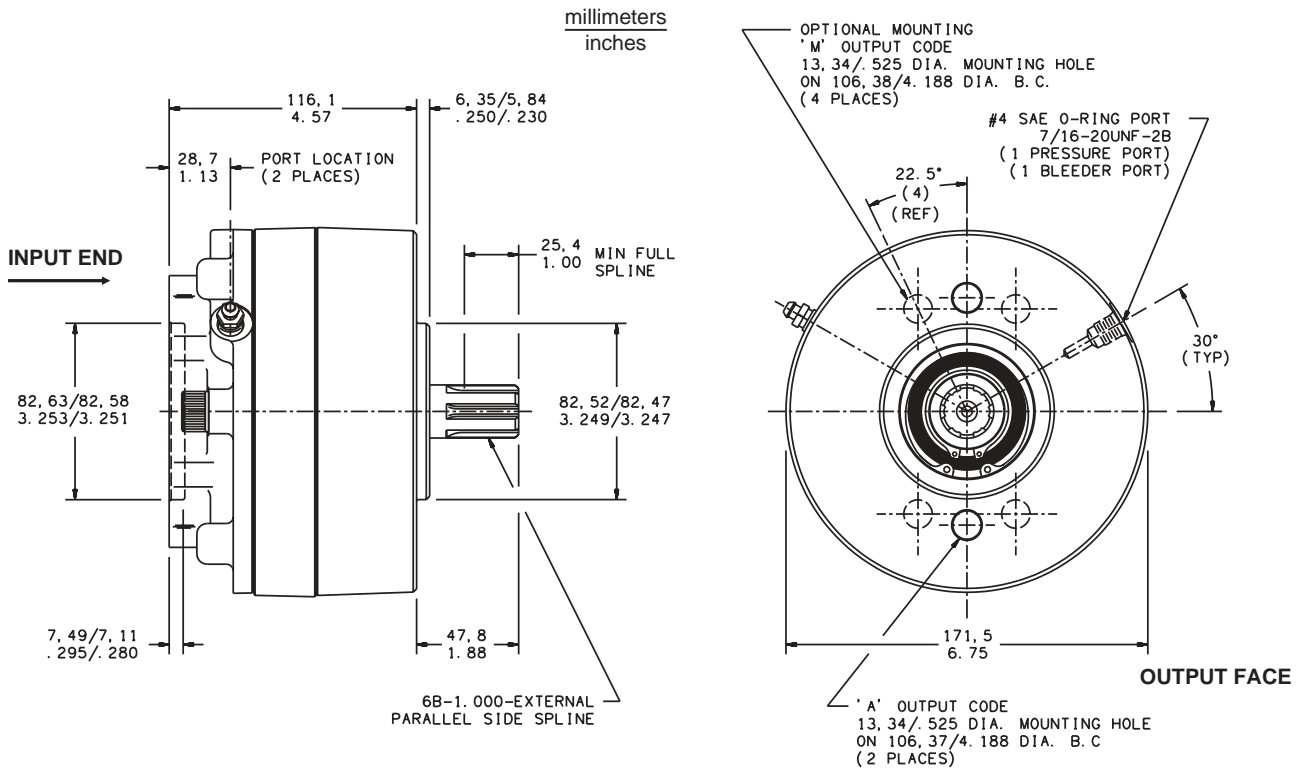


FEATURES

- Low release pressures - ideal for use with closed-loop hydrostatic systems
- Rugged heavy duty construction with torques to 1017 N-m (9000 lb-in)
- Heat treated 8620 shafts for high strength and long life
- Unique balanced piston design

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-538-008
(3A-060640-M)



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 203 - 1017 N-m
(1800 - 9000 lb-in)

Release pressure range 8.3 - 26.9 bar (120 - 390 psi)

Maximum operating pressure 207 bar (3000 psi)

Maximum energy input 216,960 joule (160,000 ft-lb)
(one stop, no damage)

Volume of oil to release brake 8.2 cm³ (0.5 in³)

Maximum operating temperature 132 °C (270 °F)

Maximum speed 4000 rpm

Approximate weight 11 kg (24 lb)

Fluid type Mineral base hydraulic oil

ORDER INFORMATION

Not all of the brake combinations are possible due to certain design limitations.
(See NOTE on the top of page 5)

NOTE: Dry design only, not for wet applications.



OUTPUT FACE

- 3A - SAE A-Mount 2-Bolt
- 3M - 4-Bolt A-Mount

OUTPUT SPLINE / INPUT SPLINE

	SAE Designation
06/06	06 = 25.4 mm (1.00") Dia. 6B
10/10	10 = 25.4 mm (1.00") Dia. Keyed
14/14	14 = 14T 12/24
25/25	25 = 31.8 mm (1.25") Dia. Keyed

Other configurations consult MICO West.

OPTIONS

- (Available separately or in combination)
- D - Double Bearing
 - S - Speed Sensor

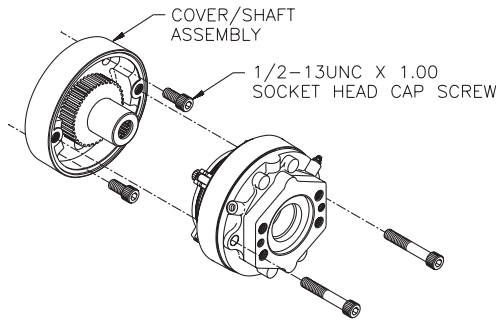
INPUT FACE

- M - 4-Bolt and SAE A-Mount 2-Bolt

TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
90 *	1017	(9000)	22.8	(330)	26.9	(390)
70 *	791	(7000)	17.2	(250)	20.7	(300)
56 *	633	(5600)	14.5	(210)	17.2	(250)
48 *	542	(4800)	11.7	(170)	13.8	(200)
40	452	(4000) †	14.5	(210)	17.2	(250)
39	441	(3900)	10.3	(150)	12.4	(180)
35	396	(3500) †	11.7	(170)	13.8	(200)
34	384	(3400)	9.0	(130)	10.3	(150)
29	328	(2900) †	10.3	(150)	12.4	(180)
25	283	(2500) †	9.0	(130)	10.3	(150)
24	271	(2400)	6.9	(100)	8.3	(120)
18	203	(1800) †	6.9	(100)	8.3	(120)

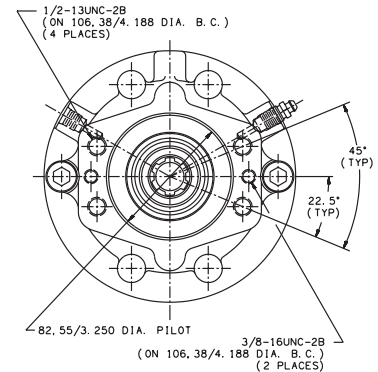
* For use with input and output spline codes 14 and 25 only.
† Models available with speed sensor port.



Mounting Instructions

Install cover/shaft assembly on gearbox using either two or four 1/2-13UNC x 1.00" long socket head cap screws (not included), depending on brake model being used. See Mounting Instructions (Form No. 81-538-002) packed with each brake.

INPUT FACE



M - 4-Bolt and SAE A-Mount 2-Bolt

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER	CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3A-060618-M	13-538-004	3A-141418-M	13-538-016
3A-060624-M	13-538-052	3A-141424-M	13-538-036
3A-060625-M	13-538-230	3A-141435-M	13-538-384
3A-060629-M	13-538-054	3A-141439-M	13-538-050
3A-060639-M	13-538-058	3A-141448-M	13-538-300
3A-060635-M	13-538-006	3A-141456-M	13-538-056
3A-060640-M	13-538-008	3A-141470-M	13-538-290
3A-060656-M	13-538-232	3A-141490-M	13-538-320
3A-100625-M	13-538-294	3A-141490-MD	13-538-034
3A-100640-M	13-538-044	3A-250625-M	13-538-200
3A-101018-M	13-538-010	3A-250629-M	13-538-030
3A-101025-M	13-538-196	3A-252518-M	13-538-178
3A-101029-M	13-538-024	3A-252524-M	13-538-376
3A-101035-M	13-538-026	3A-252525-M	13-538-022
3A-101040-M	13-538-012	3A-252529-M	13-538-274

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3A-252535-M	13-538-370
3A-252540-M	13-538-242
3A-252548-M	13-538-272
3A-252556-M	13-538-028
3A-252590-M	13-538-060
3M-060625-M	13-538-244
3M-060640-M	13-538-064
3M-101040-M	13-538-040
3M-141440-M	13-538-020
3M-141440-MD	13-538-032
3M-141448-M	13-538-046
3M-141456-M	13-538-234

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3M-141470-M	13-538-236
3M-141470-MD	13-538-202
3M-141490-M	13-538-038
3M-252529-M	13-538-318
3M-252535-M	13-538-182
3M-252540-M	13-538-042
3M-252556-M	13-538-382
3M-252590-M	13-538-048



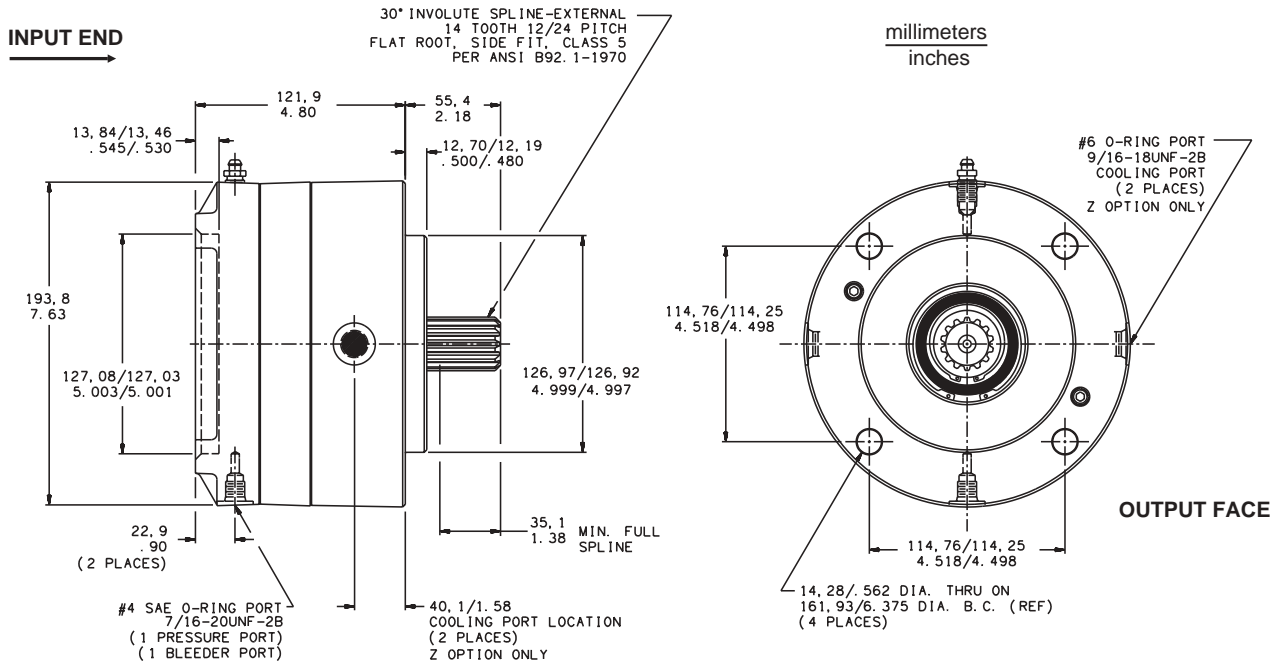
C-Mount Modular Brakes



- More retarding torque than competitive models
- Numerous mounting configurations available
- Low release pressures, ideal for use with closed-loop hydrostatic systems
- Rugged heavy duty construction with torques to 1356 N-m (12,000 lb-in)
- Heat treated 8620 shafts for high strength and long life
- Compact modular package simplifies mounting
- Unique balanced piston design

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-547-078
(3C-141455-CZ)



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 509 - 1356 N-m (4500 - 12,000 lb-in)
Release pressure range 10.3 - 21.4 bar (150 - 310 psi)
Maximum operating pressure. 207 bar (3000 psi)
Maximum speed 4000 rpm
Volume of oil
to release brake 16.4 cm³ (1.0 in³)
Maximum operating temperature. 132 °C (270 °F)
Maximum energy input 542,400 joule (400,000 ft-lb)
(one stop, no damage)

Approximate weight 18 kg (40 lb)
Fluid type Mineral base hydraulic oil

ORDER INFORMATION (See NOTE on the top of page 5)

NOTE: On oil cooled models (Z option) actual torque is 67% of value shown on torque code chart. Recommended sump oil fluid volume when mounted:
Horizontal - 118.3 mL (4 oz), Vertical - Contact MICO West



OUTPUT FACE
3C - SAE C-Mount
4-Bolt

OUTPUT SPLINE / INPUT SPLINE

04 (internal)/14
14/00
14/06
14/13
14/14
17/17
21/00
21/21

SAE Designation	
00	= Used with "R" only
04	= 14T 12/24
06	= 25.4mm (1.00") Dia. 6B
13	= 13T 8/16
13	= 13T 16/32
14	= 14T 12/24
17	= 17T 12/24
21	= 21T 16/32

Other configurations consult MICO West.

OPTIONS

(Available separately or in combination)
D - Double Bearing
Z - Oil Cooled - see note above
S - Speed Sensor

INPUT FACE

C - SAE C-Mount 4-Bolt	C2 - SAE C-Mount 2-Bolt Thru
M - 4-Bolt and SAE A-Mount 2-Bolt	C24 - 2-Bolt and 4-Bolt C-Mount
R - Closed	
B - SAE B-Mount 2-Bolt	
K4 - Eaton Standard 4000	

TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
98	1107	(9800)	14.5	(210)	20.0	(290)
85	960	(8500)	11.0	(160)	15.2	(220)
80	904	(8000)	12.4	(180)	17.2	(250)
70	791	(7000)	11.0	(160)	14.5	(210)
66	746	(6600)	9.0	(130)	12.4	(180)
55	622	(5500)	9.0	(130)	11.7	(170)
54	610	(5400)	7.6	(110)	11.0	(160)
45	508	(4500)	7.6	(110)	10.3	(150)
12	1356	(12,000)	14.5	(210)	21.4	(310)
10	1130	(10,000)	12.4	(180)	17.2	(250)

Other torques available on request.

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER	CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER	CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER	CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3C-041412-C	13-547-282	3C-141412-CDZ	13-547-288	3C-141466-C24	13-547-358	3C-141498-MD	13-547-378
3C-041498-C	13-547-324	3C-141412-CZ	13-547-034	3C-141466-M	13-547-204	3C-171780-C	13-547-124
3C-140012-R	13-547-272	3C-141412-K4	13-547-296	3C-141466-MZ	13-547-226	3C-171785-C	13-547-278
3C-140098-R	13-547-268	3C-141412-K4Z	13-547-036	3C-141470-C	13-547-084	3C-171785-CZ	13-547-126
3C-140612-MZ	13-547-370	3C-141412-M	13-547-038	3C-141470-CZ	13-547-086	3C-171798-C	13-547-212
3C-140645-M	13-547-264	3C-141445-C	13-547-072	3C-141480-B	13-547-342	3C-212145-C	13-547-332
3C-140655-M	13-547-232	3C-141445-K4	13-547-384	3C-141480-C	13-547-090	3C-212166-C	13-547-130
3C-140655-MZ	13-547-006	3C-141445-M	13-547-352	3C-141480-C2	13-547-092	3C-212180-C	13-547-132
3C-140680-MD	13-547-210	3C-141445-C2	13-547-208	3C-141480-K4	13-547-094	3C-212180-CZ	13-547-170
3C-140685-M	13-547-246	3C-141445-CZ	13-547-362	3C-141480-K4Z	13-547-254	3C-212185-C	13-547-220
3C-140698-M	13-547-190	3C-141454-C	13-547-074	3C-141480-M	13-547-096	3C-212198-C	13-547-134
3C-141355-B	13-547-290	3C-141455-B	13-547-354	3C-141485-C	13-547-098		
3C-141380-D	13-547-410	3C-141455-BZ	13-547-298	3C-141498-C	13-547-102		
3C-141398-D	13-547-016	3C-141455-C	13-547-076	3C-141498-C2	13-547-104		
3C-141410-CZ	13-547-024	3C-141455-CD	13-547-344	3C-141498-CS	13-547-106		
3C-141410-K4	13-547-164	3C-141455-CZ	13-547-078	3C-141498-CZ	13-547-108		
3C-141412-C	13-547-030	3C-141455-M	13-547-364	3C-141498-K4	13-547-110		
3C-141412-CD	13-547-316	3C-141466-C	13-547-082	3C-141498-M	13-547-116		



D-Mount Modular Brakes

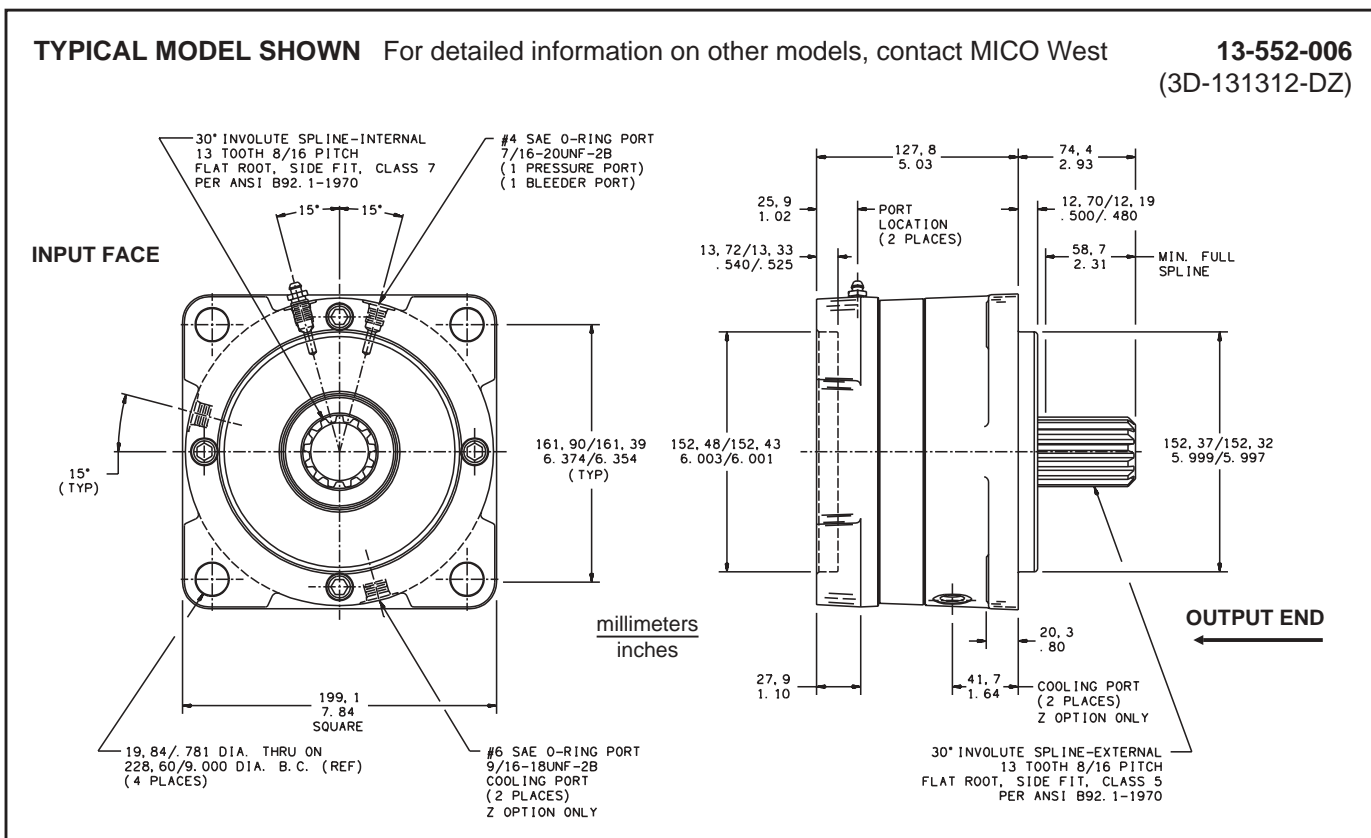


FEATURES

- Oil cooled or dry design applications
- Simple four bolt mounting configuration
- Low release pressures, ideal for use with closed-loop hydrostatic systems
- Rugged heavy duty construction with torques to 2712 N-m (24,000 lb-in)
- Heat treated 8620 shafts for high strength and long life
- Unique balanced piston design

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-552-006
(3D-131312-DZ)



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 621 - 2712 N-m (5500 - 24,000 lb-in)
Release pressure range 7.6 - 26.9 bar (110 - 470 psi)
Maximum operating pressure. 207 bar (3000 psi)
Maximum speed 4000 rpm
Volume of oil
to release brake 16.4 cm³ (1.0 in³)

Maximum energy input 610,200 joule (450,000 ft-lb)
(one stop, no damage)
Fluid type Mineral base hydraulic oil
Maximum operating temperature 132 °C (270 °F)
Approximate weight 24 kg (52 lb)

ORDER INFORMATION (See NOTE on the top of page 5)

NOTE: On oil cooled models (Z option) actual torque is 67% of value shown on torque code chart. Recommended sump oil fluid volume when mounted:
Horizontal - 147.9 ml (5 oz), Vertical - Contact MICO, Inc.



OUTPUT FACE

3D - SAE D-Mount
4-Bolt

OUTPUT SPLINE / INPUT SPLINE

	SAE Designation
13/13	13 = 13T 8/16
13/14	14 = 14T 12/24
13/15	15 = 15T 8/16
75/75	75 = 44.5 mm (1.75") Dia. Keyed

Other configurations consult MICO West.

OPTIONS

Z - Oil Cooled - see note above

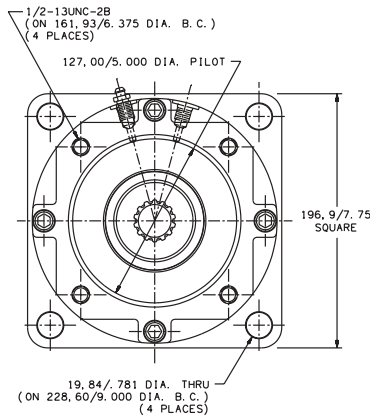
INPUT FACE

D - SAE D-Mount
C - SAE C-Mount
E - SAE E-Mount

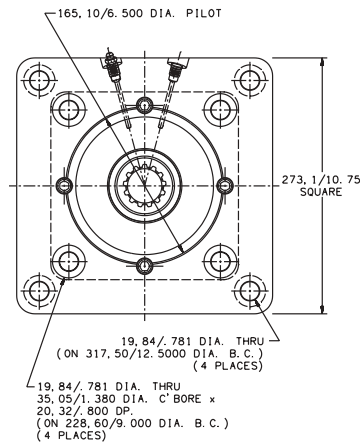
TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
80	904	(8000)	9.0	(130)	11.7	(170)
55	621	(5500)	5.5	(80)	7.6	(110)
24	2712	(24,000)	22.8	(330)	32.4	(470)
20	2260	(20,000)	18.6	(270)	26.2	(380)
16	1808	(16,000)	14.5	(210)	20.7	(300)
12	1356	(12,000)	11.0	(160)	15.9	(230)
10	1130	(10,000)	10.3	(150)	13.8	(200)

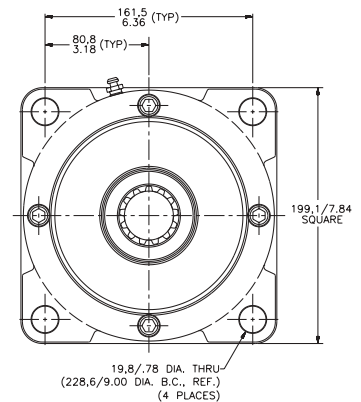
INPUT FACES



C - SAE C-Mount



E - SAE E-Mount



D - SAE D-Mount

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER	CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3D-131310-D	13-552-040	3D-131380-E	13-552-044
3D-131310-E	13-552-042	3D-131480-C	13-552-038
3D-131312-D	13-552-002	3D-131410-C	13-552-018
3D-131312-DZ	13-552-006	3D-131512-E	13-552-078
3D-131316-C	13-552-016	3D-131516-E	13-552-090
3D-131316-D	13-552-008	3D-131520-E	13-552-074
3D-131320-D	13-552-060	3D-757516-D	13-552-084
3D-131320-E	13-552-010		
3D-131324-D	13-552-070		
3D-131324-DZ	13-552-086		
3D-131380-D	13-552-033		
3D-131380-DZ	13-552-036		



Multiple Disc Brakes (narrow)

Features

- Complete self-contained package
- Standard SAE mounting flanges
- Spring loaded, hydraulically released
- High strength ductile iron construction
- Sealed environment - isolation from contaminants

Benefits

- Thick discs eliminate tooth wear-out and brake "free wheeling," resulting in longer life between parts replacement
- Large inlet port helps avoid sluggish response if air is entrapped in the oil
- One piece separator design helps eliminate breaking and bending moments on piston, resulting in minimal loss because of good contact on plates
- Longer dowel pins simplify assembly and keep rotor in place, reducing risk of shearing teeth from rotor

Operation

Braking using this version is provided by a pack of rotating friction discs splined to the shaft and stationary separator plates restrained by pins in the housing. Force is transmitted to the disc pack through the return plate by a series of preloaded springs. The brakes are released by hydraulic pressure applied to the piston to compress the springs. They are self-applying since any function which reduces the hydraulic pressure below the release pressure will start to initiate a brake application. Zero pressure produces maximum brake torque.

Cover Bolts are high strength grade 8 flanged type which allow for higher brake release pressure shocks without subsequent cover bolt damage.

O-ring and Back-up Ring combination on all models.

Housings are constructed of high quality ductile iron castings for strength and durability.

Piston Separator design allows for easier disassembly and assembly. This one piece powdered metal design as opposed to a split piston design, helps eliminate breaking and bending moments on piston.

Chrome Silicon Die Springs provide higher torque capabilities where space is limited, resulting in longer service life.

Spline Shafts are constructed of high quality, heat treated 8620 steel for high strength and long life. The one piece precision ground spline shafts reduce vibration.

Rotary Shaft Seal at output end to prevent oil and other contaminants from entering brake.

Friction Discs use sintered metallic linings and high strength 1050 steel core material for long life.



B-Mount "Narrow" Brakes



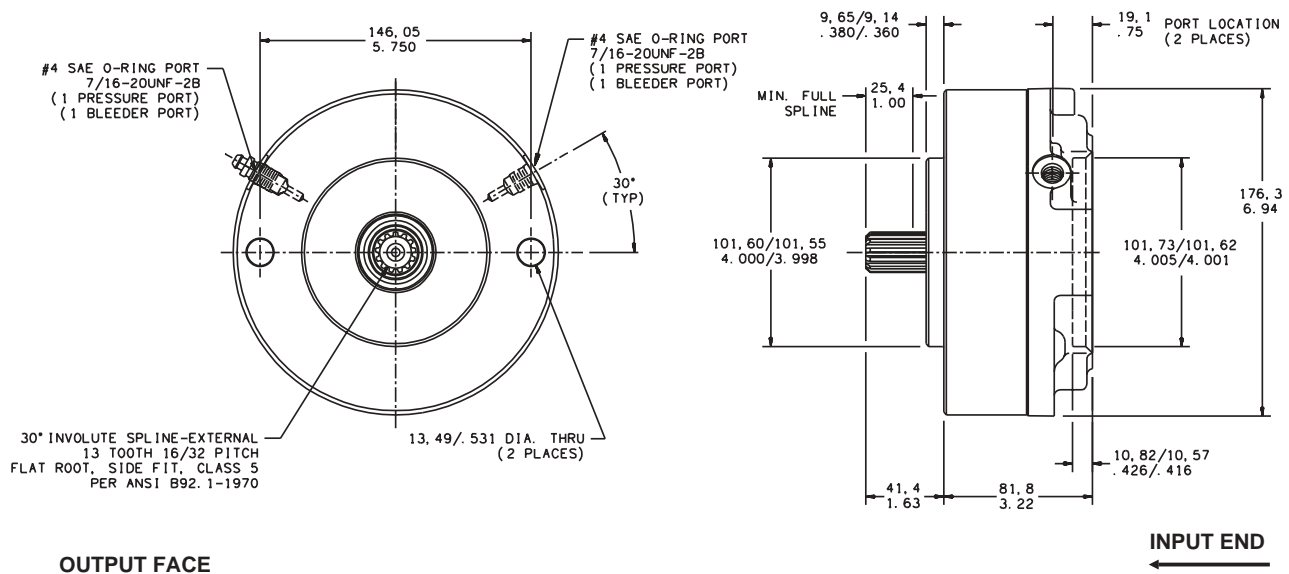
FEATURES

- Complete self-contained dry design package
- Standard SAE mounting flanges
- High strength ductile iron castings for strength and durability
- Sintered bronze friction plates for high strength and long lining life
- Sealed environment - isolation from contaminants
- Optional pressure override models available for limited service braking

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

02-556-326
(LMB-131321-B)

millimeters
inches



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 113 - 542 N-m (1000 - 4800 lb-in)
Release pressure range 8.3 - 23.8 bar (120 - 345 psi)
Maximum operating pressure 207 bar (3000 psi)
Maximum speed 4000 rpm
Volume of oil
to release brake 8.2 cm³ (0.5 in³) (new linings)
14.8 cm³ (0.9 in³) (maximum)

Maximum energy input 339,000 joule (250,000 ft-lb)
(one stop, no damage)
Fluid type Mineral base hydraulic oil
Maximum operating temperature 132 °C (270 °F)
Approximate weight 10.9 kg (24 lb)

ORDER INFORMATION (See NOTE on the top of page 5)

NOTE: On oil cooled models (Z option) actual torque is 67% of value shown on torque code chart. Recommended sump oil fluid volume when mounted:
Horizontal - 88.7 mL (3 oz), Vertical - Contact MICO West



SERIES
LM - MICO

OUTPUT FACE
B - SAE B-Mount 2-Bolt

OUTPUT SPLINE / INPUT SPLINE

	SAE Designation
06/06	
13/06	06 = 25.4 mm (1.00") Dia. 6B
13/12	12 = 12T 12/24 used with L2 input face only
13/13	13 = 13T 16/32
15/12	15 = 15T 16/32
15/15	

OPTIONS
(Available separately or in combination)

- S - Speed Sensor
- Z - Oil Cooled - see note above

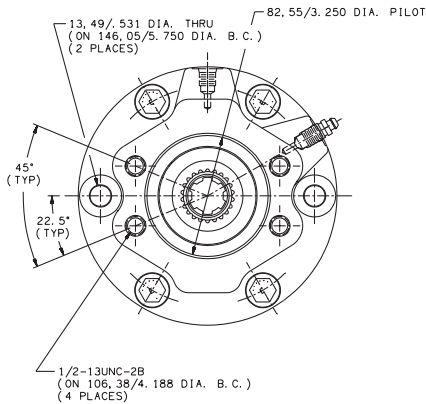
INPUT FACE
M - Modified SAE A-Mount 2 or 4-Bolt
B - SAE B-Mount 2-Bolt
L2 - Eaton Bearingless 2000
N - NEMA

TORQUE

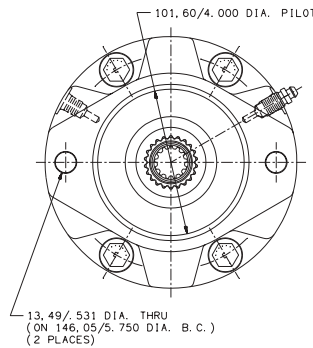
Other configurations consult MICO West.

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
48	542	(4800)	17.9	(260)	21.4	(310)
40	452	(4000)	15.2	(220)	17.9	(260)
35	396	(3500)	20.0	(290)	23.8	(345)
30	339	(3000)	16.5	(240)	20.0	(290)
28	316	(2800)	15.9	(230)	19.3	(280)
24	271	(2400)	12.4	(180)	15.2	(220)
21	237	(2100)	12.4	(180)	14.5	(210)
19	215	(19000)	11.7	(170)	13.8	(200)
17	192	(1700)	9.7	(140)	11.7	(170)
14	158	(1400)	8.3	(120)	10.0	(145)
12	136	(1200)	13.8	(200)	16.2	(235)
10	113	(1000)	11.7	(170)	13.8	(200)

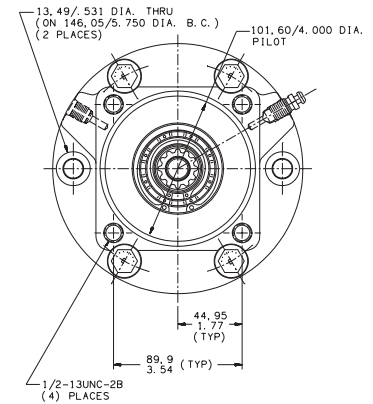
INPUT FACES



M - Modified SAE A-Mount 2 or 4-Bolt



B - SAE B-Mount 2-Bolt

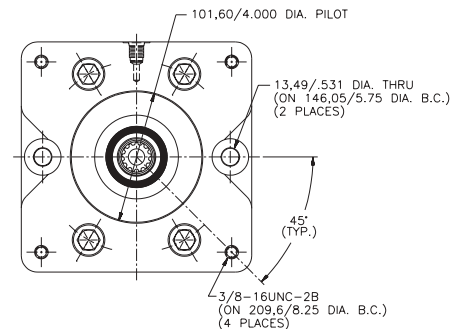


L2 - Eaton Bearingless 2000

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
LMB-130621-M	02-556-328
LMB-130628-M	02-556-378
LMB-130635-M	02-556-336
LMB-130640-M	02-556-358
LMB-131219-L2	02-556-348
LMB-131228-L2	02-556-350
LMB-131240-L2	02-556-352
LMB-131310-B	02-556-322
LMB-131312-B	02-556-330
LMB-131314-B	02-556-318
LMB-131317-B	02-556-332
LMB-131321-B	02-556-326

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
LMB-131324-B	02-556-360
LMB-131328-B	02-556-324
LMB-131330-B	02-556-320
LMB-131335-B	02-556-334
LMB-131340-B	02-556-376
LMB-151240-L2	02-556-428
LMB-151528-B	02-556-404
LMB-151535-B	02-556-340
LMB-151540-B	02-556-392



NEMA Mount



Multiple Disc Brakes (gold series)

Features

- Non-metallic lining material
- Extremely compact design
- Low release pressures
- Full system pressure capacity
- Low actuation volume

Integrated return plate/separators help prevent piston cocking.

Benefits

- Design allows for pressure spikes of up to 4000 psi without affecting cycle life
- One repair kit for all serviceable parts
- Non-metallic lining material contributes

Operation

Braking is provided by stationary friction plates and a rotating disc splined to the shaft. Force is transmitted to the disc pack through the return plate by a series of preloaded springs. The brake is released by hydraulic pressure applied to the piston to compress the springs. The brake is self-applying since any function which reduces the hydraulic system pressure of the brake will start to initiate a brake application. Zero pressure produces maximum brake torque.

High quality ductile iron casting material for strength and durability.

Gasket design and high strength bolts provide high pressure capability and long life.

8620 alloy steel shafts are heat treated for strength and shock resistance.

High performance non-metallic lining materials contribute to high torque, low release pressure.

Chrome silicon die springs for long life and higher torque.



B-Mount Gold Series Brakes



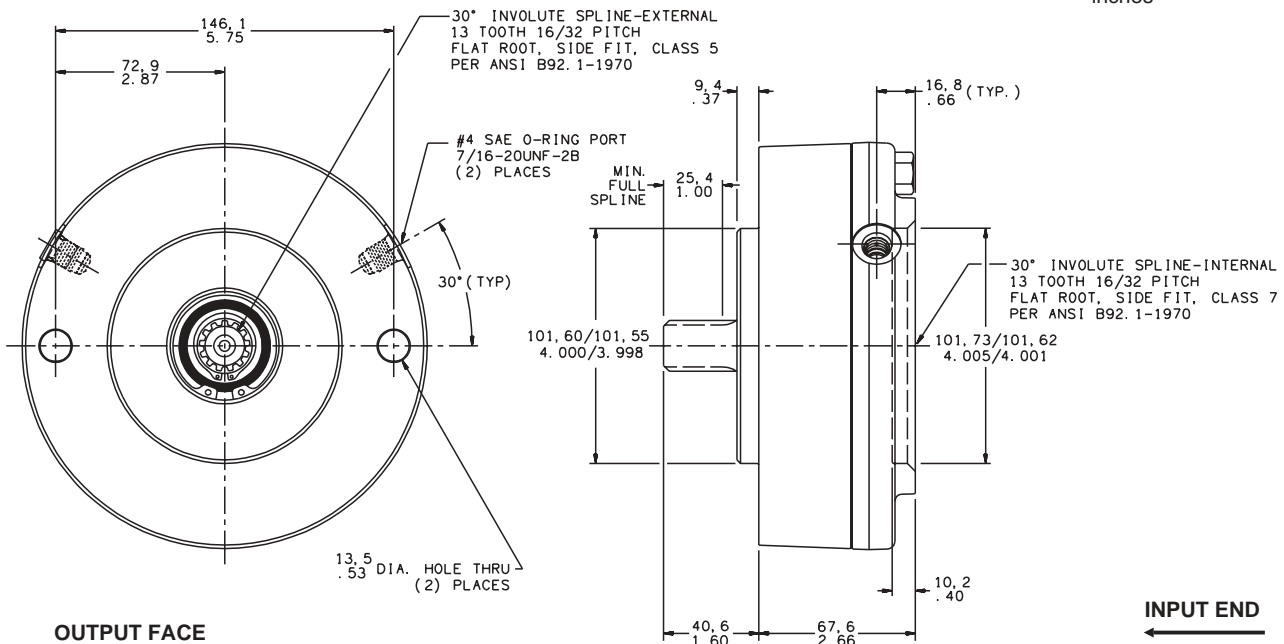
FEATURES

- Non-metallic lining material
- Extremely compact package length
- Low release pressures - ideal for use with closed loop hydraulic systems
- Full system pressure capacity
- Holding torque to 4000 lb-in
- Low actuation volume needed

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-100-002
(GB-131312-B)

millimeters
inches



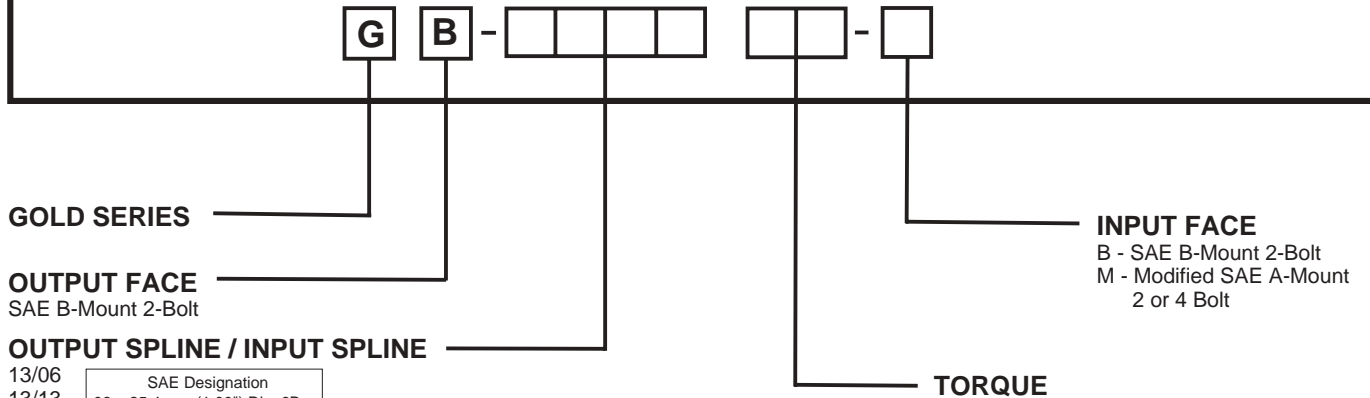
SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 136 - 452 N-m (1200 - 4000 lb-in)
Release pressure range 6.9 - 20.0 bar (100 - 290 psi) initial
7.9 - 23.4 bar (115 - 340 psi) full
Maximum operating pressure 207 bar (3000 psi) continuous
Maximum speed 4000 rpm shaft speed capability specified
is for brake in released condition.
Energy absorption during apply cycle must
be carefully examined for each application.

Volume of oil to release brake 8.2 cm³ (0.5 in³) minimum
14.8 cm³ (0.9 in³) maximum
Spline shaft 30° involute, flat root side fit
per ANSI B92.1 - 1970
Fluid type Mineral base hydraulic oil
Maximum operating temperature 132 °C / 270 °F
Approximate weight 10.3 kg (19 lb)

ORDER INFORMATION (See NOTE on the top of page 5)

Not all of the brake combinations are possible due to certain design limitations.
See below for Catalog Code Numbers already assigned.



GOLD SERIES

OUTPUT FACE
SAE B-Mount 2-Bolt

OUTPUT SPLINE / INPUT SPLINE

13/06
13/13

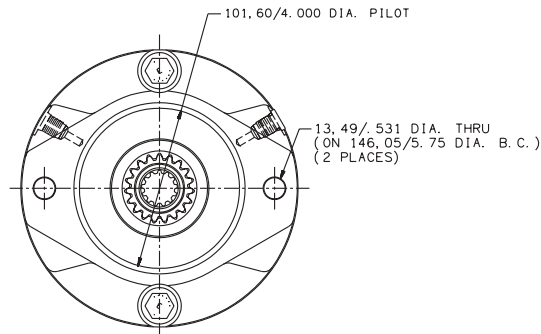
SAE Designation
06 = 25.4 mm (1.00") Dia. 6B
13 = 13T 16/32

Other configurations consult MICO West.

TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
40	452	(4000)	20.0	(290)	23.4	(340)
35	396	(3500)	16.5	(240)	19.3	(280)
28	316	(2800)	13.8	(200)	16.2	(235)
21	237	(2100)	11.3	(165)	13.1	(190)
16	181	(1600)	8.6	(125)	10.0	(145)
14	158	(1400)	7.6	(110)	8.6	(125)
12	136	(1200)	6.9	(100)	7.9	(115)

INPUT FACE



B-SAE B-Mount 2-Bolt

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
GB-130621-M	13-100-028
GB-131312-B	13-100-002
GB-131314-B	13-100-004
GB-131316-B	13-100-006
GB-131321-B	13-100-024
GB-131328-B	13-100-010
GB-131335-B	13-100-012
GB-131340-B	13-100-014
GB-131340-M	13-100-034



ORDER INFORMATION

(See NOTE on the top of page 5) See below for Catalog Code Numbers already assigned.

"Top Hat" Thru-Shaft Motor Brakes



FEATURES

- Mates with Nichols & Sundstrand thru-shaft motors
- Low cost with high torque capacity

THRU-SHAFT BRAKE

PRODUCT CODE

MN - Nichols Series (100, 110, 120 & 130)
MS - Sundstrand

INPUT SPLINE

13 - 13T 16/32

INPUT FACE

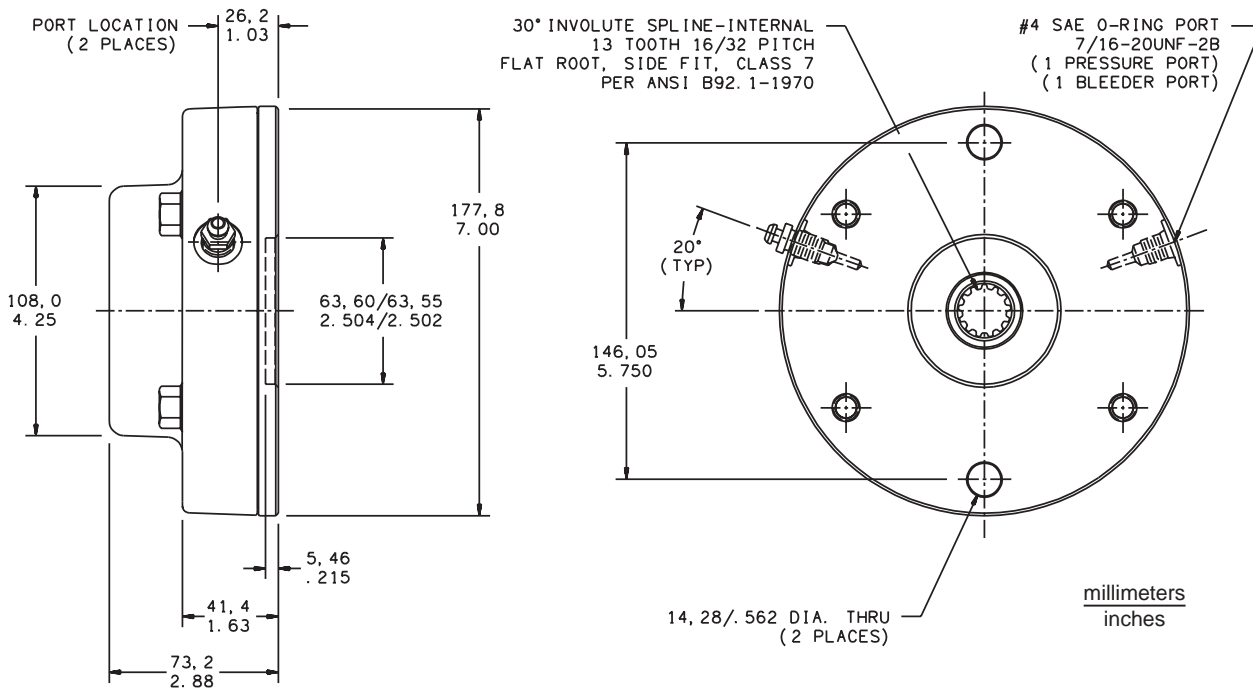
M46 - Sundstrand 6.125" B.C.
M35 - Sundstrand 5.750" B.C.

TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
56	633	(5600)	20.0	(290)	25.5	(370)
42	475	(4200)	15.9	(230)	20.7	(300)
35	396	(3500)	12.4	(180)	16.5	(240)
25	282	(2500)	8.3	(120)	10.3	(150)

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

02-550-116
(MN-1356)



SPECIFICATIONS

Torque rating at 0 bar (0 psi)
back pressure 283 - 633 N-m (2500 - 5600 lb-in)
Release pressure range 10.3 - 25.5 bar (150 - 370 psi)
Maximum operating pressure. 207 bar (3000 psi)
Maximum speed. 1000 rpm (MN)
4000 rpm (MS)

Volume of oil
to release brake 7.4 cm³ (0.45 in³)
Maximum operating temperature 132 °C (270 °F)
Approximate Weight 8.2 kg (18 lb)
Fluid type Mineral base hydraulic oil
Maximum energy input 135,600 joule (100,000 ft-lb)

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
MN-1325	02-550-120
MN-1335	02-550-122
MN-1342	02-550-114
MN-1356	02-550-116
MS-1325-M35	02-550-124
MS-1325-M46	02-550-118

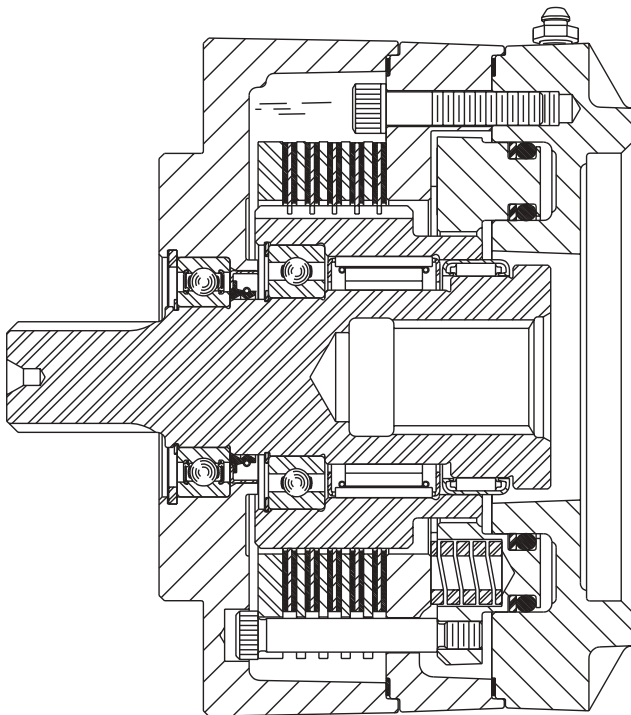


Posi-Torque Winch Brakes

The compact size of these Posi-Torque Winch Brakes permit easy installation into restricted space without requiring special adjustment, alignment, shims or brackets. Large diameter friction discs are possible because of the location of the tension pins. With these large discs the Posi-Torque Brake develops more retarding torque than comparably sized units in use today. The balanced piston design keeps critical components in tension when the brake is engaged. This helps eliminate bending or fracturing due to stress.

If winching is the application, a MICO Spring Apply, Hydraulic Release, Multiple Disc Brake with posi-torque option is the ideal choice. This brake is designed primarily for use on a hydraulically driven winch system. It combines the benefits of allowing one-way winching, positive load positioning and "run-away" protection all in one single, compact package.

Quality pays in performance and reliability



LUBRICATION

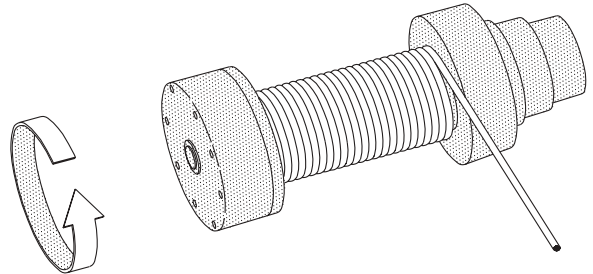
Oils containing slippery or antiwear additives, such as graphite or molybdenum disulfide or extreme pressure (EP) type lubricants, may allow the brake to slip at torque levels below the rated values.

MICO recommends a good grade of ATF, SAE 10 or SAE 20 oil, or Mobil DTE; also oils meeting MIL.7808 or MIL.23699.

Benefits

THE BRAKE "FREE-WHEELS" IN THE LIFT DIRECTION

The MICO Posi-Torque Brake is engaged while the load is being raised. The brake's internal over-riding clutch "free-wheels" allowing travel in only one direction.

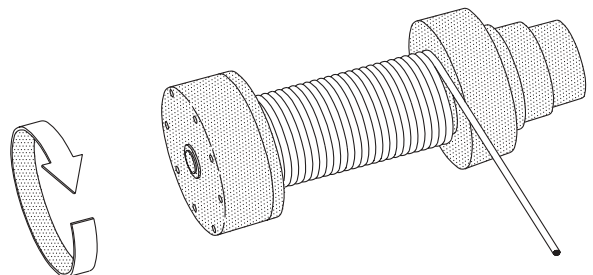


A ONE-WAY POSITIVE POSITIONING WINCH BRAKE

Once the winch stops lifting, the Posi-Torque Brake automatically holds the load in the desired position. Positive load positioning is immediately available because the brake is always engaged. There is no lag time or drift.

SAFE, RUNAWAY PROTECTION WHEN LOWERING THE LOAD

When lowering a load, hydraulic pressure disengages the Posi-Torque Brake. The load can be "powered" down using the winch's hydraulic motor for safe, slow descent. If hydraulic pressure drops and the load begins to runaway from the motor, the MICO Posi-Torque Brake automatically engages to bring the load to a safe controlled stop.





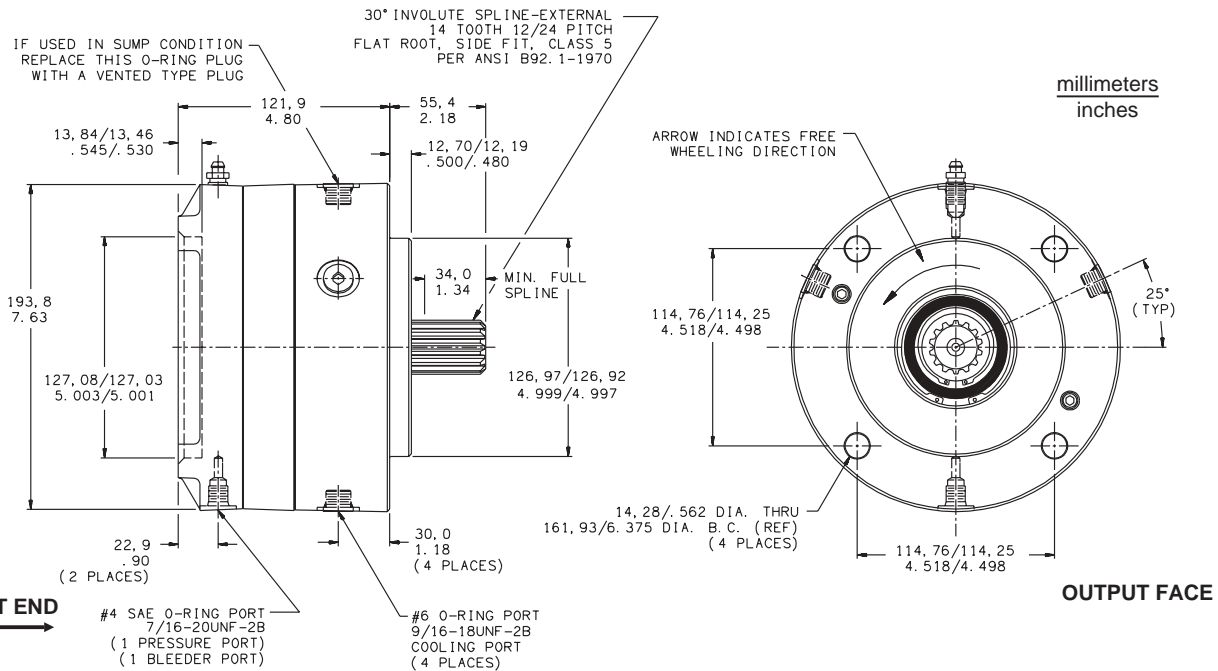
C-Mount Modular Posi-Torque Brakes



FEATURES

- Oil cooled operation
- Nitrile case seals
- Positions the load at the instant the winch stops
- Compact size for easy installation
- Large diameter discs
- Metallic linings for long life
- Hardened high strength steel shafts
- Balanced piston design

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West **13-602-006**
(3CWC-141480-CCC)



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure Oil cooled operation
452 - 904 N-m (4000 - 8000 lb-in)

Release pressure range 13.1 - 25.5 bar (190 - 370 psi)

Maximum operating pressure. 207 bar (3000 psi)

Maximum speed
(Non-free wheeling direction) (Flow thru) 4000 rpm
(Sump) 3000 rpm
(Free wheeling direction) (Flow thru) 4000 rpm
(Sump) 4000 rpm

Optimal flow thru cooling

(wet design) 3.8 - 26.5 L/min (1 - 7 gpm)

Maximum case pressure 2.1 bar (30 psi)

Sump cooling fluid volume
(wet design). 177.4 mL (6 oz)

Volume of oil
to release brake 16.4 cm³ (1.0 in³)

Maximum energy input. 542,400 joule (400,000 ft-lb)
(one stop, no damage)

Fluid type Mineral base hydraulic oil

Maximum operating temperature 132 °C (270 °F)

Approximate weight 19 kg (42 lb)

ORDER INFORMATION (See NOTE on the top of page 5)

See below for Catalog Code Numbers already assigned.

NOTE: Liquid cooled only, not designed for dry applications.
(To be installed in horizontal position only)



**3CW - C-MOUNT
POSI-TORQUE
WINCH BRAKE**

OUTPUT FACE
C - SAE C-Mount
4-Bolt

OUTPUT SPLINE / INPUT SPLINE
04 (internal)/14
14/14

SAE Designation
04 = 14T 12/24
14 = 14T 12/24

Other configurations consult MICO West.

**FREE WHEELING
DIRECTION CODE**
(As you face the output
end of brake)
CC - Counter Clockwise
CW - Clockwise

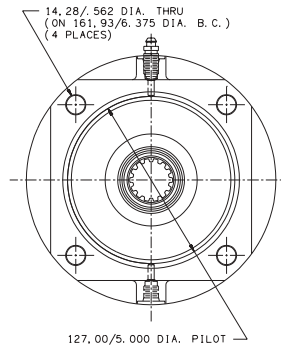
INPUT FACE
C - SAE C-Mount 4-Bolt
M - 4-Bolt and SAE
A-Mount 2-Bolt
K4 - Eaton
Standard 4000
C24 - 2-Bolt and 4-Bolt
C-Mount

TORQUE

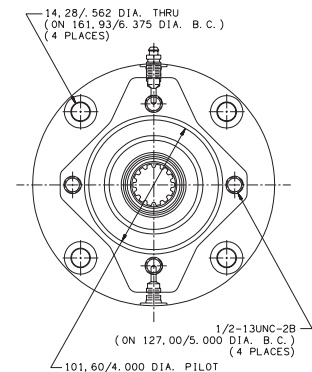
Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
80	904	(8000)	18.6	(270)	25.5	(370)
75	848	(7500)	17.2	(250)	22.7	(330)
70	791	(7000)	15.8	(230)	21.4	(310)
65	734	(6500)	15.2	(220)	20.7	(300)
40	452	(4000)	9.6	(140)	13.1	(190)

NOTE: Torque is coded as wet (liquid cooled) use.

INPUT FACES



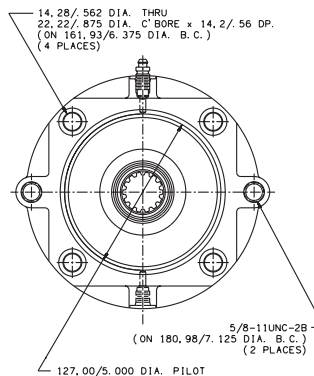
C - SAE C-Mount Standard



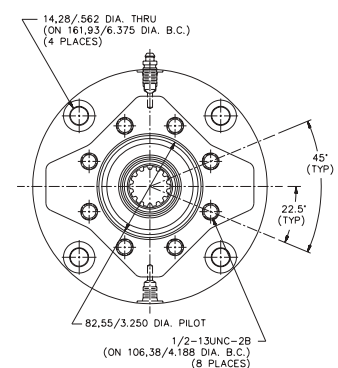
K4 - Eaton Standard 4000

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3CWC-041475-CCW	13-602-002
3CWC-041475-CCC	13-602-014
3CWC-141440-CCC	13-602-022
3CWC-141440-MCW	13-602-004
3CWC-141440-C24CC	13-602-030
3CWC-141440-C24CW	13-602-032
3CWC-141465-CCC	13-602-010
3CWC-141465-CCW	13-602-012
3CWC-141465-MCC	13-602-024
3CWC-141465-MCW	13-602-020
3CWC-141480-CCC	13-602-006
3CWC-141480-CCW	13-602-008
3CWC-141480-K4CW	13-602-016
3CWC-141480-MCC	13-602-018



C24 - 2-Bolt and 4-Bolt C-Mount



M - 4-Bolt and SAE A-Mount 2-Bolt



B-Mount Modular Pressure Override Brakes

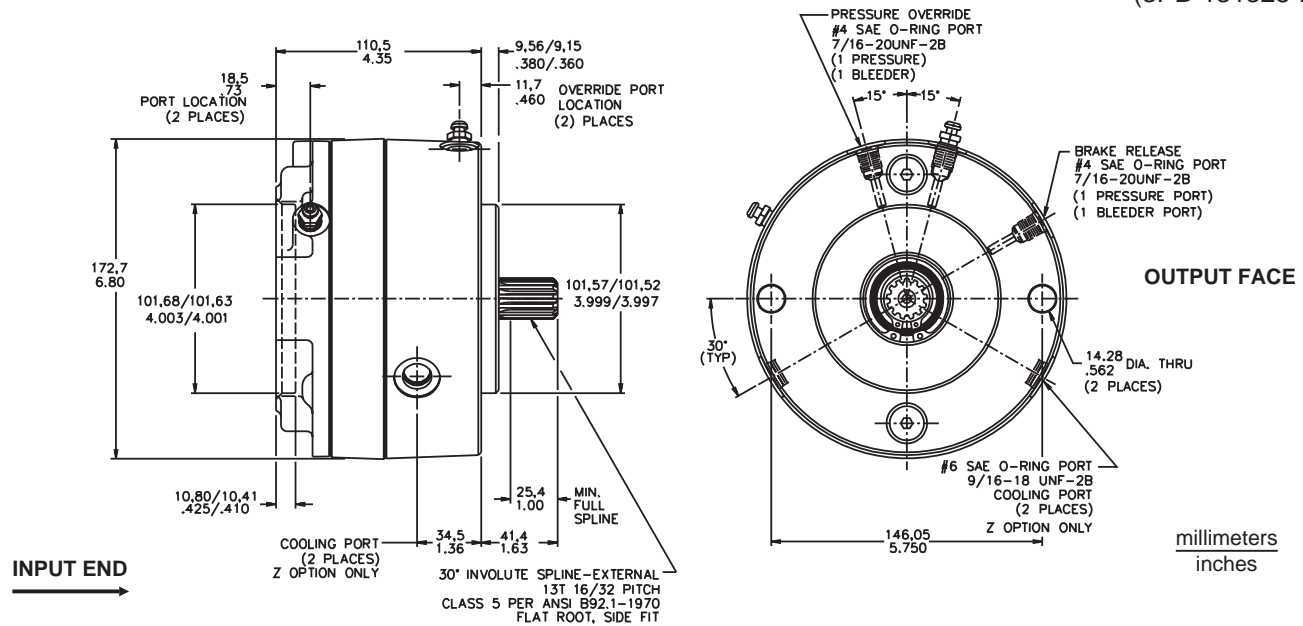


FEATURES

- Secondary system for service braking with fail-safe back up
- Standard SAE mounting flanges
- Service brake can be modulated with automotive type master cylinder or hydraulic valve
- Oil cooled option for added capacity
- Nitrile case seals
- Compact modular design

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-592-036
(3PB-131328-B)



SPECIFICATIONS

FAIL-SAFE BRAKE

Torque range at 0 bar (0 psi)
 back pressure 135.6 - 452 N-m (1200 - 4000 lb-in)
 Release pressure range. 5.5 - 24.1 bar (80 - 350 psi)
 Maximum continuous pressure 207 bar (3000 psi)
 Maximum speed 4000 rpm
 (See note below)

Volume of oil
 to release brake 8.2 cm³ (0.5 in³)
 Fluid type Mineral base hydraulic oil
 Maximum operating temperature 132 °C (270 °F)
 Approximate weight. 13.6 kg (30 lb)
 Optimal flow thru cooling
 (wet design) 3.8 - 26.5 L/min (1 - 7 gpm)
 Maximum case pressure 2.1 bar (30 psi)
 Sump cooling fluid volume (wet design)
 (horizontal) 88.7 mL (3 oz)
 (vertical) Contact MICO West

SERVICE BRAKE

Maximum torque (dry design) 452 N-m (4000 lb-in)
 (wet design) 384.2 N-m (3400 lb-in)
 Calculated torque (dry design) T = 5.50 x (psi - 80)
 (wet design) T = 3.70 x (psi - 80)
 Maximum operating pressure (wet design) 69 bar (1000 psi)
 (dry design) 55.2 bar (800 psi)
 Maximum energy input
 (wet or dry design). 189,840 joule (140,000 ft-lb)
 (one stop, no damage)
 Maximum energy input rate
 (dry design) 54,240 joules per s (40,000 ft-lb per s)
 (one stop, no damage)
 (wet design) 108,480 joules per s (80,000 ft-lb per s)
 (one stop, no damage)
 Piston volume 3.0 cm³ (0.18 in³)
 Fluid type Mineral base hydraulic oil

NOTE: Due to energy capacity limitations, maximum speed at time of service apply is dependent on product application.

ORDER INFORMATION (See NOTE on the top of page 5)

See below for Catalog Code Numbers already assigned.

NOTE: On oil cooled models (Z option) actual torque is 67% of value shown on torque code chart.



**3P - PRESSURE
OVERRIDE**

OUTPUT FACE
B - SAE B-Mount
2-Bolt

OUTPUT SPLINE / INPUT SPLINE

13/06	SAE Designation
13/13	06 = 25.4 mm (1.00") Dia. 6B 13 = 13T 16/32

OPTION

Z - Oil Cooled - see note above

INPUT FACE

B - SAE B-Mount
M - 4-Bolt and SAE
A-Mount 2-Bolt

TORQUE

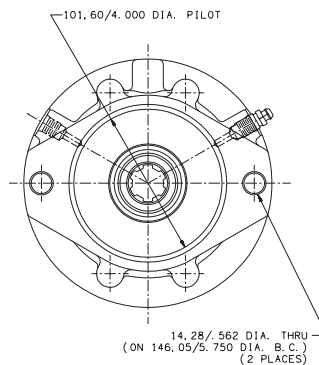
Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
60 *	678	(6000)	20.0	(290)	24.1	(350)
52 *	588	(5200)	17.2	(250)	20.7	(300)
40	452	(4000)	13.8	(200)	16.5	(240)
35	396	(3500)	12.4	(180)	14.5	(210)
28	316	(2800)	9.6	(140)	11.7	(170)
24	271	(2400)	8.3	(120)	10.3	(150)
19	215	(1900)	7.6	(110)	9.0	(130)
16	181	(1600)	6.2	(90)	7.6	(110)
12	136	(1200)	4.8	(70)	5.5	(80)

NOTE: Because of the sophisticated nature of Pressure Override Brakes, we ask that you complete the data sheet for pressure override applications in the back of this catalog or at www.mico.com. Submit written data sheets to:

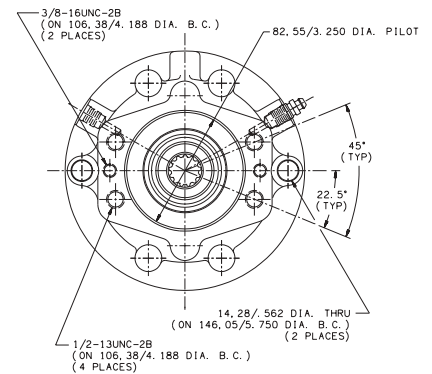
**MICO West Division,
701 East Francis Street
Ontario, CA 91761 U.S.A.
Attention: Engineering**

* Maximum dry torque is 4000 lb-in, 5200 lb-in, & 6000 lb-in are used only for coding of 3500 & 4000 oil cooled version brakes.

INPUT FACES



B - SAE B-Mount



M - 4-Bolt and SAE A-Mount 2-Bolt

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3PB-130612-M	13-592-044
3PB-130635-M	13-592-002
3PB-130640-M	13-592-004
3PB-130640-MZ	13-592-024

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3PB-131328-B	13-592-036
3PB-131335-B	13-592-010
3PB-131340-B	13-592-042
3PB-131340-MZ	13-592-022



C-Mount Modular Pressure Override Brakes

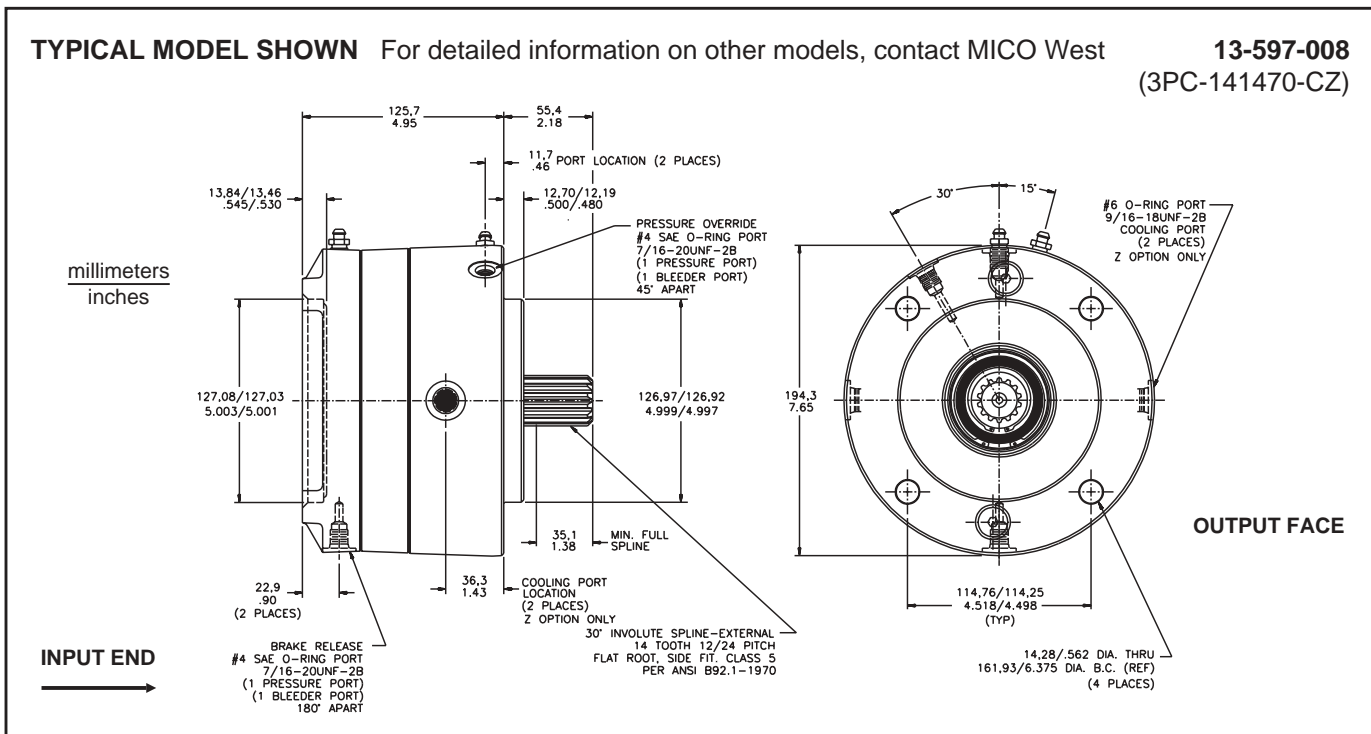


FEATURES

- Secondary system for service braking with fail-safe back-up
- Standard SAE mounting flanges
- Service brake can be modulated with automotive type master cylinder or hydraulic valve
- Oil cooled option for added capacity
- Nitrile case seals
- Compact modular design

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-597-008
(3PC-141470-CZ)



SPECIFICATIONS

FAIL-SAFE BRAKE

Torque range at 0 bar (0 psi)
back pressure 407 - 1107 N-m (3600 - 9800 lb-in)
Release pressure range 9.7 - 25.5 bar (140 - 370 psi)
Maximum continuous pressure 207 bar (3000 psi)
Maximum speed 4000 rpm
(See note below)

Volume of oil
to release brake 16.4 cm³ (1.0 in³)
Fluid type Mineral base hydraulic oil
Maximum operating temperature 132 °C (270 °F)
Approximate weight 20 kg (44 lb)
Optimal flow thru cooling
(wet design) 3.8 - 26.5 L/min (1 - 7 gpm)
Maximum case pressure 2.1 bar (30 psi)
Sump cooling fluid volume (wet design)
(horizontal) 118.3 mL (4 oz)
(vertical) Contact MICO West

SERVICE BRAKE

Maximum torque (dry design) 1062 N-m (9400 lb-in)
(wet design) 700.6 N-m (6200 lb-in)
Calculated torque (dry design) $T = 10.10 \times (\text{psi} - 70)$
(wet design) $T = 6.66 \times (\text{psi} - 70)$
Maximum operating pressure 69 bar (1000 psi)
Maximum energy input
(wet or dry design). 406,800 joule (300,000 ft-lb)
(one stop, no damage)
Maximum energy input rate
(dry design) 101,700 joule per sec (75,000 ft-lb per sec)
(one stop, no damage)
(wet design) 203,400 joule per sec (150,000 ft-lb per sec)
(one stop, no damage)
Piston volume 5.2 cm³ (0.32 in³)
Fluid type Mineral base hydraulic oil

NOTE: Due to energy capacity limitations, maximum speed at time of service apply is dependent on product application.

ORDER INFORMATION (See NOTE on the top of page 5)

See below for Catalog Code Numbers already assigned.

NOTE: On oil cooled models (Z option) actual torque is 67% of value shown on torque code chart.



3P - PRESSURE OVERRIDE

OUTPUT FACE
C - SAE C-Mount
4-Bolt

OUTPUT SPLINE / INPUT SPLINE

14/00	SAE Designation
14/06	00 = used with "R" only
14/14	06 = 25.4 mm (1.00") Dia. 6B 14 = 14T 12/24

Other configurations consult MICO West.

OPTIONS
(Available separately or in combination)
S - Speed Sensor
Z - Oil Cooled - see note above

INPUT FACE

- M - 4-Bolt and SAE A-Mount 2-Bolt
- K4 - Eaton Standard 4000
- C - SAE C-Mount Standard
- C24 - 2-Bolt and 4-Bolt C-Mount
- R - Closed Face

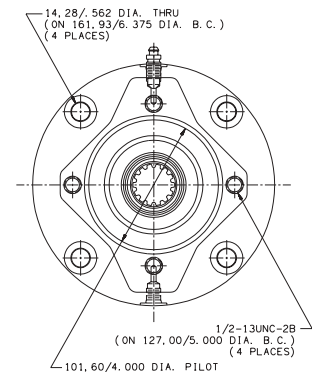
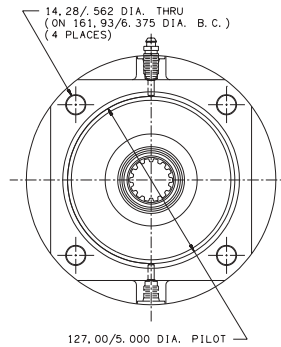
TORQUE

NOTE: Because of the sophisticated nature of Pressure Override Brakes, we ask that you complete the data sheet for pressure override applications in the back of this catalog or at www.mico.com. Submit written data sheets to:

**MICO West Division,
701 East Francis Street
Ontario, CA 91761 U.S.A.
Attention: Engineering**

Code	Torque Rating	Initial Release Pressure		Full Release Pressure	
		bar	(psi)	bar	(psi)
98	1107 (9800)	18.6	(270)	25.5	(370)
80	904 (8000)	15.2	(220)	20.7	(300)
70	791 (7000)	13.8	(200)	19.3	(280)
55	622 (5500)	11.0	(160)	15.2	(220)
45	508 (4500)	8.3	(120)	11.7	(170)
36	407 (3600)	6.9	(100)	9.6	(140)

INPUT FACES

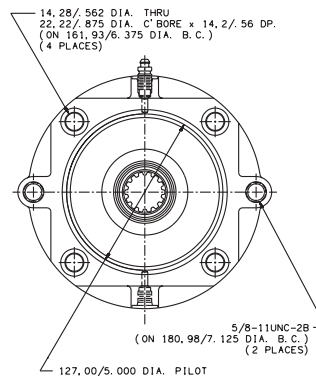


ASSIGNED NUMBERS

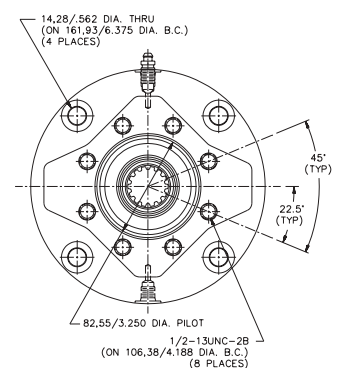
CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
3PC-140080-R	13-597-032
3PC-140645-M	13-597-034
3PC-140670-MZ	13-597-044
3PC-140680-M	13-597-026
3PC-141436-C	13-597-014
3PC-141436-C24	13-597-042
3PC-141445-C24Z	13-597-030
3PC-141455-C	13-597-002
3PC-141455-CZ	13-597-016
3PC-141470-C	13-597-004
3PC-141470-CZ	13-597-008
3PC-141480-C	13-597-018
3PC-141480-CZ	13-597-024
3PC-141436-M	13-597-040
3PC-141498-C	13-597-010

C - SAE C-Mount Standard

K4 - Eaton Standard 4000



C24 - 2-Bolt and 4-Bolt C-Mount



M - 4-Bolt and SAE A-Mount 2-Bolt



Large Wheel Mount Brakes (motor input)



FEATURES

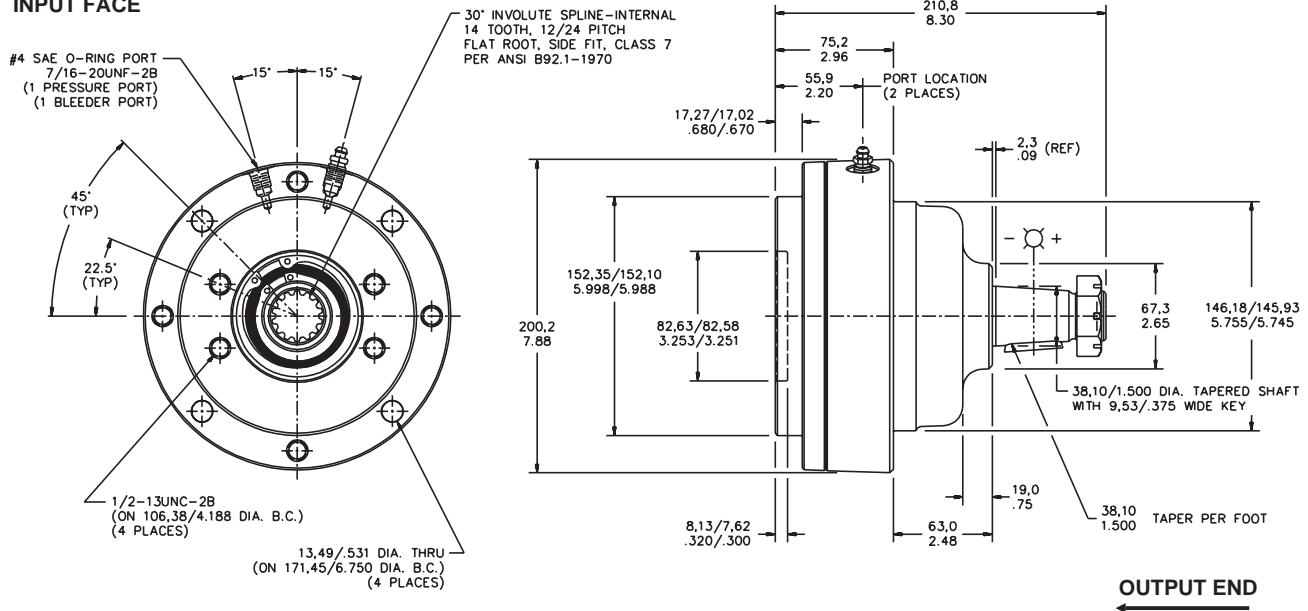
- Provision for direct mounting of brake to wheels
- Heat treated 8620 shafts
- Complete self contained dry design package
- Torques to 1695 N-m (15,000 lb-in)
- Full system pressure capability
- Includes castle nut

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-587-002
(WH-501415-M)

millimeters
inches

INPUT FACE



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 904 - 1695 N-m (8000 - 15,000 lb-in)
Release pressure range 21.4 - 34.5 bar (310 - 500 psi)
Maximum operating pressure. 207 bar (3000 psi)
Maximum speed 1000 rpm
Volume of oil
to release brake 9.8 cm³ (0.6 in³)

Maximum energy input 339,000 joule (250,000 ft-lb)
(one stop, no damage)
Fluid type Mineral base hydraulic oil
Maximum operating temperature 132 °C (270 °F)
Approximate weight 17.2 kg (38 lb)

ORDER INFORMATION (See NOTE on the top of page 5)

See below for Catalog Code Numbers already assigned.

NOTE: Dry Design only, not for oil cooled applications.



WH - WHEEL MOUNT BRAKE

OUTPUT SHAFT / INPUT SHAFT

50/12
50/14

SAE Designation
12 = 12T 12/24 modified (as required for Char-Lynn 2000 Bearingless)
14 = 14T 12/24
50 = 38.1 mm (1.50") Keyed, Taper

Other configurations consult MICO West.

(contact MICO West for details on input face views not shown.)

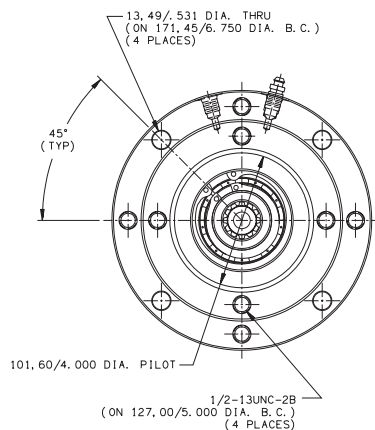
INPUT FACE

- M - 4-Bolt and SAE
- A-Mount 2-Bolt
- L2 - Eaton Bearingless 2000
- K4 - Eaton Standard 4000

TORQUE

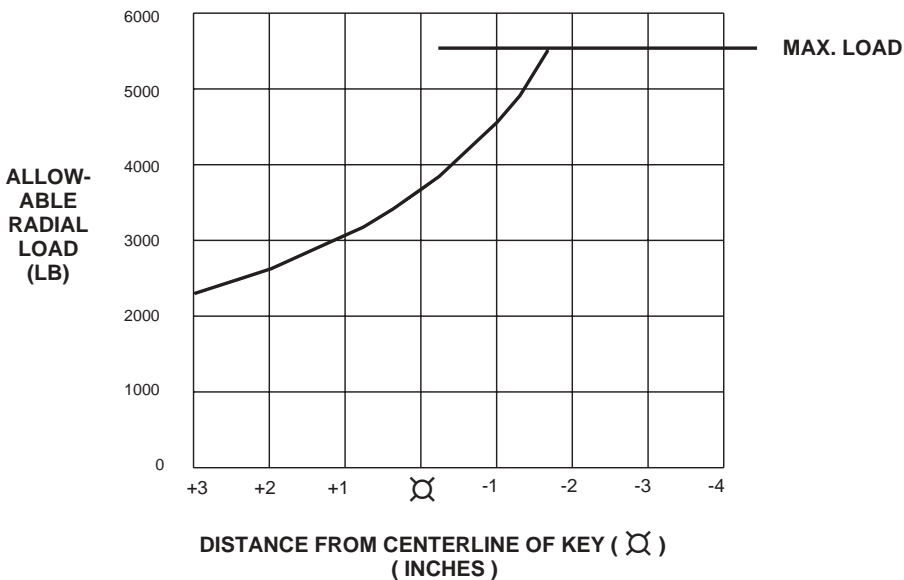
Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
80	904	(8000)	14.5	(210)	21.4	(310)
15	1695	(15,000)	23.4	(340)	34.5	(500)
12	1356	(12,000)	20.7	(300)	31.0	(450)
10	1130	(10,000)	17.9	(260)	26.2	(380)

INPUT FACE



L2 - Eaton Bearingless 2000

**LOAD CAPACITY @ 100 RPM AND B₁₀ = 6500 HRS
325 RPM AND B₁₀ = 2000 HRS**



(Refer to drawing on previous page)

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
WH-501215-L2	13-587-004
WH-501280-L2	13-587-006
WH-501415-M	13-587-002
WH-501415-K4	13-587-008
WH-501480-M	13-587-012

THRUST LOAD CAPACITY:

1100 lb max. @ 100 rpm & 2000 hrs B₁₀ life.
(Based on constant 3700 lb side load at centerline of key)



Large Wheel Mount Brakes (closed input)

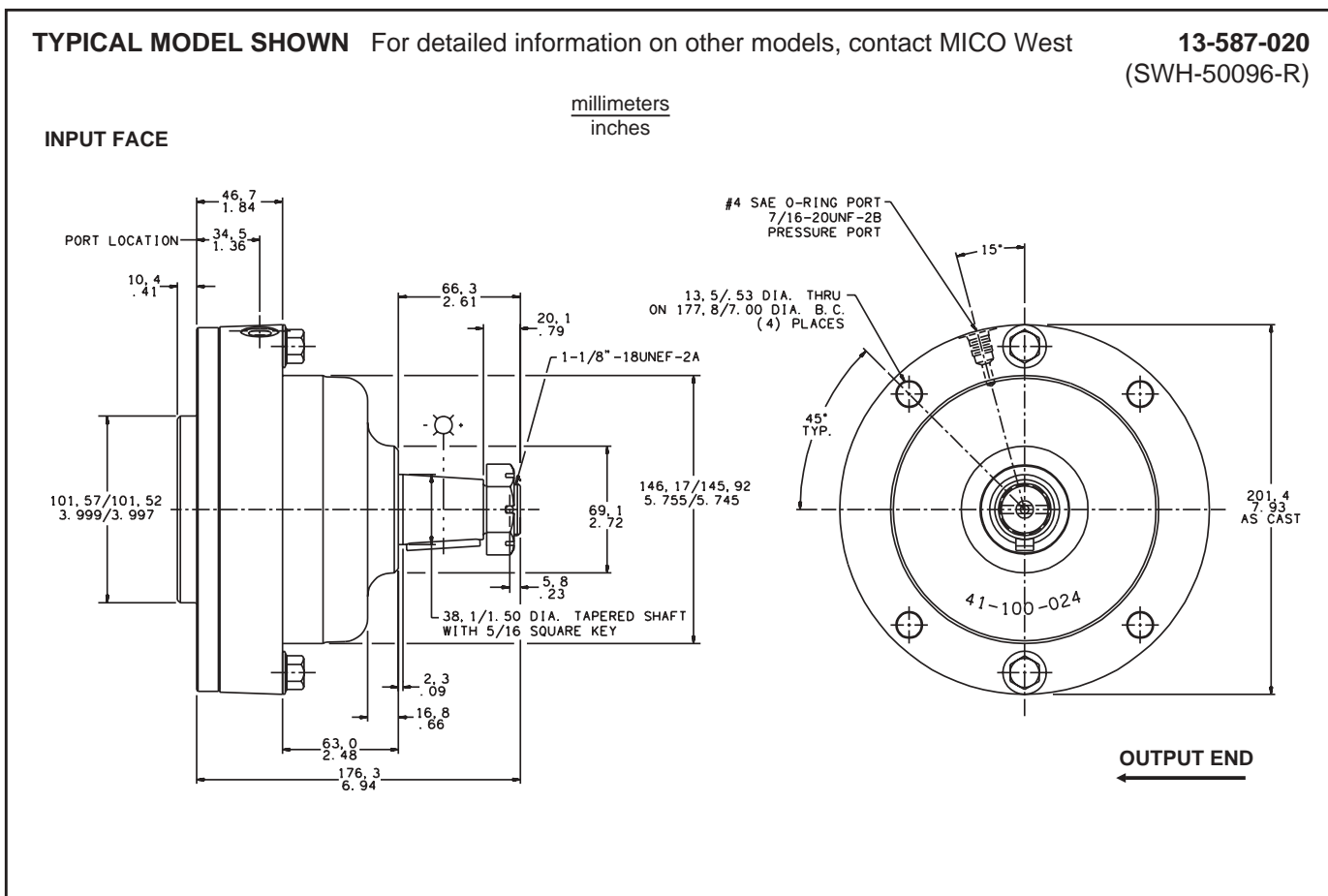


FEATURES

- Automotive type linings
- Provides direct mounting of brake to wheels
- Heat treated 8620 shafts
- Low release pressures - ideal for use with closed-loop hydrostatic systems
- Brake torques up to 1356 N-m (12,000 lb-in)
- Full system pressure capability
- Includes castle nut

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-587-020
(SWH-50096-R)



SPECIFICATIONS

Torque range at 0 bar (0 psi)

back pressure 904 - 1356 N-m (8000 - 12,000 lb-in)

Release pressure range. 21.37 - 34.5 bar (310 - 500 psi)

Maximum operating pressure. 207 bar (3000 psi)
241 bar (3500 psi intermittent)

Maximum speed 1000 rpm

Volume of oil to release brake 9.8 cm³ (0.6 in³)

Fluid type Mineral base hydraulic oil

Maximum operating temperature 132 °C (270 °F)

Approximate weight 17.2 kg (38 lb)

ORDER INFORMATION (See NOTE on the top of page 5)

Not all of the brake combinations are possible due to certain design limitations.
See below for Catalog Code Numbers already assigned.



**SWH - WHEEL MOUNT
BRAKE**

OUTPUT SHAFT

50

SAE Designation
50 = 38.1 mm (1.50") Keyed, Taper

CLOSED INPUT

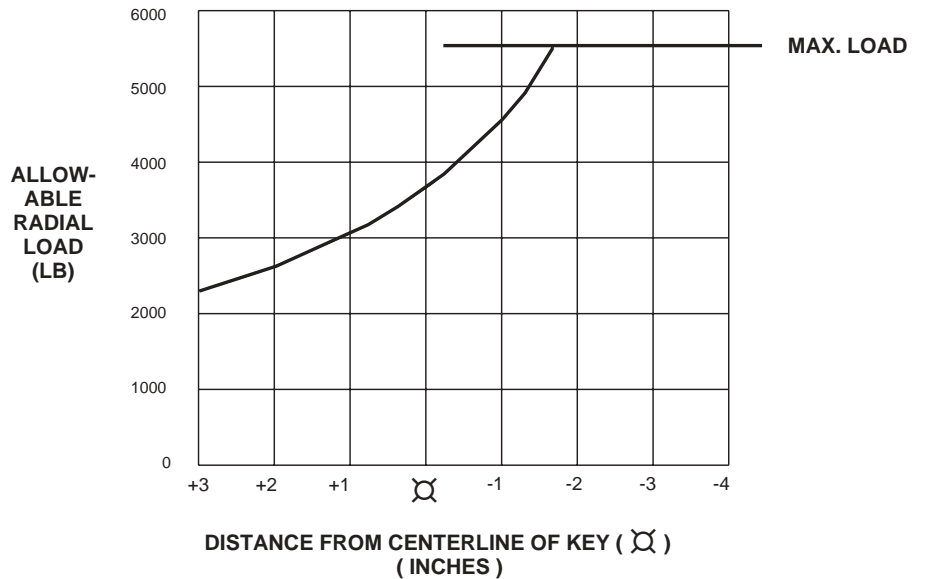
(contact MICO West for details on input face views not shown.)

INPUT FACE
R - Closed Face

TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
96	1085	(9600)	26.9	(390)	31.7	(460)
54	6102	(5400)	24.1	(350)	27.6	(400)
14	1582	(14,000)	40.0	(580)	45.5	(660)
11	1243	(11,000)	30.1	(445)	37.2	(540)

LOAD CAPACITY @ 100 RPM AND B₁₀ = 6500 HRS 325 RPM AND B₁₀ = 2000 HRS



(Refer to drawing on previous page)

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
SWH-500011-R	13-587-016
SWH-500054-R	13-587-024
SWH-500096-R	13-587-020

THRUST LOAD CAPACITY:

1100 lb max. @ 100 rpm & 2000 hrs B₁₀ life.
(Based on constant 3700 lb side load at centerline of key)



Mini Wheel Mount Brakes (closed input)

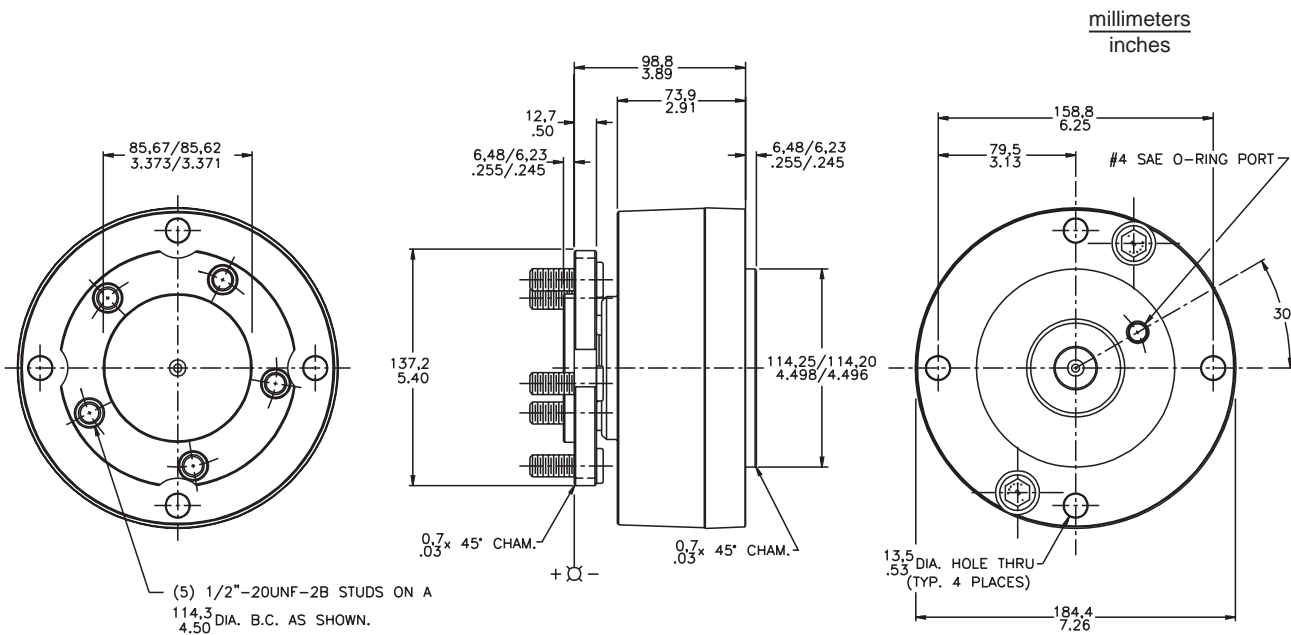


FEATURES

- Non-metallic type linings
- Provides direct mounting of brake to wheel
- Low release pressures - ideal for use with closed-loop hydrostatic systems
- Brake torques up to 1130.0 N-m (10,000 lb-in)
- Full system pressure capability
- Integral hub eliminates the need for an adaptor
- Superior radial wheel load capacities

TYPICAL MODEL SHOWN For detailed information on other models, contact MICO West

13-587-072
(MW-054560-R)



SPECIFICATIONS

Torque range at 0 bar (0 psi)
back pressure 170 - 1130 N-m (1500 to 10,000 lb-in)
Release pressure range 6.9 - 27.6 bar (100 - 400 psi)
Maximum sustained operating pressure 207 bar (3000 psi)
(4000 psi intermittent)
Maximum speed 200 rpm
Maximum operating temperature 93 °C (200 °F)
Approximate weight 10.4 kg (23 lb)

Volume of oil to release brakes 8.2 cm³ (0.5 in³) minimum
14.8 cm³ (0.9 in³) maximum
Fluid type Mineral base hydraulic oil

ORDER INFORMATION (See NOTE on the top of page 5)

Not all of the brake combinations are possible due to certain design limitations.
See below for Catalog Code Numbers already assigned.



**MW - MINI WHEEL
BRAKE**

WHEEL MOUNT CONFIGURATION

0440 = 4-Bolt on 4.00" BC
0445 = 4-Bolt on 4.50" BC
0545 = 5-Bolt on 4.50" BC
5000 = 38.1 mm (1.50") Keyed, Taper

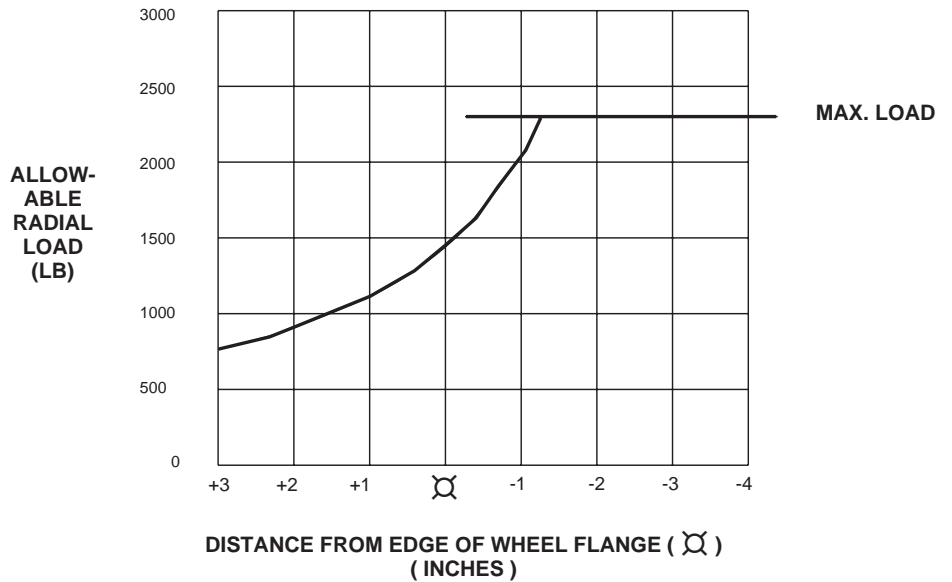
(contact MICO West for details on input
face views not shown.)

INPUT FACE
R - Closed Face

TORQUE

Code	Torque Rating		Initial Release Pressure		Full Release Pressure	
	N-m	(lb-in)	bar	(psi)	bar	(psi)
90	1017	(9000)	24.1	(385)	29.0	(460)
60	678	(6000)	33.8	(490)	40.0	(580)
51	576	(5100)	25.2	(385)	29.6	(460)
40	452	(4000)	21.0	(335)	24.0	(385)
35	396	(3500)	18.6	(300)	21.0	(340)
25	283	(2500)	14.5	(230)	16.2	(260)
10	1130	(10,000)	25.2	(400)	29.6	(470)

LOAD CAPACITY @ 100 RPM AND B₁₀ = 6500 HRS 325 RPM AND B₁₀ = 2,000 HRS



(Refer to drawing on previous page)

ASSIGNED NUMBERS

CATALOG CODE NUMBER	PRODUCTION ORDER NUMBER
MW-054535-R	13-587-074
MW-054560-R	13-587-072
MW-054590-R	13-578-082
MW-500051-R	13-587-080

THRUST LOAD CAPACITY:

300 lb max. @ 100 rpm & 2000 hrs B₁₀ life.
(Based on constant 290 lb side load at edge
of wheel flange)

Repair Kit Cross Reference

02-550-114		13-538-004		13-538-048		13-538-242	
02-550-116		13-538-006		12-501-241	BEARING KIT	13-538-244	
02-500-153	REPAIR KIT	13-538-008		12-501-243	LINING KIT	12-501-241	BEARING KIT
02-500-154	SPRING KIT	13-538-010		12-501-244	SPRING KIT	12-501-244	SPRING KIT
20-060-083	LINING KIT	13-538-012		12-501-246	SEAL KIT	12-501-245	LINING KIT
		12-501-241	BEARING KIT			12-501-246	SEAL KIT
		12-501-244	SPRING KIT				
02-550-118		12-501-245	LINING KIT	13-538-050		13-538-272	
02-500-157	SPRING KIT	12-501-246	SEAL KIT	12-501-242	BEARING KIT	12-501-241	BEARING KIT
02-500-158	SEAL KIT			12-501-243	LINING KIT	12-501-243	LINING KIT
20-060-085	LINING KIT			12-501-244	SPRING KIT	12-501-244	SPRING KIT
				12-501-246	SEAL KIT	12-501-246	SEAL KIT
		13-538-016					
02-550-120		13-538-020		13-538-052		13-538-274	
02-550-122		12-501-242	BEARING KIT	12-501-241	BEARING KIT	12-501-241	BEARING KIT
02-500-153	REPAIR KIT	12-501-244	SPRING KIT	12-501-243	LINING KIT	12-501-244	SPRING KIT
02-500-154	SPRING KIT	12-501-245	LINING KIT	12-501-244	SPRING KIT	12-501-245	LINING KIT
20-060-083	LINING KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT
02-550-124		13-538-022		13-538-054		13-538-290	
02-500-154	SPRING KIT	13-538-024		12-501-241	BEARING KIT	12-501-242	BEARING KIT
02-500-153	REPAIR KIT	13-538-026		12-501-244	SPRING KIT	12-501-243	LINING KIT
20-060-083	LINING KIT	12-501-241	BEARING KIT	12-501-245	LINING KIT	12-501-244	SPRING KIT
		12-501-244	SPRING KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT
		12-501-245	LINING KIT				
02-556-318		12-501-246	SEAL KIT	13-538-056		13-538-294	
02-556-322				12-501-242	BEARING KIT	12-501-241	BEARING KIT
02-556-324		13-538-028		12-501-243	LINING KIT	12-501-244	SPRING KIT
02-556-326		12-501-241	BEARING KIT	12-501-244	SPRING KIT	12-501-245	LINING KIT
02-556-328		12-501-243	LINING KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT
02-556-330		12-501-244	SPRING KIT				
02-556-332		12-501-246	SEAL KIT	13-538-058		13-538-300	
02-556-334				13-538-060		12-501-242	BEARING KIT
02-556-336				12-501-241	BEARING KIT	12-501-243	LINING KIT
02-500-141	REPAIR KIT			12-501-243	LINING KIT	12-501-244	SPRING KIT
02-500-142	BEARING KIT			12-501-244	SPRING KIT	12-501-245	LINING KIT
20-060-100	LINING KIT			12-501-246	SEAL KIT	12-501-246	SEAL KIT
02-556-340		13-538-030		13-538-064		13-538-318	
02-500-167	SEAL KIT	12-501-241	BEARING KIT	12-501-241	BEARING KIT	12-501-241	BEARING KIT
02-500-168	BEARING KIT	12-501-244	SPRING KIT	12-501-243	LINING KIT	12-501-244	SPRING KIT
20-060-100	LINING KIT	12-501-245	LINING KIT	12-501-244	SPRING KIT	12-501-245	LINING KIT
		12-501-246	SEAL KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT
02-556-360		13-538-032		13-538-066		13-538-320	
02-556-376		12-501-244	SPRING KIT	13-538-200		12-501-242	BEARING KIT
02-500-141	REPAIR KIT	12-501-245	LINING KIT	12-501-241	BEARING KIT	12-501-243	LINING KIT
02-500-142	BEARING KIT	12-501-246	SEAL KIT	12-501-244	SPRING KIT	12-501-244	SPRING KIT
20-060-100	LINING KIT	12-501-253	BEARING KIT	12-501-245	LINING KIT	12-501-246	SEAL KIT
				12-501-246	SEAL KIT		
02-556-404		13-538-034		13-538-202		13-538-324	
02-500-167	SEAL KIT	12-501-243	LINING KIT	12-501-243	LINING KIT	12-501-241	BEARING KIT
02-500-168	BEARING KIT	12-501-244	SPRING KIT	12-501-244	SPRING KIT	12-501-244	SPRING KIT
20-060-100	LINING KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT
		12-501-253	BEARING KIT				
02-556-428		13-538-036		13-538-230		13-538-370	
12-501-426	O-RING KIT	13-538-038		12-501-241	BEARING KIT	13-538-372	
12-501-427	BEARING KIT	12-501-242	BEARING KIT	12-501-243	LINING KIT	12-501-241	BEARING KIT
20-060-107	LINING KIT	12-501-243	LINING KIT	12-501-244	SPRING KIT	12-501-244	SPRING KIT
		12-501-244	SPRING KIT	12-501-245	LINING KIT	12-501-245	LINING KIT
		12-501-246	SEAL KIT	12-501-246	SEAL KIT	12-501-246	SEAL KIT
13-100-002		13-538-040		13-538-232		13-538-376	
13-100-004		13-538-042		12-501-241	BEARING KIT	13-538-382	
13-100-006		13-538-044		12-501-243	LINING KIT	12-501-241	BEARING KIT
13-100-008		12-501-241	BEARING KIT	12-501-244	SPRING KIT	12-501-244	SPRING KIT
13-100-010		12-501-244	SPRING KIT	12-501-246	SEAL KIT	12-501-245	LINING KIT
13-100-012		12-501-245	LINING KIT			12-501-246	SEAL KIT
13-100-014		12-501-246	SEAL KIT	13-538-234			
12-501-388	REPAIR KIT			13-538-236			
				12-501-242	BEARING KIT		
13-100-028		13-538-046		12-501-243	LINING KIT		
13-100-034		12-501-242	BEARING KIT	12-501-244	SPRING KIT		
12-501-402	REPAIR KIT	12-501-243	LINING KIT	12-501-246	SEAL KIT		
		12-501-244	SPRING KIT				
		12-501-246	SEAL KIT				

13-592-002
13-592-004
13-592-010
12-501-339 SEAL KIT
12-501-340 BEARING KIT
12-501-341 SPRING KIT
12-501-342 LINING KIT

13-592-022
13-592-024
12-501-339 SEAL KIT
12-501-340 BEARING KIT
12-501-341 SPRING KIT
12-501-343 LINING KIT

13-592-036
13-592-042
12-501-339 SEAL KIT
12-501-340 BEARING KIT
12-501-341 SPRING KIT
12-501-342 LINING KIT

13-592-044
12-501-339 SEAL KIT
12-501-340 BEARING KIT
12-501-341 SPRING KIT

13-597-002
13-597-004
12-501-320 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-008
12-501-321 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-010
12-501-320 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-016
12-501-321 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-018
12-501-320 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-022
13-597-024
12-501-321 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-026
12-501-320 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-030
12-501-321 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-032
12-501-320 LINING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT
12-501-325 BEARING KIT

13-597-034
13-597-040
13-597-042
12-501-320 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-597-044
12-501-321 LINING KIT
12-501-322 BEARING KIT
12-501-323 REPAIR KIT
12-501-324 SPRING KIT

13-602-002
13-602-004
13-602-006
13-602-008
13-602-010
13-602-012
13-602-014
13-602-016
13-602-018
13-602-020
13-602-022
13-602-030
13-602-032
12-501-094 BEARING KIT
12-501-214 LINING KIT
12-501-294 SPRING KIT
12-501-295 SEAL KIT

NOTES



Multiple Disc Brake Data Sheet

(For Winch or Holding Type Applications Only)

(confidential)

This data sheet must be completed in its entirety for warranty consideration.

Estimated Annual Usage _____ Date _____

Name _____ Title _____

Company _____

Address _____ City _____ State _____ Zip _____

Fax _____ Phone _____ Country _____

Email _____

Is this a military application? Yes No If yes, what is the destination country? _____

Is this an underground coal mine application? Yes No

SPECIFICATIONS

Winch manufacturer and model no. _____

Load weight (lb) _____ Empty vehicle weight (lb) _____

Outer diameter of cable when fully reeled on drum _____ inches

Gearbox manufacturer and model no. _____ Gear ratio _____

Minimum release pressure available _____ psi

Maximum pressure seen at brake _____ psi

Motor manufacturer and model no. _____ Maximum torque _____ lb-in

Maximum motor speed _____ rpm

Is this application required to conform with recommended practices or standards, if so which ones _____

(Free wheeling direction only required for "Posi-Torque" brake applications)

Free wheeling direction as you face the output end of brake Clockwise Counter clockwise

BRAKE MOUNTING REQUIREMENTS

Brake input side Mounting pilot SAE callout A B C D M

Brake output side Mounting pilot SAE callout A B C D M

Brake input side spline shaft SAE designation _____ Internal External

Brake output side spline shaft SAE designation _____ Internal External

Other desired options _____

Comments _____

NOTICE

Component and system recommendations made by MICO, Incorporated are based on information supplied by potential user and/or system designer. The potential user and/or designer must make final acceptance and approval of components and system after testing performance on an actual application for which system was designed.

MICO is a registered trademark of MICO, Incorporated. MICO is registered in the U.S. Patent and Trademark Office as well as in Australia, Canada, Great Britain, Indonesia, Japan, Peoples Republic of China, and South Korea.

MICO, Incorporated

1911 Lee Boulevard (Zip Code 56003-2507)
P.O. Box 8118 / North Mankato, MN 56002-8118 U.S.A.
☎ 507.625.6426 **Facsimile** 507.625.3212

MICO West Division

701 East Francis Street (Zip Code 91761-5514)
P.O. Box 9058 / Ontario, CA 91762-9058 U.S.A.
☎ 909.947.4077 **Facsimile** 909.947.6054

Web Site: www.mico.com



Multiple Disc Brake Data Sheet

(For Vehicle Parking or Emergency Stop Applications Only) (confidential)

This data sheet must be completed in its entirety for warranty consideration.

Estimated Annual Usage _____ Date _____

Name _____ Title _____

Company _____

Address _____ City _____ State _____ Zip _____

Fax _____ Phone _____ Country _____

Email _____

Is this a military application? Yes No If yes, what is the destination country _____

Is this an underground coal mine application? Yes No

SPECIFICATIONS

Type of vehicle or machine: _____ Name and model no. _____

Gross vehicle weight _____ lb Empty vehicle weight _____ lb

Weight distribution loaded: front _____ lb or % rear _____ lb or %

Weight distribution empty: front _____ lb or % rear _____ lb or %

Wheelbase _____ inch Center of gravity (vertical): _____ loaded _____ empty

Rolling radius: front _____ inch rear _____ inch

Gearbox manufacturer and model no. _____ gear ratio _____

Maximum loaded speed (level) _____ mph

Maximum grade in favor of load _____ %

Number of brakes per machine _____ Location of brakes _____

Minimum release pressure available _____ psi

Maximum pressure seen at brakes _____ psi

Motor manufacturer and model no. _____ maximum torque _____ lb

Is this application required to conform with recommended practices or standards, if so which ones _____

BRAKE MOUNTING REQUIREMENTS

Brake input side mounting pilot SAE callout A B C D M

Brake output side mounting pilot SAE callout A B C D M

Brake input side spline shaft SAE designation _____ Internal External

Brake output side spline shaft SAE designation _____ Internal External

Other desired options _____

Comments _____

NOTICE

Component and system recommendations made by MICO, Incorporated are based on information supplied by potential user and/or system designer. The potential user and/or designer must make final acceptance and approval of components and system after testing performance on an actual application for which system was designed.

MICO is a registered trademark of MICO, Incorporated. MICO is registered in the U.S. Patent and Trademark Office as well as in Australia, Canada, Great Britain, Indonesia, Japan, Peoples Republic of China, and South Korea.

MICO, Incorporated

1911 Lee Boulevard (Zip Code 56003-2507)
P.O. Box 8118 / North Mankato, MN 56002-8118 U.S.A.
☎ 507.625.6426 **Facsimile** 507.625.3212

MICO West Division

701 East Francis Street (Zip Code 91761-5514)
P.O. Box 9058 / Ontario, CA 91762-9058 U.S.A.
☎ 909.947.4077 **Facsimile** 909.947.6054

Web Site: www.mico.com



Multiple Disc Brake Data Sheet

(For Service Braking or Pressure Override Brakes Only)

(confidential)

This data sheet must be completed in its entirety for warranty consideration.

Estimated Annual Usage _____ Date _____

Name _____ Title _____

Company _____

Address _____ City _____ State _____ Zip _____

Fax _____ Phone _____ Country _____

Email _____

Is this a military application? Yes No If yes, what is the destination country? _____

Is this an underground coal mine application? Yes No

SPECIFICATIONS

Type of vehicle or machine: _____ Name and model no. _____

Gross vehicle weight _____ lb Empty vehicle weight _____ lb

Weight distribution loaded: front _____ lb or % rear _____ lb or %

Weight distribution empty: front _____ lb or % rear _____ lb or %

Wheelbase _____ inch Center of gravity (vertical): _____ loaded _____ empty

Rolling radius: front _____ inch rear _____ inch

Gearbox manufacturer and model no. _____ Gearbox ratio _____

Number of brakes per machine _____ Location of brakes _____

Maximum loaded speed (level) _____ mph

Maximum grade in favor of load _____ %

Rate of deceleration desired: Stop in _____ ft from _____ mph or _____ ft/s²

Coefficient of friction between tire and ground (estimated) _____ Type of road surface _____

Desired lining life (number of stops) _____

Duty cycle _____

Cooling flow available (wet brake option only) _____ gal/min

Minimum release pressure available _____ psi

Maximum pressure seen at brakes _____ psi

Motor manufacturer and model no. _____ maximum torque _____ lb

Maximum motor speed _____ rpm

Is this application required to conform with recommended practices or standards, if so which ones _____

BRAKE MOUNTING REQUIREMENTS

Brake input side mounting pilot SAE callout A B C D M

Brake output side mounting pilot SAE callout A B C D M

Brake input side spline shaft SAE designation _____ Internal External

Brake output side spline shaft SAE designation _____ Internal External

Other desired options _____

Comments _____

(Fill in the following only if a pressure override brake is requested)

Maximum available service brake pressure (psi) _____ fluid type _____

NOTICE

Component and system recommendations made by MICO, Incorporated are based on information supplied by potential user and/or system designer. The potential user and/or designer must make final acceptance and approval of components and system after testing performance on an actual application for which system was designed.

MICO is a registered trademark of MICO, Incorporated. MICO is registered in the U.S. Patent and Trademark Office as well as in Australia, Canada, Great Britain, Indonesia, Japan, Peoples Republic of China, and South Korea.

MICO, Incorporated

1911 Lee Boulevard (Zip Code 56003-2507)
P.O. Box 8118 / North Mankato, MN 56002-8118 U.S.A.
☎ 507.625.6426 **Facsimile** 507.625.3212

MICO West Division

701 East Francis Street (Zip Code 91761-5514)
P.O. Box 9058 / Ontario, CA 91762-9058 U.S.A.
☎ 909.947.4077 **Facsimile** 909.947.6054

Web Site: www.mico.com

NOTES

NOTES

MULTIPLE DISC BRAKE LIMITED WARRANTY

MICO, Incorporated warrants each new MICO Multiple Disc Brake to be free from defects in material and workmanship under normal use and service for twenty-four (24) months from date of original purchase.

Any part thereof which proves to be inoperative in material or workmanship in normal use will be repaired or replaced, at the sole discretion of MICO. This warranty does not include any charges for labor, travel or installation — the sole obligation of MICO being to repair or replace the warranty qualified unit. In addition, MICO is in no way liable for damages to a MICO Product, user's property or any personal injuries that are traceable to improper installation or use.

WARRANTY RETURN POLICY

1. All units should be returned freight prepaid.
 - A. Please contact MICO West 909.947.4077 for a Return Goods Authorization (RGA) Number.
 - B. A detailed description must accompany the unit for reason of return.
2. Any units qualifying for warranty will be repaired or replaced.
3. If a unit is found to be operable, you have two options:
 - A. The unit can be returned to you against a service charge for inspection, cleaning and routine replacement of all rubber components and any other parts that show wear, plus freight.
 - B. We can dispose of the unit.

This warranty does not extend to any products which have been subject to misuse, accident, or improper application, installation or maintenance; nor does it extend to products which have been repaired or altered outside of the MICO plant unless authorized in writing by MICO or unless such installation, repair or alteration is performed by MICO; nor does this warranty extend to any labor charges for removal and/or replacement of nonconforming or inoperative product or part thereof. THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, AND IN NO EVENT WILL MICO BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

All return units must be sent directly to MICO West.

MICO has made every attempt to present accurate information in catalogs, brochures, and other printed material. MICO can accept no responsibility for errors from unintentional oversights that may exist. Due to a continuous program of product improvement, both materials and specifications are subject to change without notice or obligation. Refer to www.mico.com for the most recent versions of our literature. If you have any further questions, please call MICO.



MICO, Incorporated

1911 Lee Boulevard (Zip Code 56003-2507)
P.O. Box 8118 / N. Mankato, MN 56002-8118 U.S.A.
☎ 507.625.6426 Facsimile 507. 625.3212

MICO West Division

01 East Francis Street (Zip Code 91761-5514)
P.O. Box 9058 / Ontario, CA 91762-9058 U.S.A.
☎ 909.947.4077 Facsimile 909.947.6054

Web Site: www.mico.com

MICO is a registered trademark of MICO, Incorporated. MICO is registered in the U.S. Patent and Trademark Office as well as in Australia, Canada, Great Britain, Indonesia, Japan, Peoples Republic of China, and South Korea.

Form No. 84-500-001
Revised 12/19/03

Printed in U.S.A.