KOBELT DISC BRAKES

GENERAL INFORMATION

Kobelt Manufacturing ha been de igning and manufacturing di c brake y tem for over 30 year . We have gained an enviable reputation for co t-effective performance and reliability.

Kobelt di c brake are u ed in all corner of the world. The application we erve are limitle . Sale and ervice are available from di tributor throughout the world.

Mo t of our older brake caliper were manufactured in and ca t bronze. Increa ed demand prompted u to apply our exten ive knowledge of bronze die-ca ting technology to a whole new erie of brake . Caliper model 5019-5028 are made entirely of die-ca t ilicon bronze with tainle teel hardware. While older model are till available upon pecial reque t, the new erie i much more uniform in de ign and i al o more co t-effective.

All our caliper are available in either fluid or pring applied configuration . Several type of brake lining are al o available to conform with environmental guideline .

APPLICATIONS

- Aerospace
- Cable spooling reels
- Cable trams
- Chair lifts
- Conveyor belt systems
- Draw work disc brakes, both on land and off-shore
- Drill ship anchor handling
- Hoists
- Industrial equipment
- Logging and forestry
- Mining
- Paper industry
- Pipe laying barges
- Propellor shaft brakes, from 40 - 50,000 H.P.
- Railroad equipment
- Sugar industry
- Wind generators

DISC BRAKE SELECTION

Selecting the proper brake di c and brake caliper i important and can only be accompli hed if all the information pertaining to the operation of the braking y tem i made available to Kobelt Manufacturing.

When completing the application form, it i be t to con ider the mo t challenging operating condition . If a brake run 95% of the time on the light-duty cycle, and 5% on the heavy-duty cycle, it i the 5% that mu t be con idered when electing a braking y tem.

Di c brake are u ed in innumerable type of application . A tatic holding brake obviou ly require very little con ideration. Stopping brake are relatively imple. Ten ioning and cycling brake can become very complex. We have in-hou e computer program to a i t our cu tomer in electing the proper combination of brake di c and brake caliper.

The information that we provide i reliable within 5%, and include a 20% afety margin. If a brake di c, however, i poorly in talled (no air circulation), overheating, di c failure and premature lining wear may re ult.

When in talling a brake di c that i running at elevated temperature , it i of extreme importance to allow for di c expan ion and contraction in operation. Bolt hole for attaching a di c hould be over- ized and pigot ID mu t have clearance. Failing to leave allowance for di c expan ion and contraction may re ult in early di c failure.

Contact Kobelt Manufacturing with the detail of your pecific application. Let u help you elect the mo t uitable di c brake y tem to top your machinery afely and effectively.

CE ISO 9001 Kobelt i ISO 9001:2000 certified.

Braking y tem having to ab orb continuou energy require a di c that i capable of ab orbing and radiating the input energy to atmo phere. The brake caliper mu t al o have ufficient lining area to absorb the energy without going beyond the Pressure Velocity Ratio. The PV ratio should never exceed 250,000; that is to ay, pound per quare inch of lining pre ure and feet per minute rubbing peed. No general rule can be given in thi area ince all the factor of a braking y tem mu t be con idered before making a definite choice. Small brake hoe uch a the 5019 and 5020 are not uited for continuou energy input unle , of cour e, the energy is very small. The table (below) shows the horsepower hour (H.P. hour) before brake lining replacement become nece ary. In other words, a 5020 brake caliper can absorb 1733 H.P. hour before brake lining replacement become nece ary. If, however, the temperature exceed 650°-700° F, the lining will di appear at a much fa ter rate. Looking at brake caliper 5026, you will note that 27,160 H.P. hour of energy input into the lining i available. Again, if elevated temperature occur, lining wear will accelerate. It i therefore extremely important to fir t of all pick a di c that i capable of ab orbing the energy and a brake caliper having ufficient lining to give a rea onable ervice life for the brake lining.

The di c thickne i al o pecified on the table and the minimum lining thickne before lining replacement hould take place.

Caliper	5019		5020		5021		5022		5023		5024		5025		5026		5027		5028	
	-A	-S	-A	-S	-A	-S	-A	-S	-A	-S	-A	-S	-A	-S	-A	-S	-A	-S	-A	-S
Weight/lbs.	15	17	36	42	53	59	92	102	52	61	97	108	104	113	177	186	165	186	330	349
Maximum Clamp Force (lbs.)	5,250		9,160		9,160		18,320		16,000		25,740		17,160		32,000		48,000		48,000	
Lever Ratio	3.5:1		3.8:1		3.8:1		3.8:1		4.12:1		4.29:1		4.29:1		4.0:1		4.0:1		4.0:1	
Actual Force each ide (lb . per actuator)	750		1,200		1,200		1,200		2,000		3,000		2,000		2,000		3,000		3,000	
Number of Levers	2		2		2		4		2		2		2		4		4		4	
Total Shoe Area (square inches)	18		26		60		86		60		75		120		194		114		420	
Lining Thickne (inche)	5/16		3/8		1/2		1/2		1/2		5/8		5/8		5/8		5/8		0.7	
Maximum Allowance Lining Wear (inche)	.140		.200		.300		.300		.300		.420		.420		.420		.420		.500	
H.P. Hour	840		1,733		6,000		8,600		6,000		10,500		16,800		27,160		15,900		69,000	
Disc Maximum Thickness (inches)	3/4		1 1/4		2		2		2		2		4		4		2		4	
Disc Diameter (inches)	9-20		12-30		18-60		18-60		18-60		18-60		24-72		30-72		30-72		42.5-96	
Disc Rubbing Face Width (inches)	2		2 1/2		4		4		4		4		7		7		4		10	
Pipe Fitting (Fluid Applied) NPT	1 of 1/4"		2 of 1/4"		2 of 1/4"		4 of 1/4"		2 of 1/4"		2 of 1/4"		2 of 1/4"		4 of 1/4"		4 of 1/4"		4 of 1/4"	
Volume In^3 Maximum (Fluid Applied)	9		30		30		60		55		90		55		110		180		180	
Pipe Fitting (Spring Applied) NPT	1 of 1/4"		1 of 1/4"		1 of 1/4"		2 of 1/4"		1 of 3/8"		1 of 3/8"		1 of 3/8"		2 of 3/8"		2 of 3/8"		2 of 3/8"	
Volume In^3 Maximum (Spring Applied)	9		19		19		38		48		48		48		96		96		96	

WHY ARE KOBELT BRAKE CALIPERS THE BEST?

Kobelt caliper are de igned for the har he t environment . Very little maintenance i required becau e of the rugged con truction. Our many patented feature put the e brake in a cla by them elve .

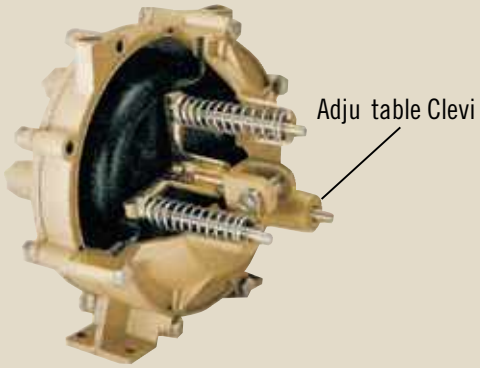
All caliper are lever operated, which keep the actuator away from the heat of the di c. The actuator them elve are of the low pressure type, requiring maximum 100 P.S.I. (6.9 bar) for pressure applied brakes and maximum 140 P.S.I. (9.6 bar) (fully relea ed) for pring applied caliper . Either air or hydraulic pre ure can be u ed. For application with high-pre ure hydraulic , pecial actuator are available. All actuator have adju table clevi e to adju t the clearance between the di c and the hoe. Thi can compen ate for brake lining wear a well a maintain the torque on pring applied caliper . On fluid applied brake caliper air con umption can be reduced by maintaining little clearance between the hoe and the di c.

The pre ure applied to the brake i ab olutely proportional to the brake torque it elf. Therefore, our actuator , both fluid and pring applied, lend them elve extremely well to application requiring preci e control over the brake torque. All brake caliper , (except Model 1720) u e floating brake hoe . A balancing link (patented) i utilized to keep the hoe parallel to the di c, which en ure even lining wear acro the whole hoe. Spring applied caliper are furthermore equipped with an equalizing link. Thi linkage arrangement keep the hoe centered in relation to the di c. Thi i u eful, hould the caliper be in talled on a horizontally rotating di c, where one of the brake hoe could cau e drag. All of our caliper have a large hoe area, giving long lining life. The lining are a be to -free.

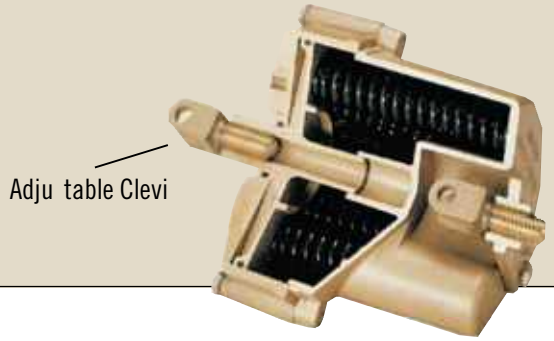
Kobelt di c brake are manufactured under one or more of the following Patent Numbers. (Further patents pending.)

Canadian Patent Number	U.S. Patent Number
895693	3722636
922603	3815471
1069066	4013148
1072025	4060153
1158181	4108285
1176187	4121697
	4164993
	4236608
	4393962
	4572335

Typical Fluid Applied Actuator



Typical Spring Applied Actuator



CUSTOM ACTUATORS

Kobelt Manufacturing offer many actuator that can be fitted to variou brake caliper . The tandard actuator are ba ically all low pre ure device in either pring or fluid et. We make a large variety of actuator for high pre ure fluid applied application , a well a high and medium pre ure pring applied actuator . If you have any pecific requirement plea e let u know. Mo t of our caliper are al o available in tandard or ide mount ver ion. Our Engineering Department will be plea ed to come up with a olution to uit your application.