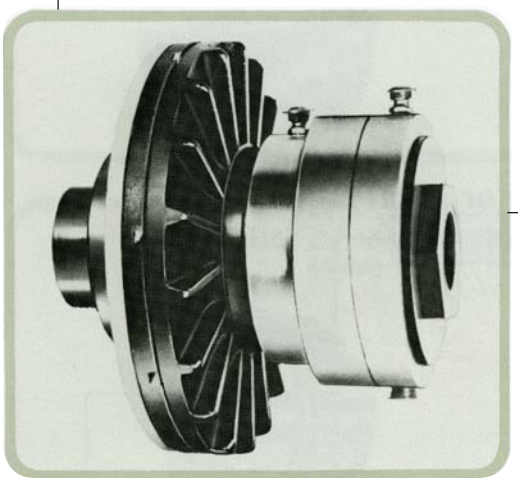
Off Highway
Brakes & Clutches

Matrix® International

An Altra Industrial Motion Company

Pilot Mount

Pressure Applied Single-Face Pilot-Mount Clutches



Stationary Cylinder for Dry Operation

Matrix "Air Champ™" single-face pneumatic clutches are designed for dry use. The pressure supply is fed into the cylinder via a flexible tube. The piston and cylinder sub-assembly is mounted on bearings. Positive disengagements are achieved by usage of return springs.

Features

- Does not require adjustment
- Sealed cylinder ensures low air consumption
- Stationary cylinder allows simple supply connection
- Torques can be varied by regulating supply pressure
- Speed of engagement can be controlled by varying the supply flow rate
- Single friction face with finned pressure plate ensures efficient heat dissipation
- Single friction face design virtually eliminates drag torque
- Axial thrusts contained within unit
- Alignment control within unit simplifies installation

Typical Applications

Ideal for rapid cycling duties, tensioning and torque limiting applications in the following industries:

- Textiles
- Paper Mills
- Presses
- Belts
- Roller Mills
- Plastics and Plastic Film

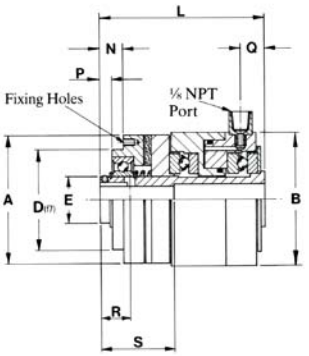
For Technical Assistance Call

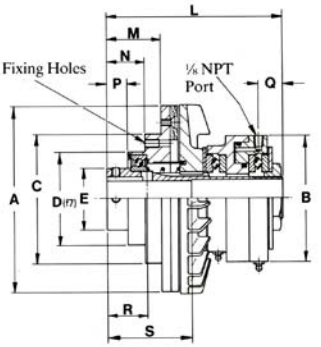
800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL			BW-PM	FW-PM	LW-PM	MW-PM	HW-PM	XHW-PM
Performance Data								
Rated Static Torque at 5.5 bar/80 psi		Nm	15	30	50	140	340	630
		ft-lbs	11	22	36	104	250	465
Rated Dynamic Torque at 5,5 bar/80 psi		Nm	10	20	33	94	227	420
		ft-lbs	7.5	15	25	69	168	310
Dimensional Data (all dimensions in mm)								
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1 NF.E22-175 (Bores other than standard can be obtained by special order)		ins	0.625 3/16 x 3/32	0.875 3/16 x 3/32	1.125 5/16 x 1/8	—	1.875 ½ x 5/32	—
		mm	15 5 x 2.3	20 6 x 2.8	25 8 x 3.3	40 12 x 3.3	50 14 x 3.8	60 18 x 4.4
		mm	—	—	—	30 8 x 3.3	—	—
Minimum Bore		mm	12.5	12.5	15.7	25.2	34.7	41.1
Diameters (all dimensions in mm)								
A			70	118	152	207	254	279
B			73	89	99	137	175	216
C			—	89	108	140	180	238
D (f7)		ins	2.125	2.50	3.00	4.00	4.875	7.00
		mm	53.98	63.50	76.20	101.60	123.83	177.80
E			25	35	48	67	83	85
Lengths								
L			89	121	141	186	216	260
M			—	32	40	59	74	107
N			13	26	32	41	50	63
P			6.6	11.4	15.7	21.8	12.2	13.5
Q			13	19	19	22	30	28
R (keyway length)			16	27	35	35	65	96
S (bore length)			38	64	83	102	102	127
Fixing Holes								
Number			4	4	4	4	4	6
Size		ins	10-32 UNC	1/4-20 UNC	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC	5/8-11 UNC
P.C.D.		ins	2.438	3.00	3.50	4.75	5.625	8.50
		mm	61.91	76.20	88.90	120.65	142.88	215.90
Depth			6.4	9.7	12.7	14.2	14.2	16
Set Screws								
Size		ins	8-32 UNC	1/4-20 UNC	1/4-20 UNC	3/8-16 UNC	3/8-16 UNC	3/8-16 UNC



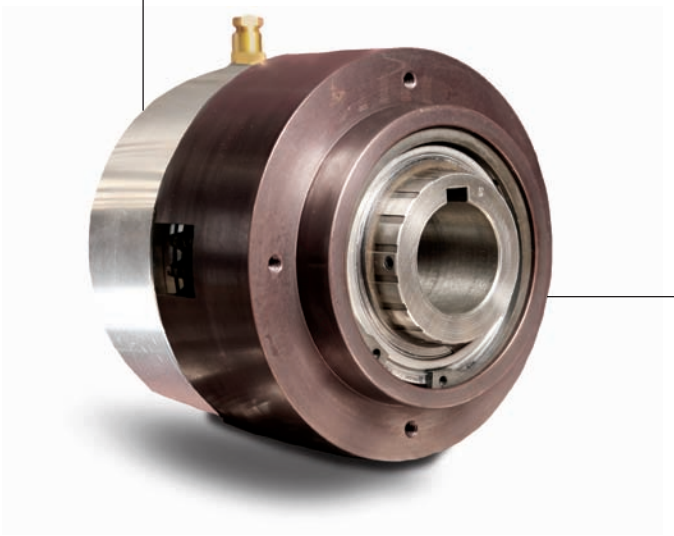


Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-1-MX 5/09 Printed in USA

4H/54H-P

Series 4H and 54H-P Pressure Applied Multi-Disc Clutches



Stationary Cylinder for Dry Operation

Series 4H pressure-applied stationary cylinder multi-disc clutches are designed for dry use. Pressure supply feeds into cylinder via a flexible tube. Piston and cylinder sub-assembly mounts on shielded ball bearings. Positive disengagement achieved by use of release springs between inner plates. Standard drive rings available as optional extras.

Series 54H-P clutches developed from series 4H clutches, incorporate a pilot mount. Pilot mount with the drive ring integral is supported on an extended hub by a rigid shielded double bearing assembly. Pulleys, sprockets and other drive components can fit directly to pilot mount, which has a toleranced spigot diameter for location and tapped fixing holes. By using a suitable adaptor, a flexible coupling can fit to the pilot mount, connecting co-axial shafts which are beyond the alignment limits of series 4H clutches.

Features

- Clutch requires no adjustment
- Shielded bearings need no lubrication in service
- Stationary cylinder allows simple supply connection
- Torques can be varied by regulating supply pressure
- Engagement speed controlled by varying pressure supply flow rate
- Large friction area gives extended plate life
- Individual plate separation ensures low drag torque
- Multi-disc design results in compact high torque clutch
- No axial thrusts transmitted to adjacent components
- All concentricities controlled within the clutch simplifying intallation
- Pilot mount can be used to attach pulleys, sprockets and other drive components simplifying assemply

Typical Applications

- High Cyclic On/Off Applications
- Packaging
- Printing
- PTO's
- Test Rigs

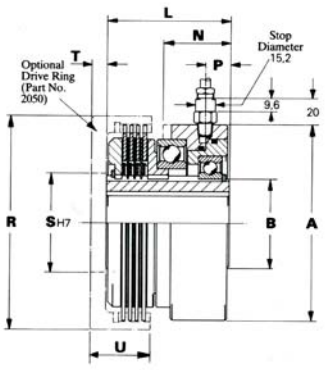
For Technical Assistance Call

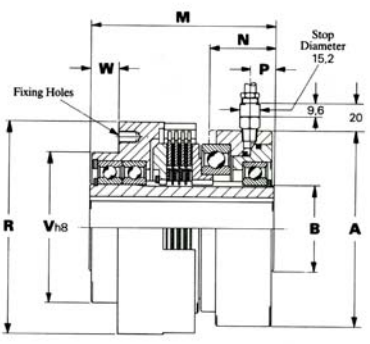
800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL			4H30 54H30P	4H35 54H35P	4H40 54H40P	4H45 54H45P	4H50 54H50P	4H60 54H60P	4H70 54H70P
Performance Data									
Rated Static Torque	Nm	at 10 bar	115	180	280	390	550	950	1440
		at 5.5 bar	57	90	140	200	280	460	650
	ft-lbs	at 150 psi	85	140	215	295	410	720	1100
		at 80 psi	41	68	105	145	200	330	480
Rated Dynamic Torque	Nm	at 10 bar	72	115	180	250	340	600	960
		at 5.5 bar	36	58	90	128	175	290	430
	ft-lbs	at 150 psi	55	90	135	185	260	455	730
		at 80 psi	27	44	66	92	128	210	320
Pressure to Overcome Release Springs		bar	1.0	1.0	0.9	0.8	0.8	1.3	1.8
		psi	15	15	12	11	12	19	25
Drag Torque		Nm	0.07	0.12	0.18	0.25	0.34	0.60	1.00
		ft-lbs	0.05	0.09	0.14	0.19	0.26	0.46	0.73
Maximum Energy per Engagement		kJ	8	11	13	16	17	20	25
Maximum Energy per Hour		kJ	240	333	390	480	510	600	750
Maximum Speed		revs/min	7200	6000	5040	4480	4000	3200	2720
Diameters (all dimensions in mm)									
A			99	114	118	137	146	164	187
B			35	45	45	60	65	75	85
Lengths									
L			75	80	79	86	92	105	119
M			111	121	120	131	137	157	179
N Maximum Engaged			44	44	44	47	52	62	70
P Maximum Engaged			25	25	24	25	27	33	36
P Disengaged			17	18	17	17	18	21	23
U			37	39	40	42	45	55	61
4H Drive Ring									
R			102	115	127	146	159	185	213
S (H7)			45	54	54	70	74	88	100
T			8	9.5	9.5	11	11	14.5	14.5
54H-P Pilot Mount									
R			102	115	127	146	159	185	213
V (h8)			72	88	88	102	112	132	145
W			19	20	20	23	21	23	31
Fixing Holes	Number of holes		3	3	3	6	6	6	6
	Size		M6	M6	M6	M6	M8	M8	M10
	Depth		13	15	15	15	15	20	20
	P.C.D.		88	102	108	120	135	155	180





Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-2-MX 5/09 Printed in USA

5H/55H-P

Series 5H and 55H-P Pressure-Applied Tooth Clutch

Stationary Cylinder for Dry Operation or in Oil

Series 5H pressure-applied stationary cylinder tooth clutches can be used dry or in oil. Pressure supply feeds into cylinder via a flexible tube. Piston and cylinder sub-assembly mounts on shielded ball bearings. Positive disengagement achieved by use of release springs separating two toothed components. Drive flange is supported on hub by a shielded ball bearing.

Series 55H-P clutches developed from the Series 5H, incorporate a pilot mount. Pilot mount is supported on an extended hub by a rigid shielded double bearing assembly. Pulleys, sprockets and other drive components can fit directly to pilot mount, which has a toleranced spigot diameter for location and tapped fixing holes.

Features

- Tooth clutch gives positive drive with no slip
- Shielded bearings need no lubrication in service
- Stationary cylinder allows simple supply connection
- Spring disengagement results in no drag torque other than the rolling resistance of the drive flange/hub bearing
- Standard fixing holes provided in the drive flange
- No axial thrusts transmitted to adjacent components

Series 55H-P advantages include:

- All concentricities are controlled within the clutch simplifying intallation
- Pilot mount can be used to attach pulleys, sprockets and other drive components simplifying assemply

Typical Applications

- Machine Tool
- Printing
- Tire Making Machines
- Auxiliary and Back-up Drives
- Steel Production, Processing and Machining
- Dynamometers

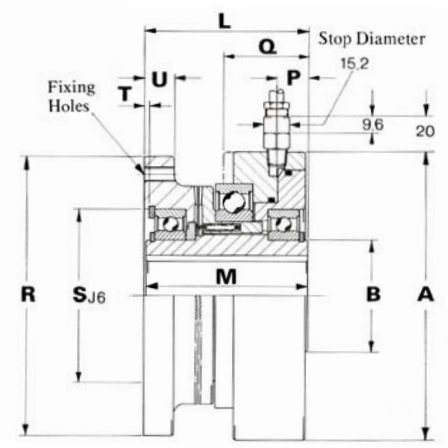
For Technical Assistance Call

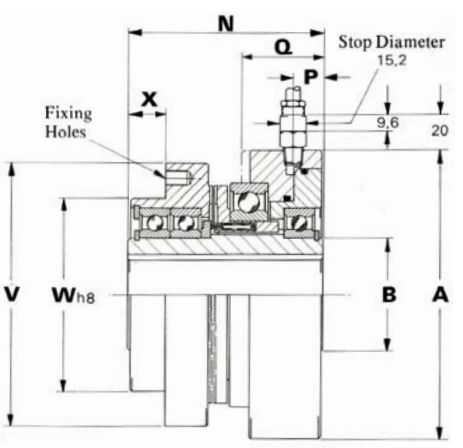
800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL		5H30 55H30P	5H35 55H35P	5H40 55H40P	5H45 55H45P	5H50 55H50P	5H60 55H60P	5H70 55H70P	5H80 55H80P	— 55H90P
Performance Data										
Rated Static Torque at 5.5 bar/80 psi	Nm	160	260	380	550	750	1300	2070	3800	5800
	ft-lbs	115	185	275	395	545	945	1500	2800	4300
Pressure to Overcome Release Springs	bar	1.4	1.4	1.0	0.9	0.8	0.6	0.8	0.6	0.8
	psi	20	20	14	13	12	9	12	9	12
Maximum Speed	revs/min	6000	5040	4800	4000	3840	3200	2720	2560	1920
Diameters (all dimensions in mm)										
	A	115	127	134	153	167	193	216	240	280
	B	35	45	45	60	65	75	85	100	120
Lengths										
	L	79	82	85	93	95	108	123	139	—
	M	77	81	83	92	94	106	122	138	—
	N	93	98	101	112	113	129	146	165	185
	P Engaged	20	21	20	20	21	25	26	27	30
	P Disengaged	17	18	17	18	18	22	23	24	28
	Q Engaged	38	39	39	40	45	53	58	59	66
5H Drive Flange										
	R	111	124	137	150	162	194	213	242	—
	S (J6)	62	75	75	95	100	115	130	150	—
	T	3.3	2.7	3.0	3.0	3.3	3.0	7.1	6.7	—
	U	13	14	14	14	18	18	21	25	—
Fixing Holes	Number of holes	3	3	3	6	6	6	6	6	—
	Size	M6	M6	M6	M6	M8	M8	M10	M10	—
	P.C.D.	90	110	120	130	140	170	190	220	—
55H-P Pilot Mount										
	V	99	115	124	137	153	178	209	240	270
	W (h8)	72	88	88	102	112	132	145	179	210
	X	19	20	20	23	22	23	32	41	57
Fixing Holes	Number of holes	3	3	3	6	6	6	6	8	6
	Size	M6	M6	M6	M6	M8	M8	M10	M10	M12
	Depth	11.1	12.7	12.7	15.9	15.9	22.2	22.2	18	20
	P.C.D.	88	102	108	120	135	155	180	200	250
Driving Teeth										
Number of Teeth		91	106	122	137	152	183	214	300	270





Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-3-MX 5/09 Printed in USA

55H-P-SP

Series 55H-P-SP Pressure-Applied Single-Position Engagement Pilot-Mount Tooth Clutches

Stationary Cylinder for Dry Operation or in Oil

The 55H-P-SP is a development of the Series 55H-P pilot mount clutch featuring single-position engagement. When the clutch is actuated, the driving and driven sides always engage in the same angular relationship, thus ensuring the driven member is always accurately synchronized. A ball detent feature ensures single-position engagement and the drive is transmitted by toothed rings, giving the same torque ratings as the 55H-P range.

Features

- Continuous angular position re-engagement, ensuring drive synchronization
- Tooth clutch provides positive drive with no slip
- All concentricities controlled within clutch simplifying installation
- Sealed bearings need no lubrication in service
- Stationary cylinder allows simple supply connection
- Spring disengagement results in no drag torque other than the rolling resistance of the drive flange/hub bearing
- Standard fixing holes provided in drive flange
- Pilot mount with locating diameter and fixing holes can be used to attach pulleys, sprockets and other drive components simplifying assemply

Typical Applications

Industries where synchronized applications are required

- Printing

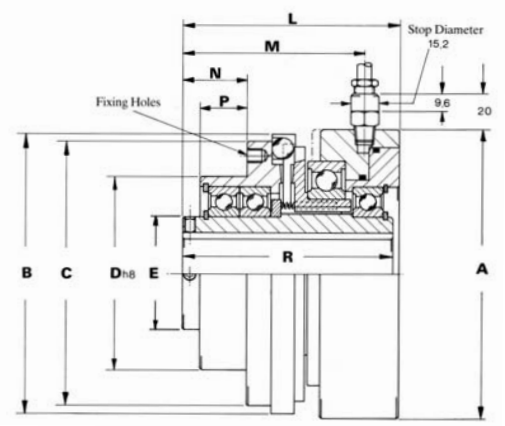
For Technical Assistance Call

800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL		55H30P-SP	55H35P-SP	55H40P-SP	55H45P-SP	55H50P-SP	55H60P-SP	55H80P-SP
Performance Data								
Rated Static Torque at 5.5 bar/80 psi	Nm	160	260	380	550	750	1300	3800
	ft-lbs	115	185	275	395	545	945	2800
Pressure to Overcome Release Springs	bar	1.0	1.0	0.7	0.8	0.75	0.55	0.7
	psi	14	14	10	12	11	8	10
Maximum Speed	revs/min	3600	3040	2880	2560	2400	1920	2560
Inertia (kgm^2) = Table Value x 10^{-3}								
Clutch Less Pilot Mount Assembly		0.94	1.72	2.03	4.60	5.96	13.4	42
Pilot Mount Assembly		2.07	3.25	5.66	7.25	12.3	26.5	53
Weight (kg)								
Complete Unit		3,5	5	6	9	10	14,8	37
Dimensional Data (all dimensions in mm)								
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1; NF.E22-175 (Bores other than standard can be obtained by special order)		20 6 x 2.8	30 8 x 3.3	30 8 x 3.3	38 10 x 3.3	44 12 x 3.3	50 14 x 3.8	75 20 x 4.9
		—	25 8 x 3.3	25 8 x 3.3	35 10 x 3.3	40 12 x 3.3	45 14 x 3.8	70 20 x 4.9
		—	—	—	30 8 x 3.3	35 10 x 3.3	40 12 x 3.3	60 18 x 4.4
Minimum Bore		15.7	18.8	18.8	28.4	31.5	34.7	34.7
Diameters (all dimensions in mm)								
A		115	127	134	153	167	193	240
B		110	124	136	149	162	187	237
C		98	114	124	137	152	178	241
D (h8)		72	88	88	102	112	132	175
E		35	45	45	60	65	75	100
Lengths								
L		102	107	110	118	121	137	175
M Disengaged		85	91	94	101	105	116	151
M Engaged		79	84	87	95	99	110	144
N		24	25	25	29	29	32	52
P		18	18	18	21	20	22	39
R		99	105	107	118	121	137	175
Fixing Holes								
Number		3	3	3	6	6	6	8
Size		M6	M6	M6	M6	M8	M8	M10
P.C.D.		88	102	108	120	135	155	200
Depth		8	8	11	11	13	13	18



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-4-MX 5/09 Printed in USA

52H

Series 52H Pressure-Applied Multi-Disc Clutches

Stationary Cylinder for Operation in Oil

Series 52H pressure-applied stationary cylinder multi-disc clutches are designed for use in oil. Pressure supply feeds into the cylinder via a flexible tube. The piston and cylinder subassembly mount on a needle cage bearing, and needle thrust bearings accommodate the axial loads. Positive disengagement is achieved by use of release springs between the inner plates.

Standard drive rings available as optional extras.

Features

- Clutch requires no adjustment
- Torques can be varied by regulating supply pressure
- Engagement speed controlled by varying pressure supply flow rate
- Large friction area gives extended plate life
- Individual plate separation ensures low drag torque
- Multi-disc design results in compact high torque clutch
- No axial thrusts transmitted to adjacent components

Typical Applications

- Machine Tool – for speed variation at the work spindle and feed engagement
- Building Machines – for traveling and combined gears
- Agricultural Machines – in the main drive and auxiliary drives (PTO) of harvesters
- Printing Presses
- Marine Gearboxes

For Technical Assistance Call

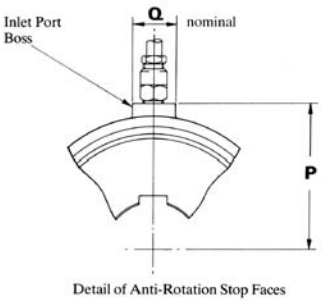
800-825-9050

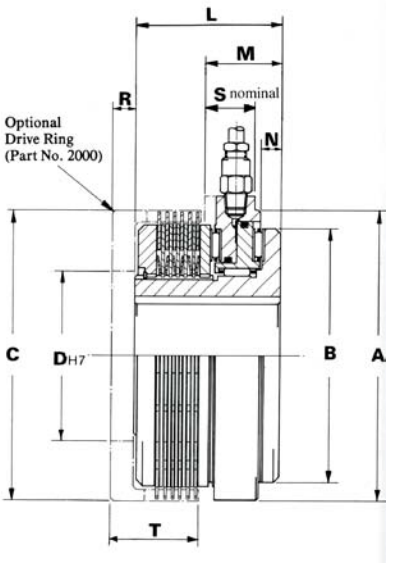
Matrix® International

An Altra Industrial Motion Company

MODEL			52H30	52H50	52H70
Performance Data					
Rated Static Torque	Nm	at 20 bar	240	1320	3450
		at 10 bar	115	620	1620
	ft-lbs	at 300 psi	180	1000	2640
		at 150 psi	87	475	1250
Rated Dynamic Torque	Nm	at 20 bar	160	880	2300
		at 10 bar	76	410	1080
	ft-lbs	at 300 psi	120	670	1760
		at 150 psi	58	320	830
Pressure to Overcome Release Springs		bar	0.8	1.1	1.1
		psi	12	15	16
Drag Torque		Nm	0.5	1.7	5
		ft-lbs	0.37	1.25	3.70
Maximum Speed		revs/min	3500	2300	1600
Inertia (kgm^2) = Table Value x 10^{-3}					
Clutch Less Drive Ring and Outer Plates			0.71	6.45	32.1
Set of Outer Plates			0.26	1.86	13.1
Drive Ring			0.37	5.29	24
Weight (kg)					
Clutch Less Drive Ring			1.9	6.7	15.1
Drive Ring			0.4	1.4	3.2
Dimensional Data (all dimensions in mm)					
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1			30 8 x 3.3	50 14 x 3.8	75 20 x 4.9
D.I.N. 6885:1968 Pt. 1; NF.E22-175 (Bores other than standard can be obtained by special order)			25 8 x 3.3	45 14 x 3.8	65 18 x 4.4
Minimum Bore			18.8	31.5	34.7
Diameters (all dimensions in mm)					
A			86	142	195
B			78	120	170
Lengths					
L			60	78	96
M Maximum Engaged			34	41.3	50.8
N Disengaged			8.5	11.5	14.0
P			54	80	110
Q Nominal			20	25	30
S Nominal			25	28	35
Drive Ring					
C			86	142	196
D (H7)			50	80	110
R			8	11	15
T			33	46	59

• More models available





Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-5-MX 5/09 Printed in USA

66H-02

Series 66H-02 Pressure-Applied Multi-Disc Clutches

Rotating Cylinder for Operation in Oil

Series 66H-02 pressure-applied rotating cylinder multi-disc clutches are designed for use in oil. The pressure supply is fed axially along the mounting shaft and radially outwards through the clutch hub into the cylinder. Positive disengagement is achieved by the use of release springs between the inner plates.

Standard drive rings are available as optional extras.

Features

- Clutch does not require adjustment
- Torques can be varied by regulating supply pressure
- Bearing-free design eliminates bearing life considerations
- Speed of engagement can be controlled by varying pressure supply flow rate
- Individual plate separation ensures low drag torque
- Large friction area gives extended plate life
- Multi-disc design results in compact high torque clutch
- No axial thrust transmitted to adjacent components

Typical Applications

- Marine Splitter Gearboxes
- Tractor PTO's
- Marine Main Drives and PTO's
- Machine Tools
- Available in double acting version for 2-speed gearboxes

For Technical Assistance Call

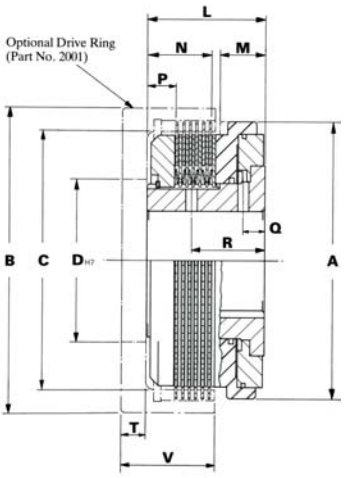
800-825-9050

Matrix® International

An Altra Industrial Motion Company

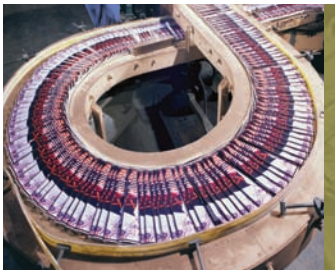
MODEL			66H45-02	66H80-02	66H140-02
Performance Data					
Rated Static Torque	Nm	at 34.5 bar	1630	9400	43350
	ft-lbs	at 500 psi	1200	6930	31960
Rated Dynamic Torque	Nm	at 34.5 bar	1085	6260	28900
	ft-lbs	at 500 psi	800	4615	21310
Pressure to Overcome Release Springs		bar	2.8	2.67	3.0
		psi	41	39	43
Drag Torque		Nm	1.2	5.6	20.3
		ft-lbs	0.9	4.13	15.0
Maximum Speed		revs/min	3900	2500	1800
Inertia (kgm^2) = Table Value x 10^{-3}					
Clutch Less Drive Ring and Outer Plates			7.4	135	1680
Set of Outer Plates			1.43	14	240
Drive Ring			3.0	105	1170
Weight (kg)					
Clutch Less Drive Ring			4.5	26.8	100
Drive Ring			1.0	7.8	42
Dimensional Data (all dimensions in mm)					
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1; NF.E22-175 (For bores other than specified please consult our Engineering Department)			45 14 x 3.8	80 22 x 5.4	150 36 x 8.4
Diameters (all dimensions in mm)					
A			125	220	355
Diameter of Feed Holes		to cylinder	6.4	10.0	10.0
		to plates	6.4	8.0	10.0
Lengths					
L			59	110	181
M Maximum Engaged			25.2	40.7	83.8
N			31.3	62	98
P			9.5	25	36.5
Q			10.1	20	33
R			40.0	75	127
Drive Ring					
B			146	245	420
C			117.7	207.7	359.3
D (H7)			74	130	220
T			11	17	27
V			44	79	136
Number of Teeth			48	67	122
D.P.			10/12	8/10	3 Module
P.A.			20°	20°	20°
P.C.D.			121.92	212.72	366

• More models available



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-6-MX 5/09 Printed in USA



4EC

Series 4EC Electromagnetic Single-Face Clutches

Stationary Field for Dry Operation

Series 4EC electromagnetic stationery field single-face clutches are zero backlash and designed for dry use. When the coil is energized by the DC voltage a magnetic field is generated which attracts the armature to the rotor hub, providing the clamping force for torque transmission. The armature is spring-loaded to ensure rapid disengagement and zero drag when disengaged. Various clutch configurations are available to suit different drive installation requirements.

Features

- Zero backlash
- Long life asbestos-free friction material
- Stationary field design eliminates brush gear and simplifies supply connection
- Zero drag torque when disengaged
- Efficient magnet design reduces power consumption and heat generation
- Can be used as a continuously slipping variable torque device for torque limiting and tensioning applications
- Ideal for high cyclic and all other clutch duties
- Sealed for life bearings

Typical Applications

- Current Generation Sets-to connect gas/diesel engine-generator
- PTO Marine Drives-for compressors and generators
- Cutting Machines-to switch the cutter bar
- Steel Manufacture and Machining
- Paper Production-for transmission connection of the machining centers
- Packaging Machines
- High Frequency Stop/Start Applications

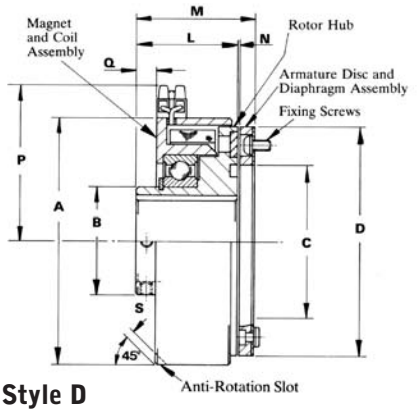
For Technical Assistance Call

800-825-9050

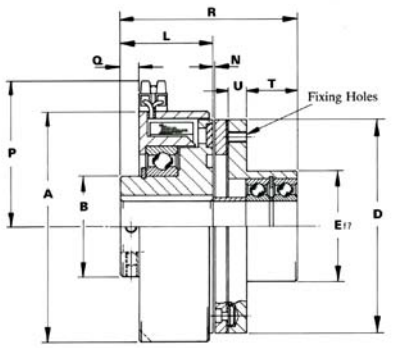
Matrix® International

An Altra Industrial Motion Company

MODEL		4EC 025	4EC 040	4EC 050	4EC 060
Performance Data					
Rated Static Torque	Nm	11	45	72	151
	ft-lbs	8	33	53	111
Rated Dynamic Torque	Nm	9	37	59	124
	ft-lbs	7	27	44	92
Power Consumption at 20° C	Watts	12	21	31	42
Maximum Speed	revs/min	7500	4400	4000	3000
Bores					
Clutch Rotor Hub (Bores other than standard can be obtained by special order)	Standard Bore (H8) and Keyway	15	25	30	40
		5 x 2.3	8 x 3.3	8 x 3.3	12 x 3.3
	Maximum	17	38	46	55
	Minimum	10	15	19	25
Pilot-Mount Assembly		15 $^{+0.000}_{-0.008}$	25 $^{+0.000}_{-0.010}$	30 $^{+0.000}_{-0.010}$	40 $^{+0.000}_{-0.012}$
Coupling Mount Assembly	Maximum	22	42	46	55
	Minimum	10	15	19	25
Diameters (all dimensions in mm)					
A		72.5	115.5	135.5	170.3
B		25	50	60	75
C		41	71	83	115
D		66	107	127	162
E (f7)		38	55	65	80
F		40	60	66	80
Lengths					
L		37.0	46.5	48.5	54.5
M (ref)		43.7	53.5	56.5	66.0
N (Air Gap Setting)		0.2/0.3	0.2/0.3	0.2/0.3	0.2/0.3
P		51	73	83	100
Q		7	9	9	10.1
R (ref)		68.0	87.5	94.5	111
S (Depth and Width)		4 x 6	4 x 8	5 x 8	Ø3.0 x 10 Pin
T		18.8	25.4	27.5	30.0
U		5.5	9.0	11.0	15.0
V		24.3	34.3	38.5	45.0



Style D



Style P

Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-7-MX 5/09 Printed in USA

5EC-P

Series 5EC-P SURE DRIVE Electromagnetic Pilot-Mount Tooth Clutches

Stationary Field for Dry Operation

Series 5EC-P electromagnetic tooth clutches are designed for dry operation. When a DC voltage is applied, a magnetic field is generated, bringing the two toothed rings into mesh. This provides a positive slip free drive. The armature is spring-loaded to ensure rapid disengagement and zero drag when disengaged.

Features

- One-piece construction, eliminates costly installation setting and alignment procedures, and ensures all axial forces are contained within the clutch assembly
- Bearing mounted pilot mount, provides rigid precise location for direct attachment of power transmission components and reduces engineering required by machine builder
- 'Hirth' type drive teeth provide high torque in a compact envelope and positive drive without slip
- Stationary coil and magnet assembly allow high running speeds and simple connection to DC power supply without brushes.

Typical Applications

- Machine Tools
- Heavy Machines
- Steel Production, Processing and Machining
- Lifting Gear and Container Cranes
- Synchronization Clutches for series switching of two electric motors
- Dynometers and Test Equipment
- Remotely Operated Equipment
- Metal and Material Handling
- Cardboard Box Machining

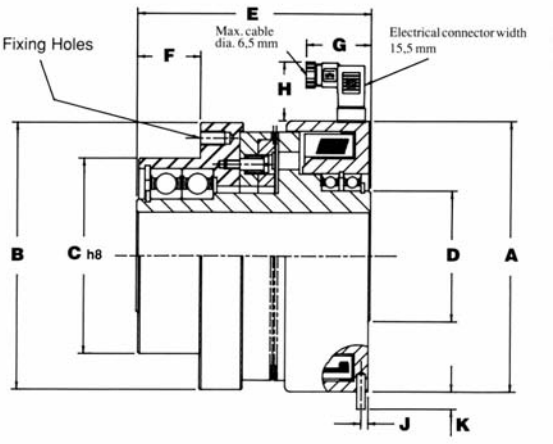
For Technical Assistance Call

800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL		5EC 025P	5EC 035P	5EC 055P	5EC 070P
Performance Data					
Rated Static Torque	Nm	50	200	800	1800
	lbf ft	37	148	590	1325
Power Consumption at 20° C	Watts	19	26	63	120
Maximum Speed	rpm	5800	4000	3000	2600
Dimensional Data (all dimensions in mm)					
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1; NF.E22-175 (Bores other than standard can be obtained by special order)		—— 20 6 x 2.8 15 5 x 2.3	30 8 x 3.3 25 8 x 3.3 20 6 x 2.8	50 14 x 3.8 45 14 x 3.8 40 12 x 3.3	60 18 x 4.4 55 16 x 4.3 50 14 x 3.8
Diameters (all dimensions in mm)					
A		74	98	155	209
B		74	98	153	209
C (h8)		52	75	112	145
D		35	45	75	95
Lengths					
E		77	100	133.5	165
F		15	23	36	46
G (ref)		34.5	34.5	37.2	40
H (ref)		32	32	32	32
J		2.5	2.5	5	6.5
K		8.1	10	10	10
Fixing Holes					
Number		3	3	6	6
Size		M4	M6	M8	M10
P.C.D.		65	88	135	180
Depth		8	12	14	20
Driving Teeth					
Number of Teeth		168	192	264	288



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-8-MX 5/09 Printed in USA

Air Champ

AIR CHAMP Pressure-Applied Single-Face Brakes

Stationary Cylinder for Dry Operation

Matrix Air Champ™ pneumatic brakes are designed for dry use. The pressure supply is fed into the cylinder via a flexible tube. The piston and cylinder subassembly is mounted on a ball bearing. Positive disengagement is achieved by the use of return springs.

Typical Applications

- Tensioning
- High Cycling (On/Off)
- Textiles
- Packaging

Features

- Does not require adjustment
- Sealed cylinder ensures low air consumption
- Stationary cylinder allows simple supply connection
- Torques can be varied by regulating the supply pressure
- Speed of engagement can be controlled by varying the supply flow rate
- Single friction face with finned pressure plate ensures efficient heat dissipation
- Single friction face design virtually eliminates drag torque
- Axial thrusts are contained within the unit
- Ideal for high cyclic duties, tensioning and torque limiting applications
- Alignments are controlled within the unit simplifying installation

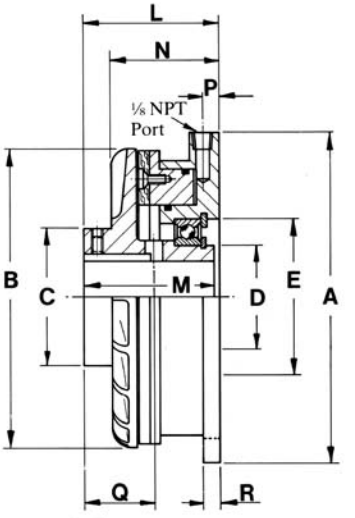
For Technical Assistance Call

800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL		FWB	LWB	MWB	HWB
Performance Data					
Rated Static Torque at 5.5 bar/80 psi	Nm	58	110	240	600
	ft-lbs	42	81	177	442
Rated Dynamic Torque at 5.5 bar/80 psi	Nm	38	73	160	400
	ft-lbs	28	54	118	296
Pressure to Overcome Release Springs	bar	0.4	0.4	0.4	0.4
	psi	6	6	6	6
Maximum Energy per Engagement	kJ	8	12	24	40
Maximum Energy per Hour	kJ	240	360	720	1200
Maximum Speed	revs/min	5000	3800	3000	2300
Minimum Slip Speed	revs/min	17	12	9	7
Cylinder Displacement (cm^3)					
Maximum Cylinder Volume		18	24	46	130
Inertia (kgm^2) = Table Value x 10^{-3}					
Hub and Rotor		1	5	17	47
Weight (kg)					
Complete Unit		3,4	7	13	28
Dimensional Data (all dimensions in mm)					
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1 NF.E22-175 (Bores other than standard can be obtained by special order)	ins	1.125 5/16 x 1/8	—	—	—
	mm	25 8 x 3.3	35 10 x 3.3	50 14 x 3.8	75 20 x 4.9
	mm	—	25 8 x 3.3	35 10 x 3.3	50 14 x 3.8
Minimum Bore	mm	18.8	18.8	25.2	31.5
Diameters (all dimensions in mm)					
A		149	184	229	305
B		118	156	207	257
C		48	67	95	127
D		35	50	70	100
E		62	80	110	152.4
Lengths					
L		63.5	79.5	92.2	107
M		63.5	79.5	90.4	101
N		55	65	75	90
P		8.6	10.4	11.2	16
Q (keyway length)		27	79.5	90.4	101
R		6.4	9.7	11.2	16
S		9.53	15.88	19.0	22.2
T		16	17.5	17.5	25.4
Fixing Holes					
Number		4	4	4	4
Diameter		7.1	8.6	10.4	13.5
P.C.D.	ins	5.312	6.50	8.375	11.00
	mm	135.94	165.10	212.73	279.40
Set Screws					
Size	ins	10-24 UNC	¼-20 UNC	¼-20 UNC	⅜-16 UNC

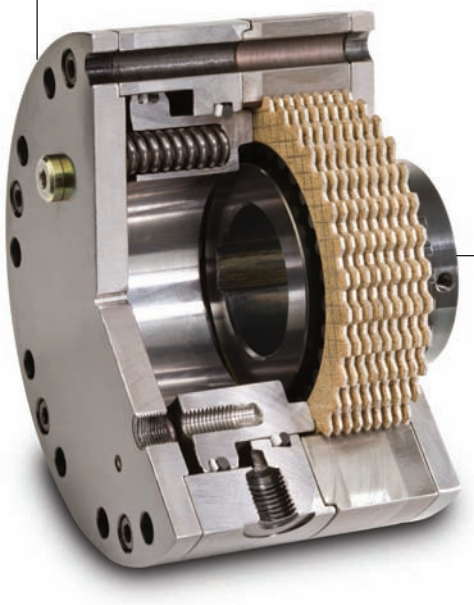


Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-9-MX 5/09 Printed in USA

56-P

Series 56P Spring-Applied Pressure-Released Multi-Disc Brakes



Stationary Cylinder for Wet or Dry Operation

Series 56P spring-applied pressure-released brakes are designed for dynamic braking with oil in the disc-pack chamber, and can also be used dry as holding brakes. They are engaged by disc springs and disengaged by a pressure supply to the cylinder which moves the piston axially, compressing the disc springs and releasing the plates. The hub is usually fitted to the end of the shaft which is being braked.

Features

- Spring-applied, ensuring automatic braking in the event of a power failure
- With all working parts being enclosed, the break is suitable for external mounting, even in unfavorable environments
- Provision is made for a through flow of cooling oil to give greater heat dissipation
- External mounting to shaft ends facilitates retro-fitting to existing machinery
- The end plate can be bored to suit through-shaft installations
- Multi-disc design results in compact high-torque brake
- Only the hub in inner plates rotates, minimizing rotational inertia

Typical Applications

- Winches
- Mining Machines
- High Torque Required Applications
- Agricultural Machines-in the main drive and auxiliary drives (PTO) of harvesters
- Machine Tools-for speed variation at the work spindle and feed engagement
- Building Machines-for traveling and combining gears
- Rotary Actuators
- Access Platforms
- Construction Machinery

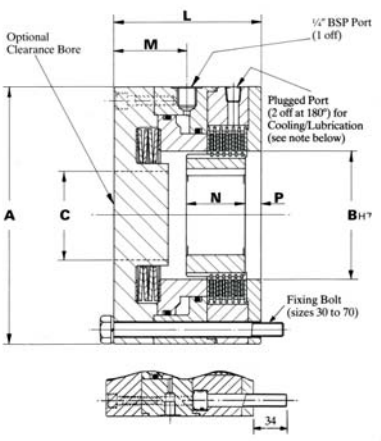
For Technical Assistance Call

800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL			56P30	56P40	56P45	56P55	56P70	56P110	56P140
Performance Data									
Rated Static Torque with plates in oil		Nm	105	240	405	870	1460	4780	9000
		ft-lbs	78	180	300	640	1080	3525	6640
Rated dynamic Torque with plates in oil		Nm	70	160	270	580	970	3190	6000
		ft-lbs	52	120	200	425	720	2350	4425
Energy	per Engagement	kJ	10	14	19	27	45	80	155
	per Hour	kJ	300	420	570	810	1350	2400	4650
Maximum Speed		revs/min	5200	2800	2800	2200	2200	1600	1450
Inertia (kgm^2) = Table Value x 10^{-3}									
Hub and Set of Inner Plates			0.23	1.04	2.25	5.97	15.5	234	620
Weight (kg)									
Complete Unit			8,4	13,2	17	27	40	164	236
Dimensional Data (all dimensions in mm)									
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1; NF.E22-175 (Bores other than standard can be obtained to special order)			30 8 x 3.3	50 14 x 3.8	55 16 x 4.3	75 20 x 4.9	95 25 x 5.4	170 40 x 9.4	190 45 x 10.4
			25 8 x 3.3	45 14 x 3.8	50 14 x 3.8	65 18 x 4.4	80 22 x 5.4	150 36 x 8.4	150 36 x 8.4
Minimum Bore			18.8	31.5	34.7	41.0	63.2	90	115
Diameters (all dimensions in mm)									
	A		135	162	180	220	255	400	480
	B (H7)		50	80	90	110	140	225	280
Lengths									
	L		85	98	102	114	128	185	200
	M		40	50	51	54	53	83	67
	N		30	30	41	40	45	90	110
	P Maximum		10	11	11	13	17	14	18
	P Minimum		4	4	4	5	9	8	14
Fixing Bolts									
Number			6	8	8	12	12	12	8
Size			M10	M10	M10	M12	M12	M16	M20
Length			110	120	120	130	150	90	100
P.C.D.			115	142	160	195	230	360	440
Tightening Torque		Nm	49	49	49	85	85	318	830
		ft-lbs	36	36	36	63	63	234	612



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-10-MX 5/09 Printed in USA

4EB

Series 4EB Electromagnetic Single-Face Brakes

Stationary Field for Dry Operation

Series 4EB electromagnetic stationary field single-face brakes are zero backlash and designed for dry use. When the coil is energized by a DC voltage, a magnetic field is generated which attracts the armature disc to the magnet assembly. The amature disc is connected to a rotating member in the drive by a diaphragm spring. Various brake configurations are available to suit different drive installation requirements.

Features

- Zero backlash for accurate positioning
- Long life asbestos-free friction material
- Simple supply connection facilitates installation
- Zero drag torque when disengaged
- Efficient magnet design reduces power consumption and heat generation
- Can be used as a continuously slipping variable torque device for torque limiting and tensioning applications
- Ideal for high cyclic and other brake duties

Typical Applications

- Rapid Start / Stop Machines
- Lifting, Slewing and Traveling Motions with Handling Devices
- Feed Drives on Machine Tools
- Forklift Trucks
- Label Printing Machines

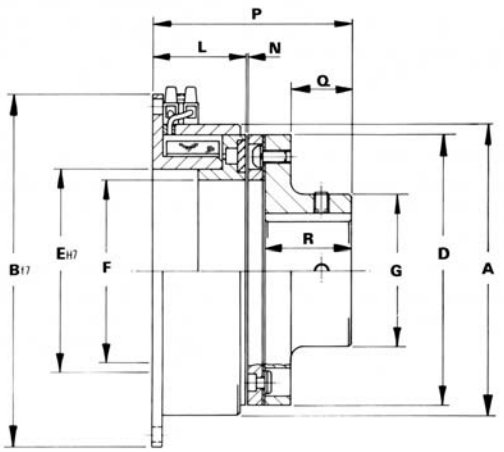
For Technical Assistance Call

800-825-9050

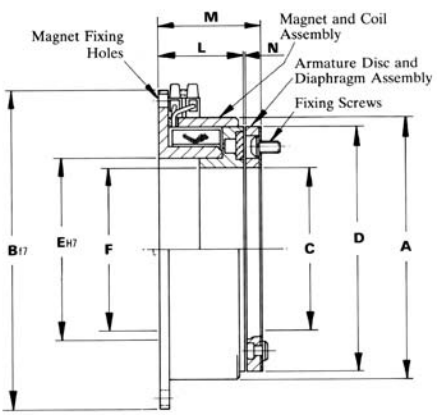
Matrix® International

An Altra Industrial Motion Company

MODEL		4EB 025	4EB 040	4EB 050	4EB 060	4EB 100
Performance Data						
Rated Static Torque	Nm	11	45	72	150	750
	ft-lbs	8	33	53	111	553
Rated Dynamic Torque	Nm	9	37	59	120	500
	ft-lbs	7	27	44	89	369
Power Consumption at 20° C	Watts	12	21	31	40	57.5
Maximum Speed	rev/min	7500	4400	4000	3000	2000
Dimensional Data (all dimensions in mm)						
Bore Coupling Mount	Maximum	32	49	53	55	96
	Minimum	10	15	19	25	40
Diameters (all dimensions in mm)						
A		72.5	115.5	135.5	160	250
B (f7)		87	140	160	190	290
C		41	71	83	80	125
D		66	107	127	160	250
E (H7)		47	80	95	80	125
F		41	71	83	80	125
Lengths						
L		29,5	37,0	40,5	29,3	35,0
M (ref)		36,2	44,0	48,0	41,0	59,0
N (Air Gap Setting)		0,2/0,3	0,2/0,3	0,2/0,3	0,35/0,45	0,45/0,55
P (ref)		60,5	78,0	86,5	86,5	105,5
Q		18,2	24,2	26,5	30,0	46,5
R		24,25	34,25	38,50	45,0	55,0
S (ref)		42,2	54,0	60,0	53,5	58,9



Style C



Style D

Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-11-MX 5/09 Printed in USA

1EB

Series 1EB Spring-Applied Electromagnetically-Released Single-Disc Brakes

Stationary Field for Dry Operation

Series 1EB spring-applied electromagnetically-released brakes are designed for dry use. They are engaged by a disc spring and disengaged by a DC voltage. The hub is fitted to the shaft which is being braked.

Features

- Spring-applied ensuring engagement in the event of a power failure
- Design configuration is particularly suitable for external mounting, simplifying retro-fitting to existing machinery
- A location diameter and two sets of standard fixing holes are provided in the end plate
- Only the hub and friction disc rotate, minimizing rotational inertia
- Efficient magnet design reduces power consumption and heat generation

Typical Applications

- Servo Motor Brakes
- Forklift Trucks
- Current Generation Sets-to connect gas/diesel engine generator
- PTO Marine Drives-for compressors and generators
- Cutting Machines-to switch the cutter bar
- Steel Manufacture and Machining
- Paper Production-for transmission connection of the machining centers
- Automated Doors

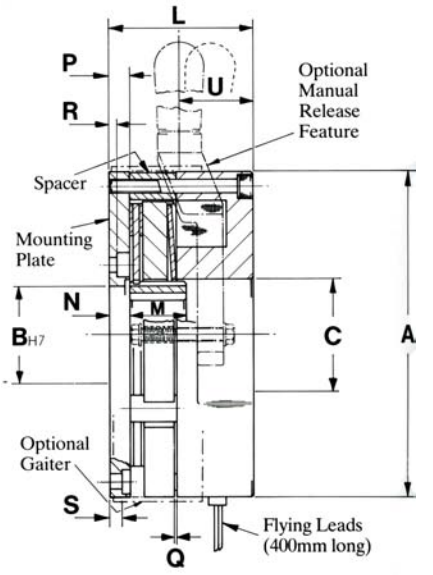
For Technical Assistance Call

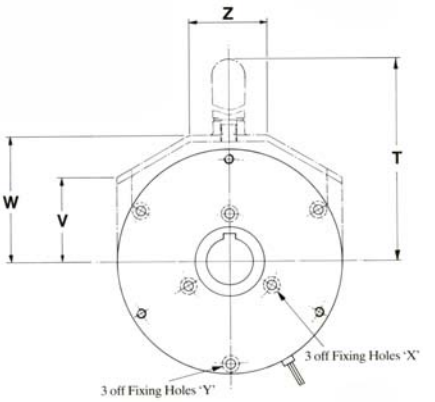
800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL			1EB50	1EB60	1EB70
Performance Data					
Rated Dynamic Torque	Nm		70	106	230
	ft-lbs		52	78	170
Power Consumption at 20°C	Watts		49	54	67
Maximum Energy per Engagement	kJ		35	56	88
Maximum Energy per Hour	kJ		980	1450	2100
Maximum Speed	revs/min		3000	3000	3000
Weight (kg)					
Complete Unit			9.1	13.2	20.2
Dimensional Data (all dimensions in mm)					
Standard Bores (H7) Keyways to I.S.O. 773 B.S. 4235:1972 Pt. 1			35 10 x 3.3	40 12 x 3.3	45 14 x 3.8
D.I.N. 6885:1968 Pt. 1; NF.E22-175 (Bores other than standard can be obtained by special order)			30 8 x 3.3	35 10 x 3.3	40 12 x 3.3
Minimum Bore			29.8	29.8	29.8
Diameters (all dimensions in mm)					
A			160	185	212
B (H7)			55	65	75
C			58	70	80
Lengths					
L			74.5	80.5	94
M			30	30	35
N (Max.)			11	11	11
N (Min.)			3	3	3
P			11	11	11
Q (Air Gap Setting)			0.15	0.25	0.25
Fixing Holes 'X'					
Diameter			8.5	8.5	8.5
Counterbore Diameter			14.5	14.5	14.5
P.C.D.			74	84	100
R			3	3	3
Fixing Holes 'Y'					
Diameter			8.5	8.5	8.5
Counterbore Diameter			14.5	14.5	14.5
P.C.D.			145	170	196
S			8.75	8.75	8.75
Manual Release Feature					
T			302	346	450
U			37	40	49
V			59	68	93
W			90	103	125
Z			50	60	92
Disengaging Force		N	225	243	300





Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-12-MX 5/09 Printed in USA

1CD

Series 1CD SURESTOP Spring-Applied Electromagnetically-Released Caliper Brakes

For Dry Operation

SURESTOP™ brakes are engaged by coil springs and disengaged by an electromagnetic force. The SURESTOP can be used in rotational or linear motion applications for either dynamic braking of an inertia, or as a holding brake.

Typical Applications

- Machine Tools
- Test Equipment
- Braking Linear Motion
- Positioning Systems (Automation)

Features

- Spring-applied, engages and remains engaged if power fails
- Adjustable air gap, increases pad life and allows for the accommodation of different disc thicknesses
- Floating mount minimizes drag
- Low power consumption, low running costs
- Electromagnet remote from shaft eliminates shaft magnetism

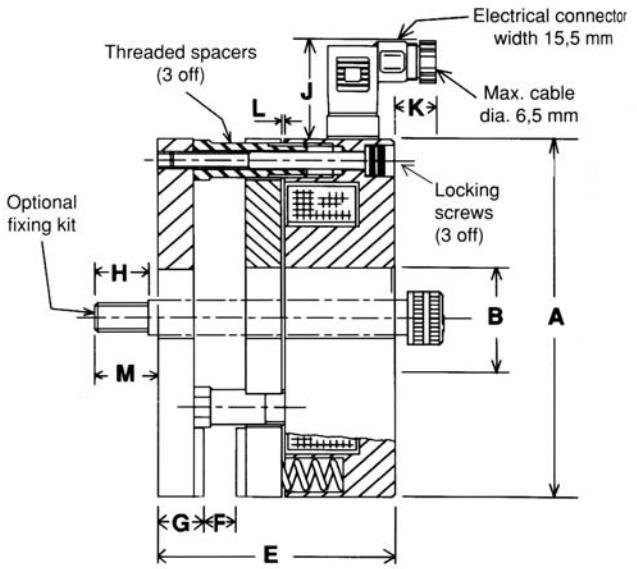
For Technical Assistance Call

800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL		1CD 040	1CD 070
Performance Data			
Static Braking Force (Bedded)	N	800	3300
Dynamic Braking Force (Bedded)	N	720	2950
Power Consumption @ 20°C	Watts	31	72
Weight	kg	4.5	18.2
Dimensional Data (all dimensions in mm)			
Diameters			
A		125	210
B		36	70
Lengths (all dimensions in mm)			
E (ref)		73	106
F (nominal disc or rail thickness)		10.0	12.7
G (ref)		14	15
H		16.4	18.4
J		32.5	32.5
K		13.0	5.6
L (Air Gap Setting)	(Nominal)	0.25	0.35
	(Max)	0.75	1.00
M (ref)		20	25
Fixing Dimensions			
Fixing Holes for Shoulder Screws (2 off)	Size	M10	M12
	P.C.D.	110	190



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-13-MX 5/09 Printed in USA

54L

Series 54L Multi-Disc Torque Limiters

For Wet or Dry Operation

The Series 54L torque limiters prevent overload damage in an installation by slipping at an adjustable preset torque. These compact units are a simple construction and are easy to adjust. Optional overload Slip Sensor can be used to detect torque overload.

Typical Applications

- Conveyors
- Pulsating Drives with High Peaks
- Mining
- Bulk Material Handling

Features

- Simple stepless adjustment allows accurate setting of any required breakaway torque up to the maximum
- Multi-disc design results in contact high torque unit
- Large friction area gives extended plate life
- Bi-directional operation
- Suitable for horizontal or vertical installation
- With optional overload Slip Sensor, detection and signaling of slip is achieved

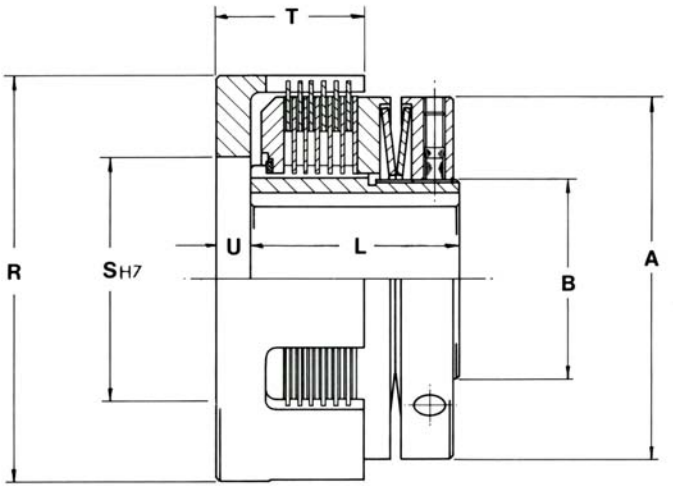
For Technical Assistance Call

800-825-9050

Matrix® International

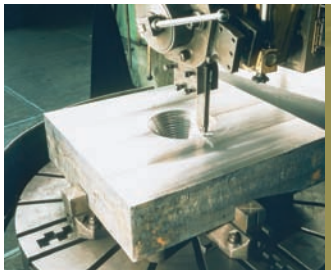
An Altra Industrial Motion Company

MODEL		54L25	54L30	54L40	54L50	54L60	54L70
Performance Data							
Maximum Rated Breakaway Torque in Oil	Nm	30	99	264	460	680	1220
	lbf ft	22	73	195	340	487	900
Weight (kg)							
Complete Unit		0.8	1.4	2.5	3.6	5.3	7.8
Dimensional Data (all dimensions in mm)							
Standard Bores (H7) and Keyways to I.S.O. 773 (Bores other than standard can be obtained by special order)		20 6 x 2.8	25 8 x 3.3	40 12 x 3.3	50 14 x 3.8	60 18 x 4.4	75 20 x 4.9
Minimum Bore		11	19	25	31.5	34.5	41
Diameters (all dimensions in mm)							
A		64	76	101	126	151	176
B		36	42	56	72	85	100
Lengths							
L		35	48	58	67	72	92
Lengths							
R		73	86	113	142	169	196
S (H7)		40	52	68	82	98	112
T		27	32	39	44	50	58
U		8.5	8	10	11	14.5	15



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-14-MX 5/09 Printed in USA



1TC

1TC Face Tooth Coupling Rings

For Indexing and Positioning

The Matrix ITC range of face tooth coupling rings has been designed to satisfy a market demand for readily available standard face tooth couplings. (Face tooth couplings are sometimes referred to as Hirth-type couplings or Index Rings.)

The Matrix 1TC face tooth coupling rings may be used wherever precise indexing or positioning is required. A pair of rings constitutes a coupling for accurate location capable of transmitting high torque. The mating faces of each ring are machined to produce straight sided Vee-form teeth, which when meshed together form a rigid angular and radial location.

To machine face teeth directly on complex components can be an expensive operation and in some cases is not practical. A simple solution to the problem is to fit compact face tooth coupling rings, which have been produced to the Matrix guaranteed standards of quality and accuracy.

Features

- Proprietary face tooth coupling rings eliminate expensive machining operations by the machine builder
- Large effective tooth contact area results in high load carrying capacity within compact overall dimensions
- Accurate indexing to within ±3 seconds of arc
- Couplings parallel to within 0.01 mm
- Self center on engagement to within 0.02 mm
- Induction hardened teeth result in high resistance to wear
- Supplied complete with fixing, dowel and extraction holes

Typical Applications

- Turbine Rotors, Crankshanks
- High Torque Transmission Applications
- Machine Tools
- Milling Machines
- Paper Printing Presses

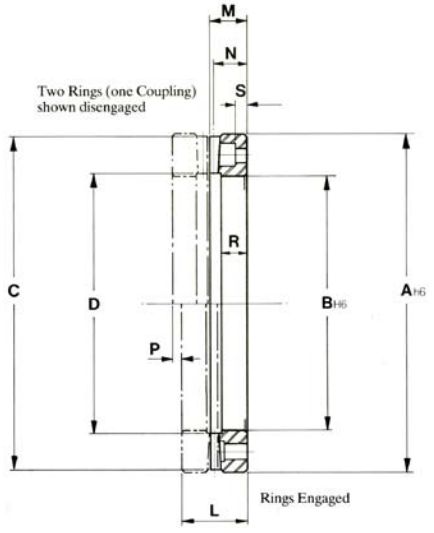
For Technical Assistance Call

800-825-9050

Matrix® International

An Altra Industrial Motion Company

MODEL NUMBER	1TC 125 - ...		1TC 160 - ...		1TC 200 - ...		1TC 250 - ...		1TC 280 - ...	
	048	072	060	096	072	120	096	144	120	144
Dimensional Data (all dimensions in mm)										
No. of Teeth	48	72	60	96	72	120	96	144	120	144
Angular Pitch	7½°	5°	6°	3¾°	5°	3°	3¾°	2½°	3°	2½°
Diameters (all dimensions in mm)										
A (h6)	125		160		200		250		280	
B (H6)	85		120		150		200		230	
C	124		159		199		249		279	
D	86		121		151		201		231	
Lengths										
L (Stack Height)	30	30	30	30	35	35	35	35	40	40
M	16.7	16.6	16.8	16.6	19.5	19.1	19.2	18.7	21.4	21.4
N (Face to Tooth Pitchline)	15	15	15	15	17.5	17.5	17.5	17.5	20	20
P (Min. Disengagement Travel)	4.6	4.4	4.8	4.4	5.2	4.4	4.6	3.6	4.0	4.0
R	11.7	11.6	11.8	11.6	14.5	14.1	14.2	13.7	15.9	15.9
S	4.6	4.6	4.6	4.6	5.1	5.1	5.2	5.2	7.2	7.2
T	1.7	1.6	1.8	1.6	2	1.6	1.7	1.2	1.4	1.4
Fixing Holes										
Number	6		6		6		10		10	
Diameter	6.6		6.6		9		9		9	
Counterbore Diameter	11		11		15		15		15	
P.C.D.	105		140		175		225		255	
Dowel Holes										
Dowel Size	8		8		8		8		8	
P.C.D.	105		140		175		225		255	
α	30		30		30		54		54	
Extraction Holes										
Size	M6		M6		M8		M8		M8	
P.C.D.	105		140		175		225		255	
ß	30		30		30		18		18	



Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-15-MX 5/09 Printed in USA

W

Waldron Flexalign Type W Gear Couplings and Type WSP Spacer Gear Couplings

Typical Applications

- High Torque Applications (Relative to Diameter)
- Steel Mills
- Pump Drives
- Mining
- Bulk Material Handling
- Machine Tools
- Packaging Systems

Couplings with different diameters/ measurements available upon request.

The basic full flex coupling accommodates angular and parallel misalignments, or a combination of the two, and also end float. It uses forged steel hubs and sleeves, incorporating 40% pressure angled teeth, improved seals, full tooth engagement, optional pilot ratings and SAE grade 5 exposed bolts with self locking nuts.

Spacer Gear Couplings allow additional spacing between shafting where ease of maintenance or increased parallel misalignment capability is required. The spacer allows a number of service functions to be performed while providing room for the removal driver or the standard coupling half from the shaft without moving driver or driven units. A variety of shaft spacings can be accomodated by reversing one or both hubs.

For Technical Assistance Call

800-825-9050

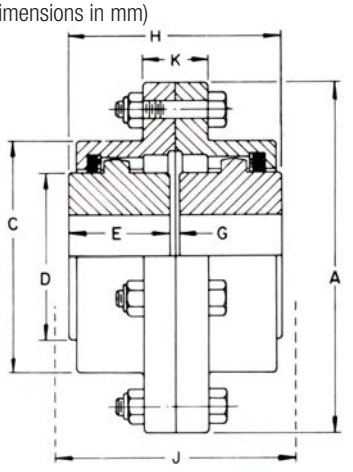
Matrix® International

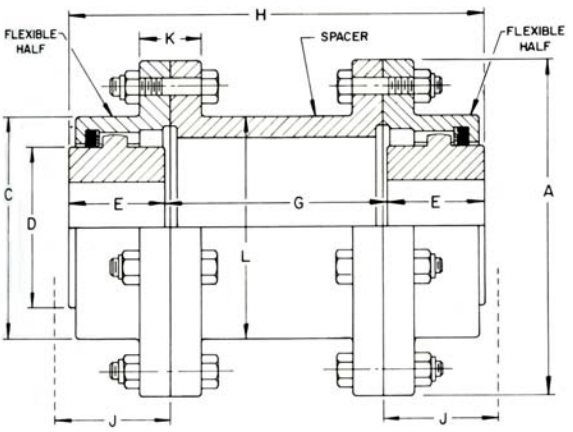
An Altra Industrial Motion Company

Coupling Size and Type		1W	1½W	2W	2½W	3W	3½W	4W	4½W	5W	5½W	6W	7W
Rated Torque	Nm	860	1970	3560	6410	10690	16330	24925	34190	46315	60545	78310	113900
	ft-lbs	630	1450	2625	4725	7875	12075	18375	25200	34125	44625	57750	84000
Rated Power	kW/100 rpm	9	20.6	37.3	67.1	112	171	261	358	485	634	820	1193
	HP/100 rpm	12	27.6	50	90	150	230	350	480	650	850	1100	1600
Max. Speed	rpm	10000	7400	5900	5000	4300	3900	3500	3200	2900	2700	2500	2200
Maximum Misalignment	Parallel	1.37	1.72	2.18	2.54	3.05	3.55	4.06	4.57	5.20	5.58	6.35	7.23
	Angular	3°	3°	3°	3°	3°	3°	3°	3°	3°	3°	3°	3°
Maximum End Float	W	6.3	6.3	6.3	9.5	9.5	12.7	12.7	15.8	15.8	15.8	17.4	22.2
Inertia	kg m²	0.005	0.017	0.037	0.094	0.177	0.373	0.698	1.156	2.182	3.310	4.917	9.716
Weight	kg	4.1	8.6	14.5	25.4	38.1	60.0	84.4	117	169	216	262	387
Maximum Bore and Keyway		42	56	72	85	105	125	140	160	180	200	225	250
		12x3.3	16x4.3	20x4.9	22x5.4	28x6.4	32x7.4	36x8.4	40x9.4	45x10.4	45x10.4	50x11.4	56x12.4
Rough Bore		9.5	13.5	15.9	22.2	31.8	38.1	44.5	50.8	63.5	76.2	102	133
A		116	153	178	213	240	280	318	346	389	421	458	527
C		77	97	123	146	171	197	228	258	289	320	353	400
D		59	80	102	120	143	169	191	216	242	265	299	337
E		42.9	52.4	61.9	77.0	91.3	106.4	120.6	136.5	155.6	168.3	187.3	220.7
G	W	3.2	3.2	3.2	4.8	4.8	6.3	6.3	7.9	7.9	7.9	7.9	9.5
H	W	89.0	108.0	127.0	158.8	187.4	219.1	247.5	280.9	319.1	344.5	382.5	450.9
J	W	108	127	159	197	229	267	305	346	385	419	477	536
K		28.6	38.1	38.1	47.7	47.7	57.2	57.2	57.2	76.2	76.2	50.8	57.2
Exposed Bolts	Quantity	6	8	6	6	8	8	8	10	8	14	14	16
	Size (UNF)	¼-28	3/8-24	½-20	5/8-18	5/8-18	¾-16	¾-16	¾-16	7/8-14	7/8-14	7/8-14	1-12
	P.C.D.	95.2	122.2	149.2	181.0	206.4	241.3	279.4	304.8	342.9	368.3	400.0	463.5

Coupling Size and Type		1WSP	1½WSP	2WSP	2½WSP	3WSP	3½WSP	4WSP	4½WSP	5WSP	5½WSP	6WSP	7WSP
Rated Torque	Nm	860	1970	3560	6410	10690	16330	24925	34190	46315	60545	78310	113900
	ft-lbs	630	1450	2625	4725	7875	12075	18375	25200	34125	44625	57750	84000
Rated Power	kW/100 rpm	9	20.6	37.3	67.1	112	171	261	358	485	634	820	1193
	HP/100 rpm	12	27.6	50	90	150	230	350	480	650	850	1100	1600
Max. Speed	rpm	10000	7400	5900	5000	4300	3900	3500	3200	2900	2700	2500	2200
Maximum Misalignment	Parallel	4.6	5.0	5.4	5.8	6.2	8.1	8.6	9.0	9.6	10.1	11.5	13.6
	Angular	3°	3°	3°	3°	3°	3°	3°	3°	3°	3°	3°	3°
Maximum End Float	W	6.3	6.3	6.3	9.5	9.5	12.7	12.7	15.8	15.8	15.8	17.4	22.2
Inertia	kg m²	0.008	0.027	0.056	0.137	0.247	0.536	0.959	1.523	2.897	4.304	6.788	13.592
Weight	kg	6.4	13.6	20.9	36.3	51.3	82.6	112	149	217	273	316	473
Maximum Bore and Keyway		42	56	72	85	105	125	140	160	180	200	225	250
		12x3.3	16x4.3	20x4.9	22x5.4	28x6.4	32x7.4	36x8.4	40x9.4	45x10.4	45x10.4	50x11.4	56x12.4
Rough Bore		9.5	13.5	15.9	22.2	31.8	38.1	44.5	50.8	63.5	76.2	102	133
Standard Shaft Spacing		127	127	127	127	127	178	178	178	178	178	203	254
A		116	153	178	213	240	280	318	346	389	421	458	527
C		77	97	123	146	171	197	228	258	289	320	353	400
D		59	80	102	120	143	169	191	216	242	265	299	337
E		42.9	52.4	61.9	77.0	91.3	106.4	120.6	136.5	155.6	168.3	187.3	220.7
G	W	127	127	127	127	127	178	178	178	178	178	203	254
H	W	212.8	231.8	250.8	281.0	309.6	390.8	419.2	451.0	489.2	514.6	477.6	695.4
Exposed Bolts	Quantity	6	8	6	6	8	8	8	10	8	14	14	16
	Size (UNF)	¼-28	3/8-24	½-20	5/8-18	5/8-18	¾-16	¾-16	¾-16	7/8-14	7/8-14	7/8-14	1-12
	P.C.D.	95.2	122.2	149.2	181.0	206.4	241.3	279.4	304.8	342.9	368.3	400.0	463.5

(all dimensions in mm)





Matrix International
449 Gardner St. • South Beloit, IL 61080
815-389-6274 • Fax: 815-389-2582
E-mail: matrix.usa@altramotion.com
www.matrix-international.com

P-1788-16-MX 5/09 Printed in USA

Altra Industrial Motion

All Customer Service phone numbers shown in bold

Warner Electric

Electromagnetic Clutches and Brakes

South Beloit, IL - USA
1-800-825-6544

For application assistance:
1-800-825-9050

Electromagnetic Clutches and Brakes

St Barthelemy d'Anjou, France
+33 (0) 2 41 21 24 76

Precision Electric Coils and Electromagnetic Clutches and Brakes

Columbia City, IN - USA
1-260-244-6183

Inertia Dynamics

Spring Set Brakes; Power On and Wrap Spring Clutch/Brakes

New Hartford, CT - USA
1-800-800-6445

Matrix International

Electromagnetic Clutches and Brakes, Pressure Operated Clutches and Brakes

Brechin, Scotland
+44 (0) 1356 602000

South Beloit, IL - USA
1-815-389-3771

Warner Linear

Linear Actuators and Guideways

Belvidere, IL - USA
1-800-825-6544

For application assistance:
1-800-825-9050

Twiflex Limited

Caliper Brakes and Thrusters

Twickenham, England
+44 (0) 20 8894 1161

Kilian Manufacturing

Engineered Bearing Assemblies

Syracuse, NY - USA
1-315-432-0700

TB Wood's

Belted Drives and Elastomeric Couplings

Chambersburg, PA - USA
1-888-829-6637 – Press #5

For application assistance:
1-888-829-6637 – Press #7

General Purpose Disc Couplings

San Marcos, TX - USA
1-512-353-4000

Wichita Clutch

Pneumatic Clutches and Brakes

Wichita Falls, TX - USA
1-800-964-3262

Pneumatic Clutches and Brakes

Bedford, England
+44 (0) 1234 350311

Industrial Clutch

Pneumatic and Oil Immersed Clutches and Brakes

Waukesha, WI - USA
1-262-547-3357

Formsprag Clutch

Overrunning Clutches and Holdbacks

Warren, MI - USA
1-800-348-0881– Press #1

For application assistance:
1-800-348-0881 – Press #2

Marland Clutch

Roller Ramp and Sprag Type Overrunning Clutches and Backstops

Burr Ridge, IL - USA
1-800-216-3515

Stieber Clutch

Overrunning Clutches and Holdbacks

Heidelberg, Germany
+49 (0) 6221 30 47 0

Boston Gear

Enclosed and Open Gearing, Electrical and Mechanical P.T. Components

Charlotte, NC - USA
1-800-825-6544

For application assistance:
1-800-816-5608

Huco Dynatork

Precision Couplings and Air Motors

Hertford, England
+44 (0) 1992 501900

USA
1-800-825-6544

Ameridrives Couplings

Mill Spindles, Ameriflex, Ameridisc

Erie, PA - USA
1-814-480-5000

Gear Couplings

San Marcos, TX - USA
1-512-353-4000

Ameridrives Power Transmission

Universal Joints, Drive Shafts, Mill Gear Couplings

Green Bay, WI - USA
1-920-593-2444

Bibby Transmissions

Disc, Gear, Grid Couplings, Overload Clutches

Dewsbury, England
+44 (0) 1924 460801

Boksburg, South Africa
+27 11 918 4270

Nuttall Gear and Delroyd Worm Gear

Worm Gear and Helical Speed Reducers

Niagara Falls, NY - USA
1-716-298-4100

Saftek Friction

Non-asbestos Brake and Clutch Materials

Telford, England
+44 (0) 1952 581122

Asia Pacific Sales Offices

Australia
+61 2 9894 0133

China - Beijing
+86 (10) 6053-9884

China - Hong Kong
+852 2615 9313

China - Shanghai
+86 21 5169-9255

China - Taiwan
+886 2 2577 8156

Singapore
+65 6487 4464

Thailand
+66 2 322 5527

Altra® Industrial Motion

The Power of Experience