

Multi-Disc Clutches

Series 4H and 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.

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 installation
- Pilot mount can be used to attach pulleys, sprockets and other drive components simplifying assembly

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.

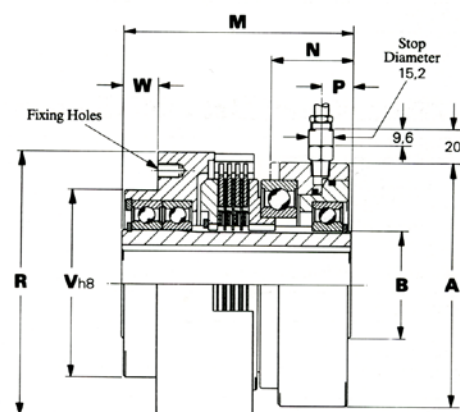
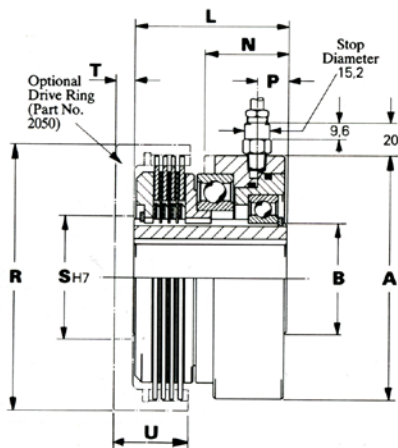
Typical Applications

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

Multi-Disc Clutches

Series 4H and 54H-P

MODEL		4H30	4H35	4H40	4H45	4H50	4H60	4H70	
		54H30P	54H35P	54H40P	54H45P	54H50P	54H60P	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	



Multi-Disc Clutches

Series 52H



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

Series 52H Pressure Applied Multi-Disc Clutches

Stationary Cylinder for Operation in Oil

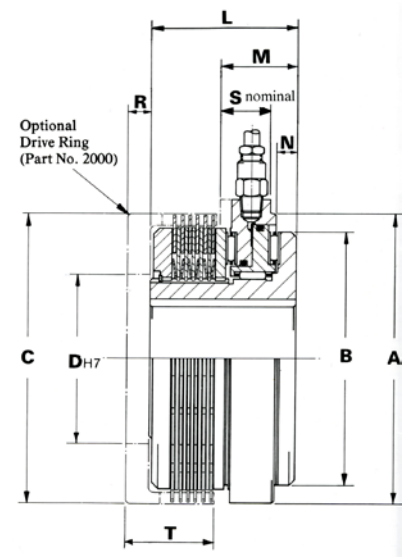
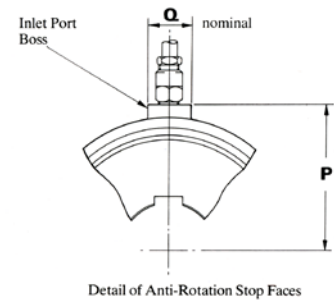
Series 52H pressure-applied stationary cylinder multi-disc clutches are designed for use in oil. Pressure supply feeds into the cylinder via a flexible tube. The piston and cylinder subassembly mount on a needle cage bearing, and needle thrust bearings accommodate the axial loads. Positive disengagement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

Standard drive rings available as optional extras.

Typical Applications

- Printing
- 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

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
Rated Dynamic Torque	Nm	at 20 bar	160	880	2300
		at 10 bar	76	410	1080
	ft-lbs	at 300 psi	120	670	1760
Pressure to Overcome Release Springs	bar		0.8	1.1	1.1
		psi		12	15
	Nm		0.5	1.7	5
Drag Torque	ft-lbs		0.37	1.25	3.70
	revs/min		3500	2300	1600
Inertia (kgm²) = 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)		30	50	75	
Keyways to I.S.O. 773		8 x 3.3	14 x 3.8	20 x 4.9	
B.S. 4235:1972 Pt. 1					
D.I.N. 6885:1968 Pt. 1; NFE22-175		25	45	65	
(Bores other than standard can be obtained by special order)		8 x 3.3	14 x 3.8	18 x 4.4	
Minimum Bore		18.8	31.5	34.7	
Diameters (all dimensions in mm)					
A		86	142	196	
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

Multi-Disc Clutches

Series 66H-02



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

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 available as optional extras.

Typical Applications

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

Multi-Disc Clutches

Series 66H-02

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 (kgm²) = 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					
			45	80	150
			14 x 3.8	22 x 5.4	36 x 8.4
D.I.N. 6885:1968 Pt. 1; NFE22-175					
(For bores other than specified please consult our Engineering Department)					
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

