Series 4H and 54H-P



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

Stationary Cylinder for Dry Operation

Series 4H pressure-applied stationary cylinder multidisc 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 tolerenced 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.

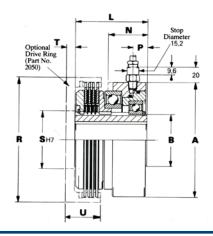
Typical Applications

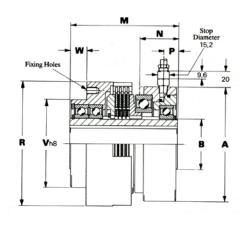
- High Cyclic On/Off Applications
- Packaging
- Printing
- PTO's
- Test Rigs

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Series 4H and 54H-P

Performance Data	MODEL			4H30 54H30P	4H35 54H35P	4H40 54H40P	4H45 54H45P	4H50 54H50P	4H60 54H60P	4H70 54H70P
Rated Static Torque Name of the part	Performance Data									
Rated Static Torque at 15 par 57 90 140 200 280 460 650 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700 1100 700		Nm	at 10 bar	115	180	280	390	550	950	1440
A second sec	Datad Static Tarque	INITI	at 5.5 bar	57	90	140	200	280	460	650
Rated Dynamic Torque at 10 brs / 2 at 15.5 bar 36 58 brs / 90 at 128 175 brs / 290 430 brs / 400 960 brs / 900 430 brs / 400 960 brs / 900 430 brs / 400 960 brs / 400 450 brs / 400 480 brs / 400 480 brs / 400 460 brs / 400 960 brs / 400 480 brs /	Rateu Static Torque	ft lbo	at 150 psi	85	140	215	295	410	720	1100
Rated Dynamic Torque Mm fills fills at 150 psi s 55 s 90 s 135 s 85 s 260 s 455 s 730 s 185 s 260 s 455 s 730 s 730 s 185 s 260 s 455 s 730 s 730 s 185 s 260 s 455 s 730 s 730 s 730 s 185 s 260 s 455 s 730		IL-IDS	at 80 psi	41	68	105	145	200	330	480
Rated Dynamic Torque at 15.5 bar at 16.9 bbr at 16.0 ps at 15.0 ps at 16.0 ps a		Nm	at 10 bar	72	115	180	250	340	600	960
Pressure to Overcome	Patad Dynamia Targua	INIII	at 5.5 bar	36	58	90	128	175	290	430
Pressure to Overcome Bar 1.0 1.0 0.9 0.8 0.8 1.3 1.8 Release Springs pis 15 15 12 11 12 19 25 Drag Torque Pit	•	ft lbo	at 150 psi	55	90	135	185	260	455	730
Paid		IL-IDS	at 80 psi	27	44	66	92	128	210	320
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 448 4000 3200 2720 Maximum Speed Pros/min 7200 6000 5040 448 4000 3200 2720 Maximum Speed Pros/min 7200 6000 5040 448 4000 3200 2720 Maximum Speed Pros/min 7200 6000 5040 448 4000 3200 2720 Maximum Engaged Pros/min 7200 6000 5040 480 4000 3200 2720 Maximum Engaged Pros/min 7200 6000 5040 480 4000 3200 2720 Maximum Engaged Pros/min 7200 72	Pressure to Overcome		bar	1.0	1.0	0.9	0.8	0.8	1.3	1.8
Private Fif-libs 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 240 333 390 440 400 320 270 Maximum Speed revs/min 720 600 504 448 400 320 270 Diameters (all dimensions in mm)	Release Springs		psi	15	15	12	11	12	19	25
Maximum Energy per Engagement KJ 8 11 13 16 17 20 25 Maximum Energy per Hour KJ 240 333 339 480 510 600 750 Maximum Speed revs/min 7200 6000 5040 4480 4000 3200 2720 Maximum Speed revs/min 7200 6000 5040 4480 4000 3200 2720 Maximum Speed Paramatan Speed	Drog Torquo		Nm	0.07	0.12	0.18	0.25	0.34	0.60	1.00
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 111 121 120 131 137 157 179 M 111 121 120 131 137 157 179 Maximum Engaged 44 44 44 47 52 62 70 P Disengaged 25 25 24 25 27 33 36 P Diver Ring 17 18 17 17 18 21 23 4H Drive Ring 8 102 115 127 146 159 185	Drag Torque		ft-lbs	0.05	0.09	0.14	0.19	0.26	0.46	0.73
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 M Maximum Engaged 44 44 44 47 52 62 70 P Disengaged 25 25 24 25 27 33 36 P Disengaged 17 18 17 17 18 21 23 21 23 4H Drive Ring R 102 115 127 146 159 185 213 S (H7) 45	Maximum Energy per Engagement		kJ	8	11	13	16	17	20	25
Parish	Maximum Energy per Hour		kJ	240	333	390	480	510	600	750
Parish	Maximum Speed		revs/min	7200	6000	5040	4480	4000	3200	2720
B 35 45 45 60 65 75 85	Diameters (all dimensions in mm)									
L 75 80 79 86 92 105 119 111 121 120 131 137 157 179	A			99	114	118	137	146	164	187
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 Disengaged 25 25 24 25 27 33 36 P Disengaged 17 18 17 17 18 21 23 P Disengaged 17 18 17 17 18 21 23 P Disengaged 25 25 24 25 27 33 36 P Disengaged 17 18 17 17 18 21 23 4 0 33 39 40 42 45 55 61 4 102 115 127 146 159 185 213 5 11	В			35	45	45	60	65	75	85
M	Lengths									
N Maximum Engaged	L			75	80	79	86	92	105	119
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	M			111	121	120	131		157	179
P Disengaged 17 18 17 17 18 21 23	N Maximum E	ngaged		44	44	44	47	52	62	70
Namber of holes Name of ho	P Maximum Er	ngaged		25	25	24	25	27	33	36
H Drive Ring R	P Disengaged			17	18	17	17	18	21	23
R 102 115 127 146 159 185 213 S (H7)	U			37	39	40	42	45	55	61
S (H7) 45 54 54 70 74 88 100 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 M6 M6 M6 M6 M8 M8 M10 Fixing Holes 13 15 15 15 15 20 20	4H Drive Ring									
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 White profit Moles 3 3 3 3 6 6 6 6 6 6 Size M6 M6 M6 M6 M6 M6 M8 M8 M8 M10 Depth 13 15 15 15 15 20 20					115	127	146			213
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 3 3 3 6 6 6 6 6 Size M6 M6 M6 M6 M8 M8 M10 Depth 13 15 15 15 15 20 20	S (H7)			45	54	54	70	74	88	100
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 3 3 3 6 6 6 6 Size M6 M6 M6 M6 M8 M8 M10 Depth 13 15 15 15 15 20 20	<u> </u>			8	9.5	9.5	11	11	14.5	14.5
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 6 Size M6 M6 M6 M6 M8 M8 M10 Depth 13 15 15 15 15 20 20	54H-P Pilot Mount									
W 19 20 20 23 21 23 31 Fixing Holes Size M6 M6 M6 M6 M8 M8 M10 Depth 13 15 15 15 15 20 20	R			102	115	127	146	159	185	213
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					88	88	102	112	132	145
Fixing Holes Size M6 M6 M6 M6 M8 M8 M10 Depth 13 15 15 15 15 20 20	W			19	20	20	23	21	23	31
Depth 13 15 15 15 20 20		Number of h	oles	3	3	3	6	6	6	6
Depth 13 15 15 15 20 20	Fiving Holos	Size		M6	M6	M6	M6	M8	M8	M10
P.C.D. 88 102 108 120 135 155 180	Fixing Holes ————————————————————————————————————			13	15	15	15	15	20	20
		P.C.D.		88	102	108	120	135	155	180





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 multidisc 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.

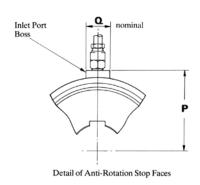
Typical Applications

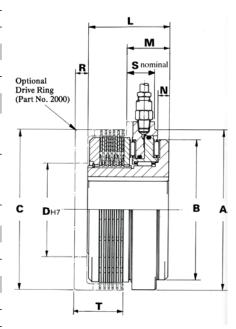
- Printing
- Machine Tool for speed variation at the work spindle and feed engagement
- Building Machines for traveling and combined gears
- Agricultural Machines in the main drive and auxiliary drives (PTO) of harvesters
- Printing Presses
- Marine Gearboxes

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Series 52H

MO	DEL		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		bar	0.8	1.1	1.1
Release Springs		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 (kgm²) = Table Valu					
Clutch Less Drive Ring and O	uter 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 dime	nsions 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	00 175	-			
D.I.N. 6885:1968 Pt. 1; NF.E2 (Bores other than standard ca			25	45	65
by special order)	ar bo obtained		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)			0.10	5
A			86	142	195
В			78	120	170
Lengths			7.0	120	170
			60	78	96
M Maximum Enga	naed		34	41.3	50.8
N Disengaged	-9		8.5	11.5	14.0
P			54	80	110
Q Nominal			20	25	30
S Nominal			25	28	35
Drive Ring					30
C			86	142	196
D (H7)			50	80	110
R			8	11	15
T			33	46	59
				70	





[•] More models available

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.

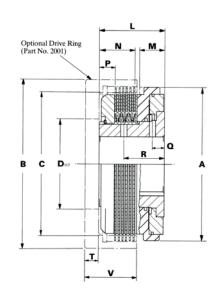
Typical Applications

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

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Series 66H-02

MIC	DEL		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		bar	2.8	2.67	3.0
Release Springs		psi	41	39	43
Drog Torquo		Nm	1.2	5.6	20.3
Drag Torque		ft-lbs	0.9	4.13	15.0
Maximum Speed		revs/min	3900	2500	1800
Inertia (kgm²) = Table Value	e x 10 ⁻³				
Clutch Less Drive Ring and Ou	ter 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 dimens	sions in mm)				
B.S. 4235:1972 Pt. 1 D.I.N. 6885:1968 Pt. 1; NF.E2: (For bores other than specified Engineering Department) Diameters (all dimensions in		our	45 14 x 3.8	80 22 x 5.4	150 36 x 8.4
	mm\				
	mm)		125	220	355
A A	mm)	to cylinder	125	220	355
	mm)	to cylinder	6.4	10.0	10.0
A Diameter of Feed Holes	mm)	to cylinder to plates			
A Diameter of Feed Holes Lengths	mm)		6.4	10.0	10.0
A Diameter of Feed Holes Lengths L			6.4 6.4 59	10.0 8.0 110	10.0 10.0 181
A Diameter of Feed Holes Lengths L M Maximum Engage			6.4 6.4 59 25.2	10.0 8.0 110 40.7	10.0 10.0 181 83.8
A Diameter of Feed Holes Lengths L			6.4 6.4 59 25.2 31.3	10.0 8.0 110 40.7 62	10.0 10.0 181 83.8 98
A Diameter of Feed Holes Lengths L M Maximum Engag N P			6.4 6.4 59 25.2 31.3 9.5	10.0 8.0 110 40.7 62 25	10.0 10.0 181 83.8 98 36.5
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q			6.4 6.4 59 25.2 31.3 9.5	10.0 8.0 110 40.7 62 25 20	10.0 10.0 181 83.8 98 36.5 33
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R			6.4 6.4 59 25.2 31.3 9.5	10.0 8.0 110 40.7 62 25	10.0 10.0 181 83.8 98 36.5
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R Drive Ring			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0	10.0 8.0 110 40.7 62 25 20 75	10.0 10.0 181 83.8 98 36.5 33 127
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R			6.4 6.4 59 25.2 31.3 9.5	10.0 8.0 110 40.7 62 25 20	10.0 10.0 181 83.8 98 36.5 33
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R Drive Ring B			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0	10.0 8.0 110 40.7 62 25 20 75	10.0 10.0 181 83.8 98 36.5 33 127 420 359.3
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R Drive Ring B C			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0	10.0 8.0 110 40.7 62 25 20 75 245 207.7	10.0 10.0 181 83.8 98 36.5 33 127
A Diameter of Feed Holes Lengths L M Maximum Engage N P Q R Drive Ring B C D (H7)			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0	10.0 8.0 110 40.7 62 25 20 75 245 207.7 130	10.0 10.0 181 83.8 98 36.5 33 127 420 359.3 220
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R Drive Ring B C D (H7) T			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0 146 117.7 74	10.0 8.0 110 40.7 62 25 20 75 245 207.7 130 17	10.0 10.0 181 83.8 98 36.5 33 127 420 359.3 220 27
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R Drive Ring B C D (H7) T			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0 146 117.7 74 11 44	10.0 8.0 110 40.7 62 25 20 75 245 207.7 130 17 79	10.0 10.0 181 83.8 98 36.5 33 127 420 359.3 220 27 136
A Diameter of Feed Holes Lengths L M Maximum Engag N P Q R Drive Ring B C D (H7) T V Number of Teeth			6.4 6.4 59 25.2 31.3 9.5 10.1 40.0 146 117.7 74 11 44 48	10.0 8.0 110 40.7 62 25 20 75 245 207.7 130 17 79 67	10.0 10.0 181 83.8 98 36.5 33 127 420 359.3 220 27 136 122



[•] More models available