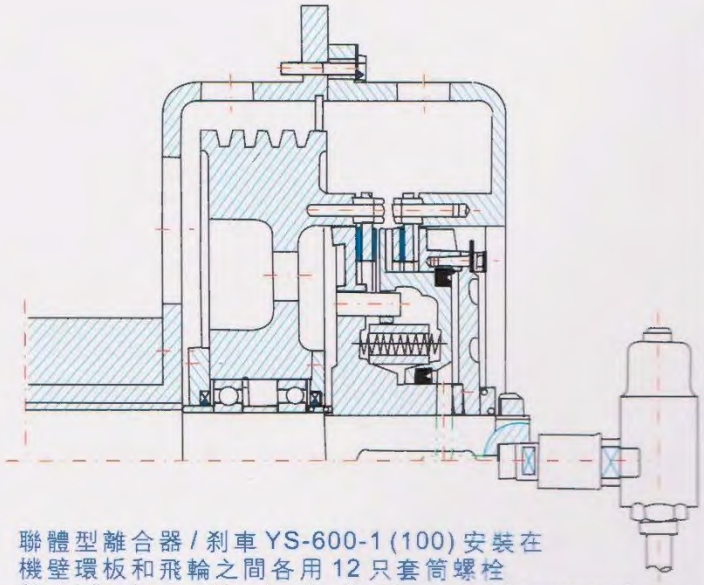
NIIKA®
Since 1989

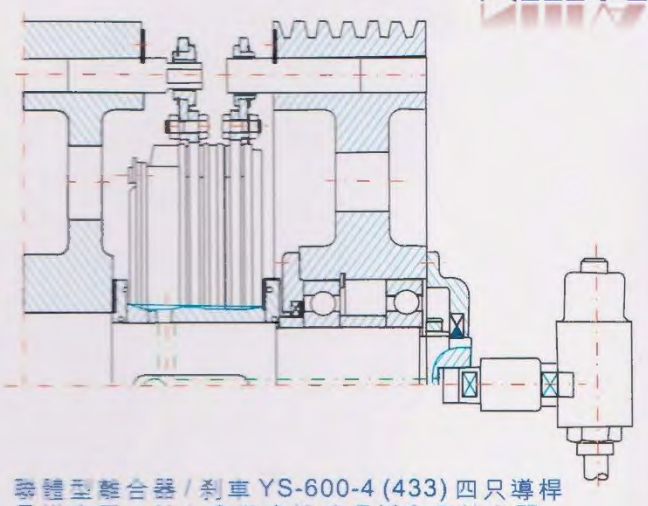
Precise
Efficiency

Powerful Pneumatic Clutch / Brake

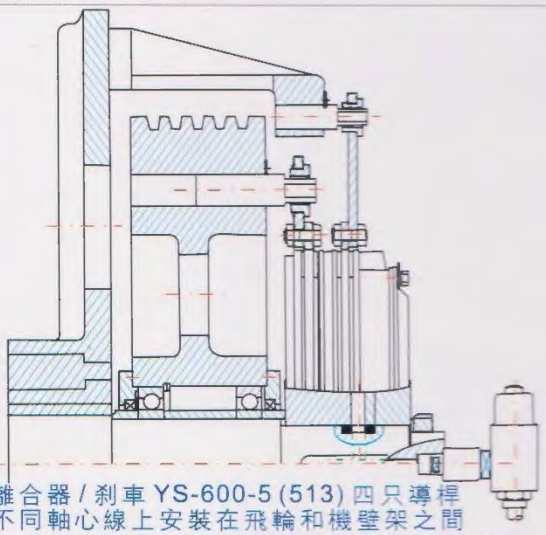
Automation
Professional



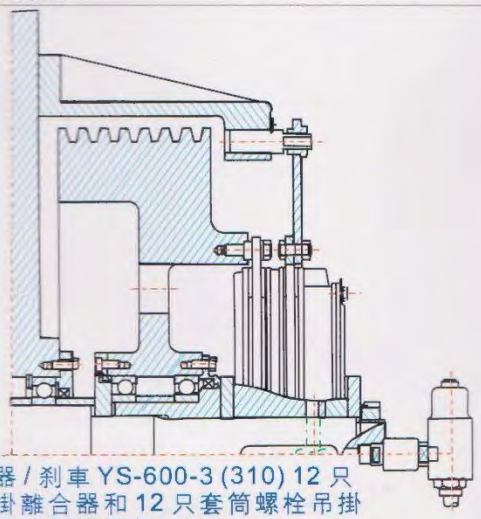
聯體型離合器 / 剎車 YS-600-1 (100) 安裝在機壁環板和飛輪之間各用 12 只套筒螺栓
Clutch/brake combined unit with 12-point plate suspension series 1 arranged between flywheel and flywheel cover of a press drive.



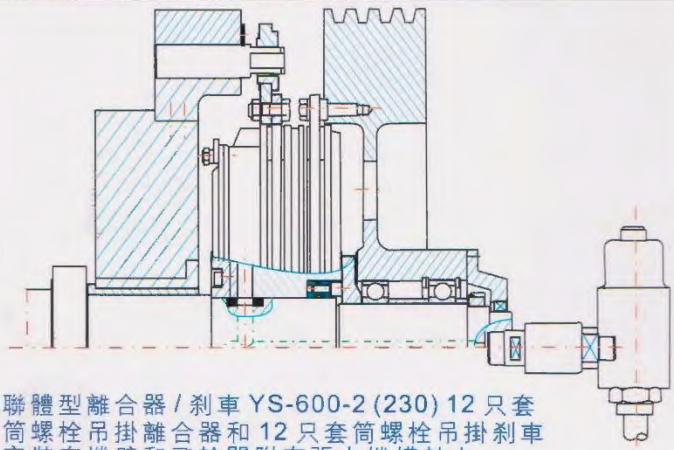
聯體型離合器 / 剎車 YS-600-4 (433) 四只導桿吊掛在同一軸上安裝在機壁環板和飛輪之間
Clutch/brake combined unit with short lugs for two-point plate suspension, series 4 arranged between machine frame and flywheel.



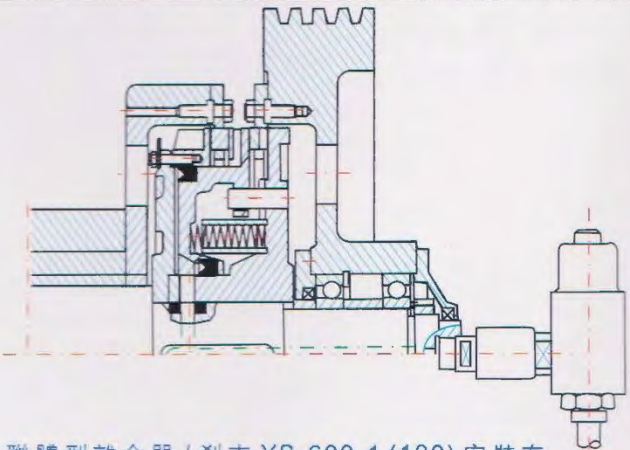
聯體型離合器 / 剎車 YS-600-5 (513) 四只導桿吊掛在不同軸心線上安裝在飛輪和機壁架之間
Clutch/brake combined unit with short and long lugs for two-point plate suspension, series 5 fitted to flywheel and fixing arms.



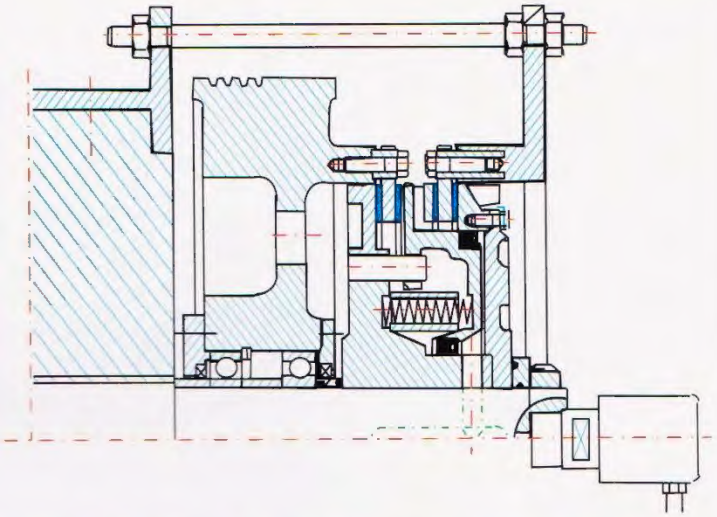
聯體型離合器 / 剎車 YS-600-3 (310) 12 只套筒螺栓吊掛離合器和 12 只套筒螺栓吊掛剎車安裝在飛輪和機壁架
Clutch/brake combined unit with 12-point suspension of the clutch plate and two-point suspension of the brake plate with long lugs series 3 fitted to the flywheel and fixing arms.



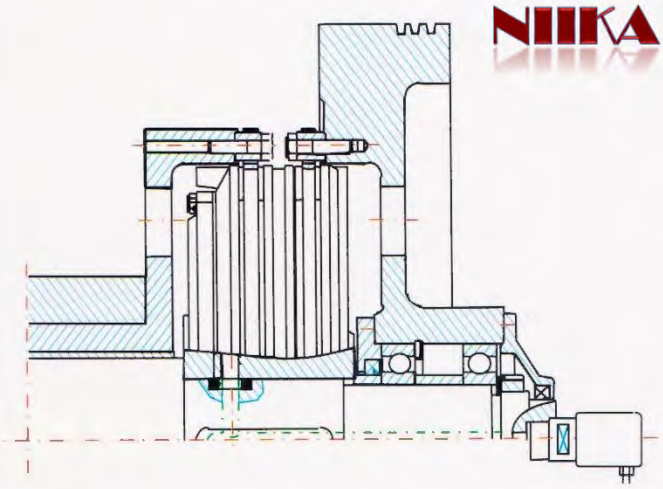
聯體型離合器 / 剎車 YS-600-2 (230) 12 只套筒螺栓吊掛離合器和 12 只套筒螺栓吊掛剎車安裝在機壁和飛輪間附有張力機構軸上
Clutch / brake combined unit with 12-point suspension of the clutch plate and two-point suspension of the brake plate, with short lugs, series 2 arranged between machine frame and flywheel assembly of the combination on the shaft with tension sets (please request standards sheet ON2.1.87 for this purpose).



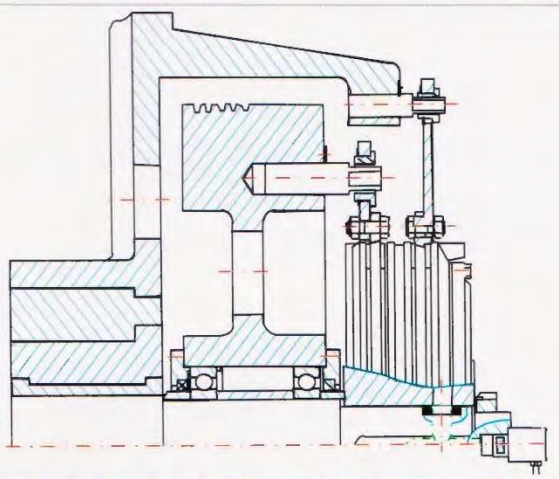
聯體型離合器 / 剎車 YS-600-1 (100) 安裝在沖床飛輪和護蓋環板之間各用12只套筒螺栓固定
Clutch/brake combined unit with 12-point suspension in friction block version, series 1 arranged between machine frame and flywheel.



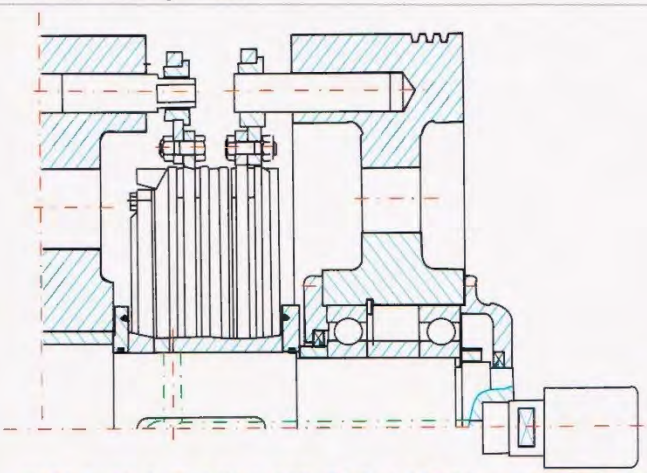
離體型離合器 / 剎車 YS-700-1 (100) 安裝在機壁環板和飛輪之間各用 12 只套筒螺栓
Clutch/brake combined unit with 12-point plate suspension series 1 arranged between flywheel and flywheel cover of a press drive.



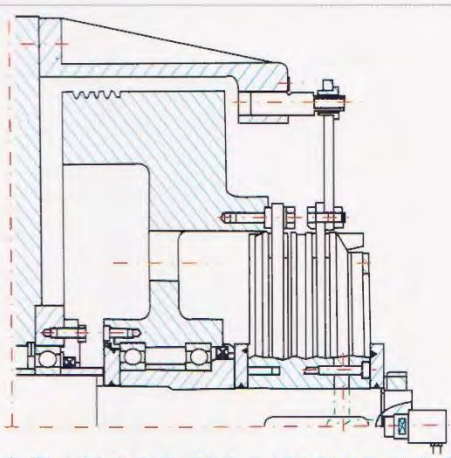
聯體型離合器 / 剎車 YS-700-1 (100) 安裝在沖床飛輪和護蓋環板之間各用 12 只套筒螺栓固定
Clutch/brake combined unit with 12-point suspension in friction block version, series 1 arranged between machine frame and flywheel.



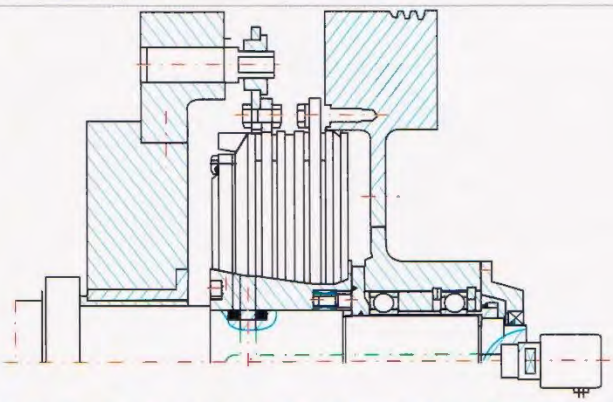
聯體型離合器 / 剎車 YS-700-5 (513) 四只導桿吊掛在不同軸心線上安裝在飛輪和機壁架之間
Clutch/brake combined unit with short and long lugs for two-point plate suspension, series 5 fitted to flywheel and fixing arms.



聯體型離合器 / 剎車 YS-700-4 (433) 四只導桿吊掛在同一軸上安裝在機壁環板和飛輪之間
Clutch / brake combined unit with short lugs for two-point plate suspension, series 4 arranged between machine frame and flywheel.

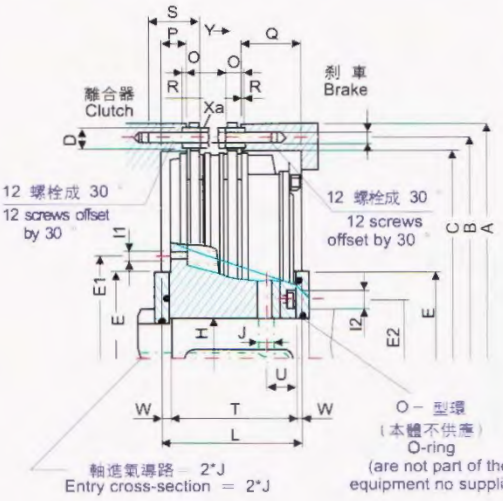


聯體型離合器 / 剎車 YS-700-3 (310) 12 只套筒螺栓吊掛離合器和 12 只套筒螺栓吊掛剎車安裝在飛輪和機壁架
Clutch/brake combined unit with 12-point suspension of the clutch plate and two-point suspension of the brake plate with long lugs series 3 fitted to the flywheel and fixing arms.

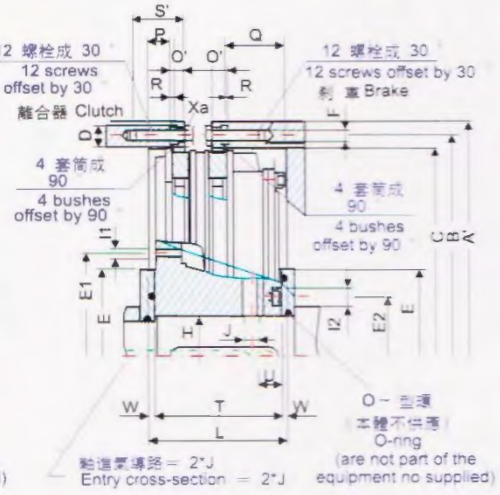


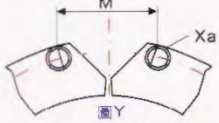
聯體型離合器 / 剎車 YS-700-2 (230)12 只套筒螺栓吊掛離合器和 12 只套筒螺栓吊掛剎車安裝在機壁和飛輪間附有張力機構軸上
Clutch/brake combined unit with 12-point suspension of the clutch plate and two-point suspension of the brake Plate with short lugs, series 2 arranged between machine frame and flywheel assembly of the combination on the shaft with tension sets (please request standards sheet ON2.1.87 for this purpose).

型號 YS-600-1 (100) 附 24 只導路襯套按裝用
YS-600-1 (100) with 24-point plate suspension



型號 YS-666 塊狀使用
YS-666 with friction block

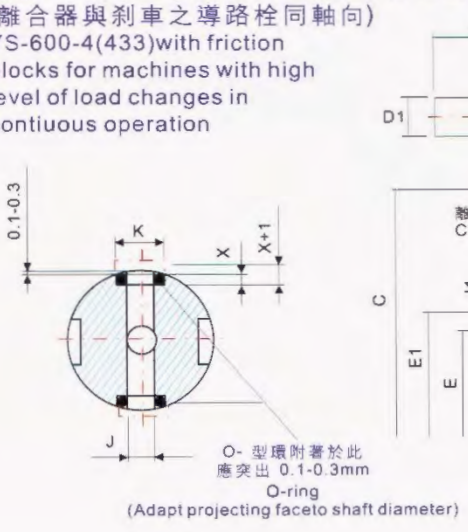


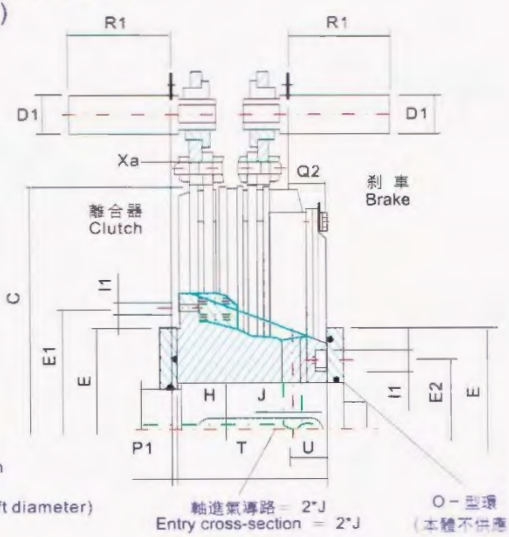


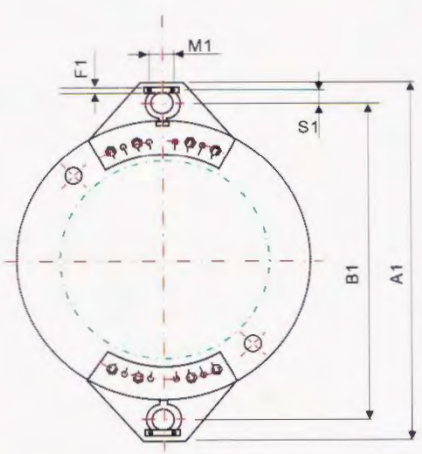
為了達到良好的散熱效果，按裝時請特別注意螺栓襯套與離合器及剎車板上之懸掛孔均應保持間隙，為了方便螺栓的鎖緊與卸除，剎車板是以 180° 切開之兩片板結合的如圖Y 可卸除剎車片的直徑大約為1.55*A。

Adequate ventilation opertures Should be provided between the suspension screws.
Additional ventilation can be Achieved throug fixing of ventilation fans on the clutch plate. Details will be given on request.
To allow fitting and removal of the screws, two opertures are provided in the brake plate offset 180° (see view Y)
Minimum diameter required for the dismantling of the plates is approx. 1.55xA

型號 YS-600-4(433) 附 4 只導路栓按裝用
(離合器與剎車之導路栓同軸向)
YS-600-4(433)with friction blocks for machines with high level of load changes in contiuous operation

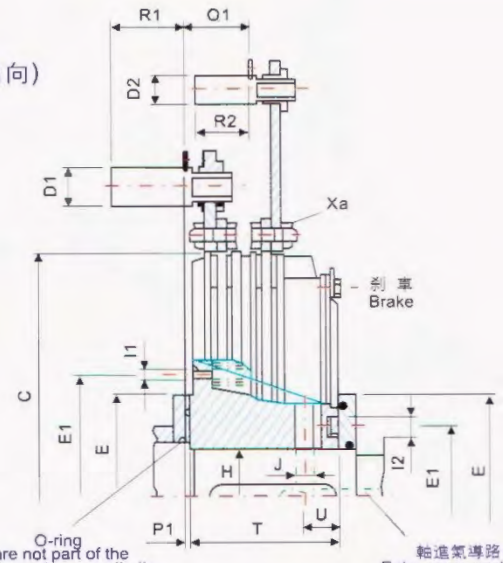


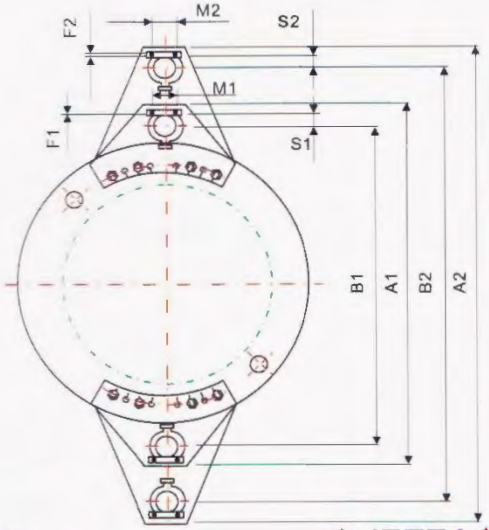




型號 YS-600-5 (513)
附 4 只導路栓按裝用
(離合器與剎車之導路栓非同軸向)
YS-600-5(513)with friction blocks for machines with high level of load changes in contiuous operation

軸孔需工道鍵槽成 180°
2 道進氣孔 (丁) 彼此成 180°
且與鍵槽成 90°
In the bore 2 keyways offset by 180°
2 air inlets (T) offset by 180° and offset relative to the keyways by 90°





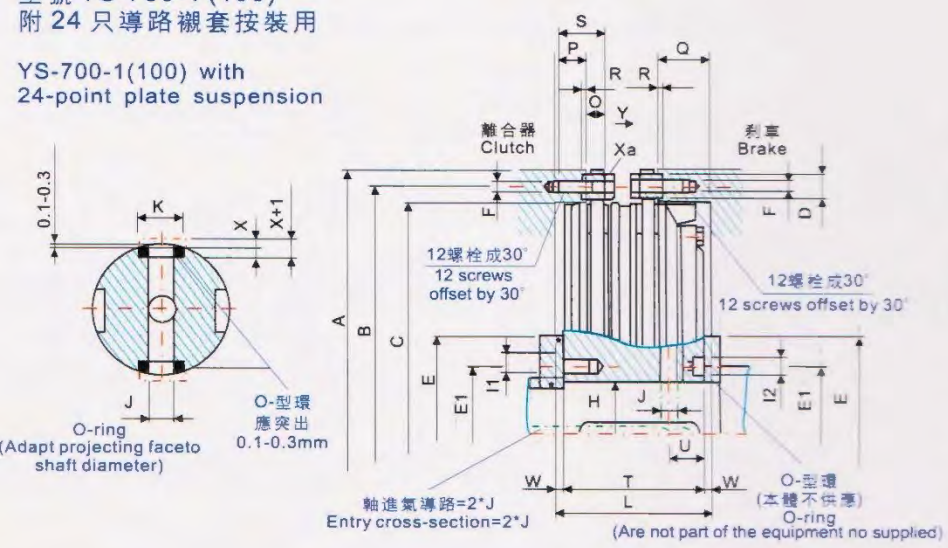
規格尺寸 Specification			62	67	72	77	80	83	87	90	91	92	93
工作氣壓 Operating pressure P=6.0 atm (Kgm)	離合器轉矩 Clutch torque		300	410	570	900	1150	1750	2500	3400	4500	6700	9300
	煞車器轉矩 Brake torque		210	280	390	610	810	1190	1740	2250	2900	4200	5900
最高轉速 RPM min			1500	1400	1250	1100	1000	850	750	700	630	560	500
每次氣壓量 Stroke volumen (l)	全新時 New condition		0.45	0.53	0.76	1.21	1.59	2.37	3.04	4.07	5.02	6.68	8.3
	最大磨損後 With max.wear		0.64	0.76	1.14	1.85	2.35	3.57	4.58	6.24	7.64	10.54	13.11
慣性力矩 Inertias $J=Mi^2(Kgm^2)$	外部 External	內部 Internal	0.52	0.84	1.41	2.94	5	8.8	15.5	24.2	37.25	67.25	118.15
		1 (100)	0.2	0.33	0.5	1.08	1.7	3.34	5.78	9.53	12.54	20.45	37.57
		普通塊狀 General block	0.2	0.33	0.52	1.1	1.78	3.46	6.02	9.65	12.46	21.8	39.43
		4(433),5(513)	0.35	0.57	0.99	1.85	3.0	6.32	9.69	20	25.07	37.22	71.51
淨重量 Weight (Kg)	1(100)		45	59	80	124	170	240	333	437	539	763	1076
	普通塊狀 General block		42	59	80	124	170	240	334	435	534	768	1079
	4(433)		48	66	90	137	189	272	368	509	614	846	1209
	5(513)		48	67	90	136	191	272	369	518	624	858	1217
H	預留孔燈 Remain hole		45	45	45	65	90	100	125	125	140	150	170
	軸徑 Bore		90	95	105	125	145	160	180	200	220	240	270
	健槽 Keyway		25x5.4	25x5.4	28x6.4	32X7.4	36x8.4	40x9.4	45x10.4	45x10.4	50x11.4	56x12.4	63x12.4
直徑尺寸 Diameters	A		435	482	535	620	680	775	865	950	1025	1145	1285
	A1		560	620	695	780	870	1000	1090	1260	1340	1460	1650
	A2		680	775	855	950	1075	1235	1335	1595	1670	1790	2015
	A'		430	480	530	620	680	770	860	945	1020	1140	1280
	B		408	450	500	584	640	725	810	890	965	1080	1215
	B1		495	550	610	695	770	880	970	1100	1180	1300	1465
	B2		635	710	790	885	990	1135	1235	1450	1525	1645	1855
	C		380	420	465	543	593	675	755	830	905	1015	1140
	D		18	22	25	25	30	35	40	45	45	50	55
	D1		30	32	40	40	45	55	55	75	75	75	90
	D2		22	30	30	30	40	45	45	65	65	65	75
	E		160	160	180	225	250	275	300	330	360	400	450
	E1		190	200	230	275	300	345	380	410	450	520	580
	E2		110	115	125	150	175	190	210	230	260	285	320
	F		M10	M12	M14	M14	M16	M20	M24	M24	M24	M27	M30
	F1		5.5	5.5	6.5	6.5	6.5	8.5	8.5	10.5	10.5	10.5	10.5
	F2		5.5	5.5	5.5	5.5	6.5	6.5	6.5	8.5	8.5	8.5	10.5
	I1		M8	M10	M10	M12	M12	M16	M16	M20	M20	M24	M27
	I2		16(M10)	18.5(M12)	18.5(M12)	21(M14)	26(M16)	28(M18)	28(M18)	28(M18)	34(M22)	42(M27)	42(M27)
	J		13	14	16	18	20	21	23	25	30	32	35
	K		30	30	35	35	40	40	40	50	55	60	65
長度尺寸 Length diameters	L		122	135	150	170	195	215	240	258	270	305	340
	M		105.6	116.5	129.4	151.15	165.65	187.65	209.65	230.4	249.75	279.5	314.5
			±0.125	±0.125	±0.125	±0.14	±0.16	±0.16	±0.18	±0.18	±0.18	±0.21	±0.21
	M1		25	25	35	35	35	45	45	60	60	60	60
	M2		25	25	25	25	35	35	35	45	45	45	60
	O/O'		19/11	20/13.5	22/14.5	26/16	27/18	32/21.5	37/24	45/26	45/26	50/30	55/34
	P		21	23	27	30	32	34	39	43	47	51	57
	P1		12	7	10.5	13	12.5	18	12.5	26.5	22.5	16.5	19.5
	Q		52	55	60	68	84	90	100	104	108	125	136
	Q1		52	54	66.5	80.5	81	98.5	107.5	120.5	124.5	134.5	158
	Q2		19	25	22.5	25	39.5	38	48.5	34.5	38.5	57.5	59.5
	R		3	3	3	3	5	5	5	10	10	10	10
	R1		60	65	80	80	90	110	110	150	150	150	180
	R2		45	60	60	60	80	90	90	130	130	130	150
	S/S'		35/30	40/35	45/40	50/40	55/50	70/60	80/70	90/80	90/80	100/90	110/90
	S1		20	21	27	27	29.5	38.5	38.5	52.5	52.5	52.5	60
	S2		16	20	20	20	27	29.5	29.5	43.5	43.5	43.5	52.5
	T		112	125	140	160	185	205	230	248	260	295	330
	U		27	30	33	37.5	44	47	55	60	68	76	85
	W		5	5	5	5	5	5	5	5	5	5	5
	X		7	7	9	9	11	11	11	15	15	17	17
螺栓鎖緊轉矩Xa(Kgm) Suspension knit matrix	1(100)		69	120	190	190	295	580	1000	1000	1000	1500	2000
	4(433),5(513)		49	86	86	86	210	210	410	710	710	710	1450

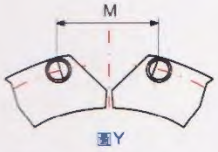
1. 本離合器僅設計供應乾式運轉，摩擦片表面請勿沾油或任何潤滑物。
2. 最大容許工作氣壓=6a tm 。
3. 轉速超過500rpm 飛輪必須平衡校正。
4. 套筒(D)可隨客户機台變更公差；軸孔、川鍵公差照一般標準規格加工。
5. 本規格如有變更，不另行通知。
6. 本公司保留設計更改權。

◎ 由於不斷的研究、發展、改造，機械設計及規格，如有更改恕不另行通知。

型號 YS-700-1 (100)
附 24 只導路襯套按裝用

YS-700-1(100) with 24-point plate suspension



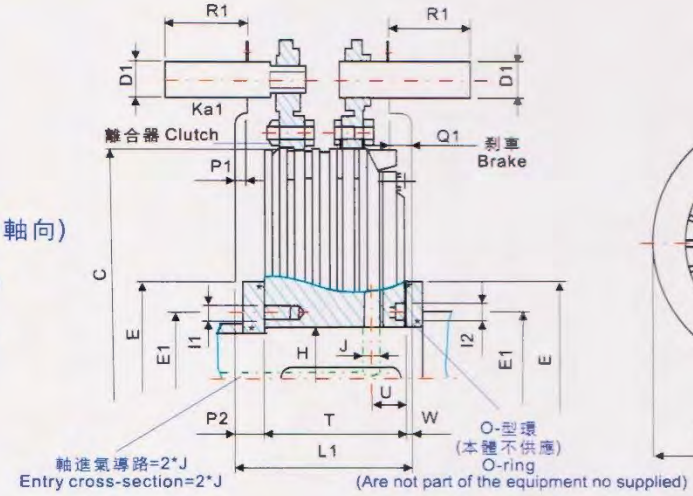


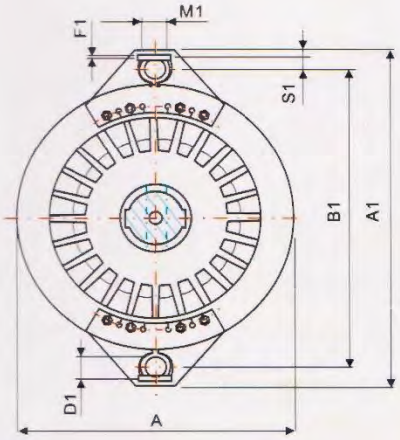
為了達到良好的散熱效果，按裝時請特別注意螺栓襯套與離合器及剎車板上之懸掛孔均應保持間隙為了方便螺栓的鎖緊與卸除，剎車板是以 180° 切開之兩片板結合的如圖 Y 可卸除剎車片的直徑大約為 1.55 xA。

Adequate ventilation opertures should be provided between the suspension Screws. Additional ventilation can be achieved throug fixing of ventilation fans on the clutch plate. Details will be Given on request. To allow fitting and removal ofthe screws, two opertures are provided in the brake plate offset by 180° (see view Y) Minimum diameter required for the dismantling of the Plates is approx. 1.55xA

型號 YS-700-4 (433)
附 4 只導路栓按裝用
(離合器與剎車之導路栓同軸向)

YS-700-4 (433) with friction blocks for machines with high level of load changes in contiuous operation



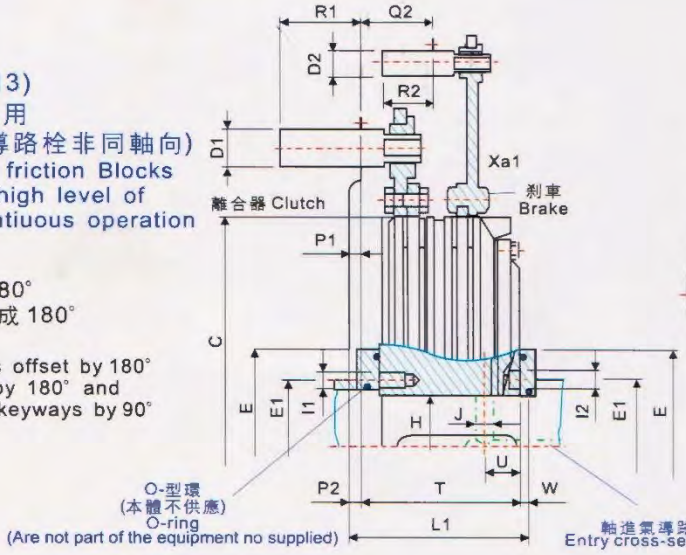


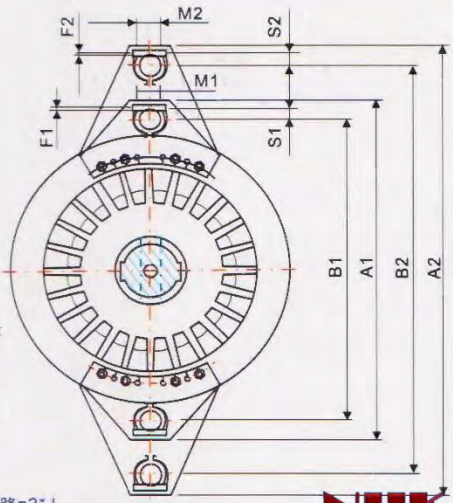
型號 YS-700-5 (513)
附 4 只導路栓按裝用
(離合器與剎車之導路栓非同軸向)

YS-700-5(513) with friction Blocks for machines with high level of load changesin contiuous operation

軸孔需工道鍵槽成 180°
2 道進氣孔 (丁) 彼此成 180°
且與鍵槽成 90°

In the bore 2 keyways offset by 180°
2 air inlets (T) offset by 180° and offset relative to the keyways by 90°





規格尺寸 Specification			09(40)	12(50)	15(61)	18(71)	19(74)	21(76)	23(79)	26(82)	30(85)	35(88)	36(91)	37(92)
工作氣壓 Operating pressure	P=5.5 atm	離合器轉矩 Clutch torque	55	105	215	425	515	630	860	1280	1700	2600	3900	5400
	(Kgm)	煞車器轉矩 Brake torque	35	70	150	300	350	450	600	850	1200	1800	2500	3500
	P=6 atm	離合器轉矩 Clutch torque	63	125	250	500	600	750	1000	1500	2000	3000	4500	6300
	(Kgm)	煞車器轉矩 Brake torque	35	70	150	300	350	450	600	850	1200	1800	2500	3500
最高轉速 RPM		min	2250	1750	1400	1200	1100	1000	900	800	700	600	600	550
每次氣壓量 Stroke volumen (l)		全新時 New condition	0.1	0.17	0.35	0.65	0.75	0.95	1.35	1.85	2.5	3.5	4.5	6.0
		最大磨損後 With max.wear	0.15	0.3	0.6	1.3	1.55	1.9	2.2	3.0	3.75	5.45	7.0	9.5
慣性力矩 Inertias $J=Mi^2(Kgm^2)$	內部 Internal	1	0.058	0.188	0.55	1.5	2.175	3.125	5.0	9.25	15.75	28.75	32.0	56.75
	外部 External	1(100)	0.025	0.063	0.2	0.575	0.825	1.175	1.85	3.75	6.5	11.75	13.75	22.5
		4(433) 5(513)	0.038	0.095	0.35	1.025	1.425	2.0	3.15	6.875	10.0	21.5	25.0	36.75
		6(666)	0.091	0.286	0.899	2.468	3.67	5.727	9.261	17.640	27.01	27.5	28.25	50
總重量 Weight (Kg)		1(100)	11.5	23.5	46.5	85	109	134	173	268	378	540	623	980
		3(310)	13	24.8	50.5	93.5	117.5	144.5	185.5	286.5	402.5	560	643	985.5
		4(433)	13.3	25.3	51.5	96	120.5	148	190.5	295	416	600	650	1005.5
		5(513)	13.8	25.5	53	98.5	123	151	194	299	421	646	670	1010
H	預留孔燈 Remain hole		25	35	45	45	55	60	70	90	100	115	115	115
	軸徑 Bore		45	50	80	95	105	110	125	145	160	180	185	200
			14x3.8	18x4.4	22x5.4	25x5.4	28x6.4	28x6.4	32x7.4	36x8.4	40x9.4	45x10.4	45x10.4	45x10.4
	鍵槽 Keyway		40	60	70	85	95	100	110	135	150	160	180	200
			12x3.3	18x4.4	20x4.9	22x5.4	25x5.4	28x6.4	28x6.4	36x8.4	36x8.4	40x9.4	45x10.4	45x10.4
	公差 H7 Govemment H7		35	50	60	70	85	90	100	125	140	150	160	185
			10x3.3	14x3.8	18x4.4	20x4.9	22x5.4	25x5.4	28x6.4	32x7.4	36x8.4	36x8.4	40x9.4	40x9.4
直徑尺寸 Diameters	A		275	347	435	535	570	620	680	775	865	1000	1025	1145
	A1		360	435	560	695	730	780	870	1000	1090	1285	1340	1460
	A2		442	522	680	855	895	950	1075	1235	1335	1570	1670	1790
	B		255	325	408	500	536	584	640	725	810	945	965	1080
	B1		315	390	495	610	645	695	770	880	970	1140	1180	1300
	B2		410	490	635	790	830	885	990	1135	1235	1450	1525	1645
	C		236	304	380	465	497	543	593	675	755	885	905	1015
	D		12	15	18	25	25	25	30	35	40	42	45	50
	D1		22	22	30	40	40	40	45	55	55	65	75	75
	D2		14	14	22	30	30	30	40	45	45	55	65	65
	E		85	125	145	170	175	190	210	240	265	305	335	375
	E1		58	81	98	115	130	135	150	175	190	255	265	300
	F		M6	M8	M10	M14	M14	M14	M16	M20	M24	M24	M24	M27
	G		0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.4	1.5	1.5	1.8	1.8
	I1		M8	M10	M10	M12	M14	M14	M16	M16	M16	M28	M28	M34
	I2		11	14	14	17	17	19.5	19.5	23.5	25.5	28	28	34
	J		9	12	14	14	17	17	17	23	23	28	30	32
	K		20	25	30	30	35	35	35	40	40	50	55	60
長度尺寸 Length diameters	L		74	90	110	135	150	155	170	195	213	265	285	320
	M		66	84.12	105.6	129.4	138.7	151.15	165.65	187.65	209.65	249.75	279.5	279.5
	O		13	16	19	22	26	26	27	32	37	40	45	50
	P		15	18	22.5	26.5	29.5	29.5	31	35.5	38	73	82	90
	P1		—	—	—	—	—	—	—	—	—	5	12.8	12.5
	P2		8.5	10	10	10	12.5	12.5	12.5	15	12.5	15	18.5	28.5
	Q		24	30.5	36.5	42.5	48	49.5	56	64.5	69.5	78	87	95
	Q1		4	6.5	9	11	11	12.5	17.5	19	24	20	23.5	33.5
	Q2		39	49	52	68.5	80	83.5	84	101	110.5	125	123	137.5
	R		2	3	3	3	3	3	5	5	5	5	10	10
	R1		45	45	60	80	80	80	90	110	110	130	150	150
	R2		28	28	45	60	60	60	80	90	90	110	130	130
	S		25	30	35	45	50	50	55	70	80	80	90	100
	S_1		16	16	20	27	27	27	29.5	38.5	38.5	43.5	52.5	52.5
	S_2		11	11	16	20	20	20	27	29.5	29.5	38.5	43.5	43.5
	T		66	82	100	125	140	145	160	185	203	255	260	259
	U		18.5	23	27	32	36	36.5	42	48	53	67	68	76
	V		10	10	10	15	15	15	15	20	20	20	20	20
	W		4	4	5	5	5	5	5	5	5	5	12.5	12.5
	X		5	7	7	7	9	9	9	11	11	15	15	17
來令厚度(mm) Lining thickness	新品 New		3	3.25	3.5	5	5.5	5.5	6	7	7.5	8	8	8
	舊(需更換)Old		2	2.25	2	3	3.5	3	3.5	4	4.5	5	5	5
螺栓鎖緊轉矩 Xa(Kgm) Suspension knit matrix	Xa		15	35	69	190	190	190	295	580	1000	1000	1000	1500

1. The clutch is only designed for supplying the dry running, and please don't Have any oil stains or lubricants on surface of the friction sheet.
2. The maximum working tolerance surging=6atm.
3. Lt should correct to balance if the speed of the fly-wheel exceeds 500 rpm.
4. The sleeve is available to change the tolerance with following customer`s models To process the shaft hole and the colter tolerance in accordance with the general specifications.
5. Sorry not to issue any prior notice if there is any change for the specifications.
6. All specifications and designs are subject to change without notice.

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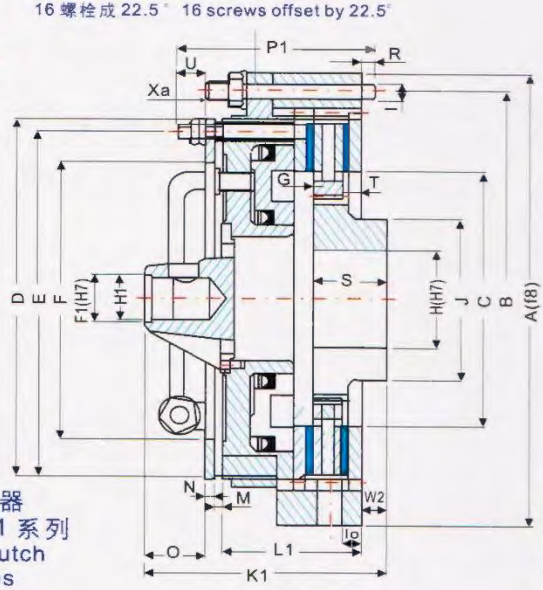
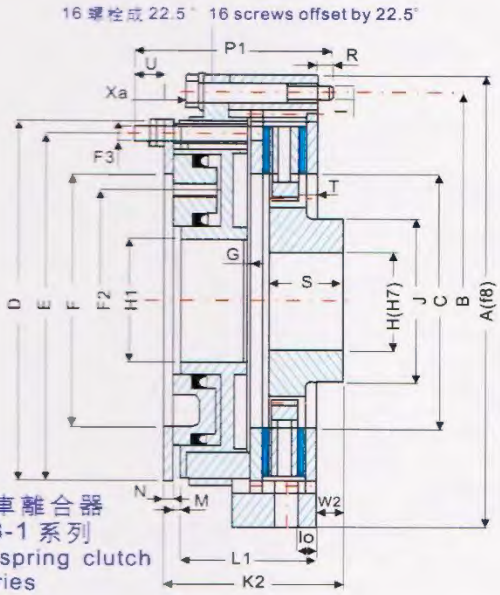
16 螺栓成 22.5° 16 screws offset by 22.5°



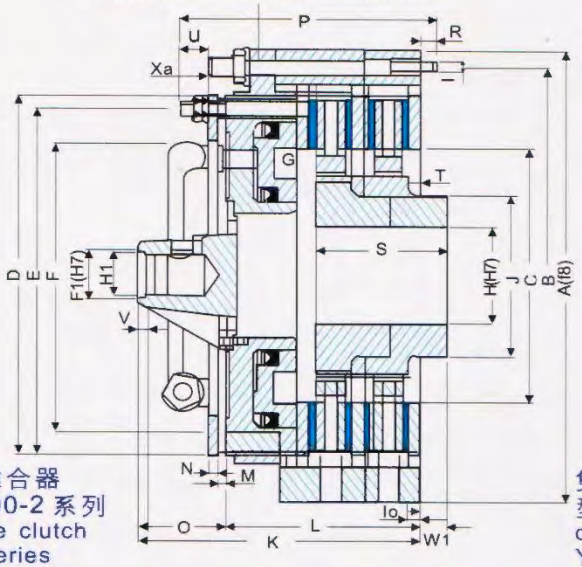
單板剎車離合器
型號 YS-800-1 系列
Single-Plate clutch
YS-800-1 series

16 螺栓成 22.5° 16 screws offset by 22.5°



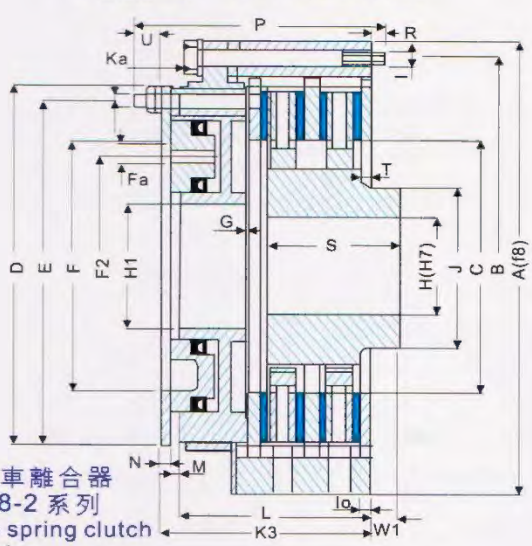
單板彈簧剎車離合器
型號 YS-808-1 系列
Single-Plate spring clutch
YS-808-1 series

16 螺栓成 22.5° 16 screws offset by 22.5°



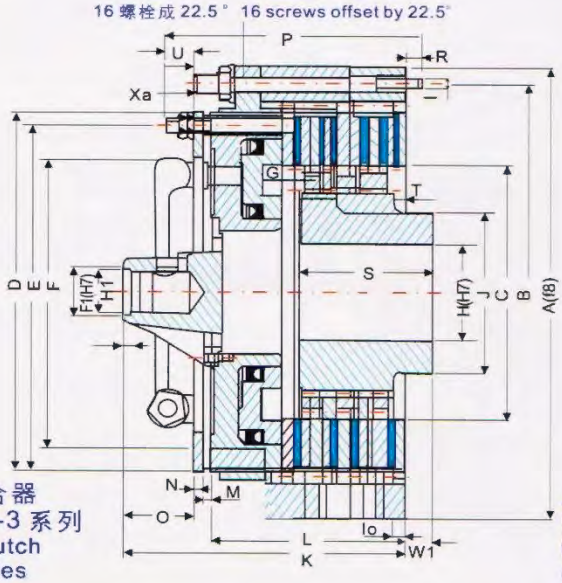
雙板剎車離合器
型號 YS-800-2 系列
double-Plate clutch
YS-800-2 series

16 螺栓成 22.5° 16 screws offset by 22.5°



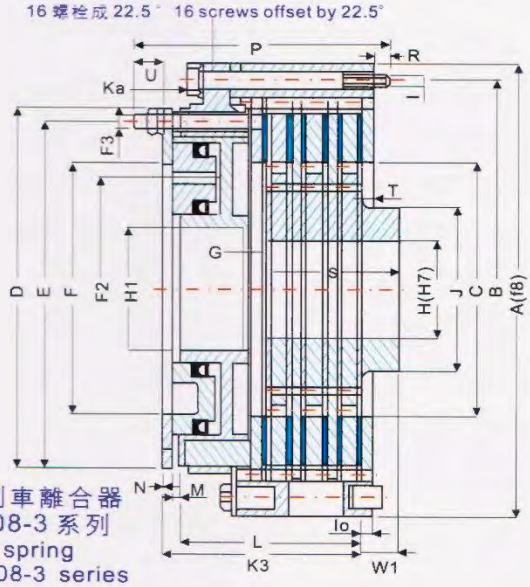
雙板彈簧剎車離合器
型號 YS-808-2 系列
double-Plate spring clutch
YS-808-2 series

16 螺栓成 22.5° 16 screws offset by 22.5°



三板剎車離合器
型號 YS-800-3 系列
triple-plate clutch
YS-800-3 series

16 螺栓成 22.5° 16 screws offset by 22.5°



三板彈簧剎車離合器
型號 YS-808-3 系列
triple-Plate spring
clutch YS-808-3 series

規格尺寸 Specification			51	59	66	72	75	78	80	84	85	90
使用壓力轉矩 (Kgm) Operating pressure	YS-800	單板 Single-Plate-1	47	83	175	260	350	530	680	940	1350	1800
		雙板 Double-Plate-2	88	165	330	520	680	1000	1350	1870	2700	3500
		三板 Triple-Plate-3	135	250	490	760	1000	1460	1990	2800	3920	5300
	YS-808	單板 Single-Plate-1	37.5	74	145	210	295	415	585	830	1170	1650
		雙板 Double-Plate-2	74	145	300	420	590	830	1170	1640	2350	3300
		三板 Triple-Plate-3	115	220	440	660	880	1310	1760	2350	3100	4340
最高轉速 RPM min			2240	1700	1450	1250	1120	1000	850	750	670	600
每次氣壓量 Stroke volumen (l)	新品 New condition		0.055	0.084	0.177	0.243	0.277	0.35	0.379	0.511	0.798	1.140
	舊品 Old condition		0.102	0.169	0.34	0.507	0.603	0.438	2.438	2.438	2.438	2.438
慣性力矩 Inertias $J=mi^2(Kgm^2)$	YS-800-1	內部 Internal	0.01	0.031	0.069	0.146	0.216	0.416	0.768	1.364	2.615	5.269
		外部External	0.068	0.207	0.424	0.815	1.472	2.359	4.975	9.083	15.553	28.952
	YS-800-2	內部 Internal	0.021	0.061	0.134	0.285	0.43	0.734	1.527	2.706	5.207	10.117
		外部External	0.092	0.277	0.576	1.078	1.989	3.199	6.914	12.108	20.696	40.997
	YS-800-3	內部 Internal	0.022	0.07	0.165	0.317	0.553	1.005	2.078	4.143	6.531	12.645
		外部External	0.106	0.319	0.698	1.279	2.332	3.815	8.199	14.505	24.817	51.245
總重量 Weight (Kg)	YS-800-1		12	21	34	47	64	86	125	174	245	380
	YS-800-2		17	30	46	65	90	120	180	245	350	500
	YS-800-3		18	33	52	72	104	140	215	290	405	550
直徑尺寸 Diameters	A		235	300	360	405	455	505	590	670	740	850
	B		223	284	340	385	430	480	562	637	708	812
	C		140	185	220	255	285	315	360	440	460	530
	D		200	260	309	354	394	440	507	590	650	758
	E		188	238	289	325	365	405	470	542	592	685
	F		156	205	240	270	320	350	420	490	530	610
	F1		30	30	35	45	60	60	60	60	75	75
	F2		132.5	180	205	232	270	287	360	430	462.5	494.5
	F3		1/4"	1/4"	3/8"	1/2"	3/4"	3/4"	1"	1"	11/4"	11/4"
	H		M22x1.5	M22x1.5	M27x1.5	M35x1.5	M50x1.5	M50x1.5	M50x1.5	M50x1.5	M65x1.5	M65x1.5
	H1		75	100	130	155	170	207	225	285	285	320
	I		M6	M8	M10	M10	M12	M12	M14	M16	M16	M16
	J		95	125	160	190	200	240	270	330	330	370
長度尺寸 Length diameters	G		0.5	0.75	1.2	1.2	1	1.2	1	1.5	1.5	2
	G1		0.5	0.5	0.65	0.65	0.5	0.7	0.5	1	1	1.5
	K		149.5	167.5	192.7	212	235	250.25	282.25	305	352.5	362
	K1		119	137.25	160	173.75	190.5	219	226.75	244.5	282	265.5
	K2		86.5	106.5	121	132	138.5	167	167.25	188	213.5	200.5
	K3		102	119.5	134	152	164	174.5	199	221	274.5	272
	L		93.5	108.25	121.2	138	149	158.5	180	200	225	249
	L1		66.5	77.25	86.75	98	105.75	111.75	126.25	140.25	160	235
	M		3.5	4.25	5	6	6	6	7	8	8.5	9.5
	N		5	7	8	8	9	10	12	13	14	15
	O		32.5	30.75	38	40	52	51	59.5	56.5	67.5	65.5
	P		122	143.27	163.7	182.5	200	216	236.5	272.5	294	346
	P1		95	112.25	129.5	142.5	156.75	169.25	182.25	212.25	229	298.8
	R		7.5	10	12	12	15	15	18	20	20	25
	R1		12	17.25	19	16	19	20	24	19.5	18	21
	S		65.5	75	84	95	100	113	125	140	160	160
	S1		35	45	52	57	56	82	70	80	90	100
	T		5	5.75	6.5	7	8.5	8.25	11.25	3.5	13.5	15
	T1		5	5.5	4.75	6.25	8.25	8.75	11	8.25	13	15
	U		12.5	13.75	17.5	18.5	21	26.5	19.5	31.5	26.5	47.5
	V		3	3	3	4	5	5	5	5	5	5
	W		15	17.25	20.5	20	19	24.75	23.75	27.5	37.5	23
	W1		11.5	18	22.25	21.75	17.75	40.25	22	26.75	32	23
螺栓鎖緊轉矩Xa(Kgm) Suspension knit matrix	Xa		14	35	69	69	120	120	190	295	295	295

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2. The maximum working tolerance surging=6atm.
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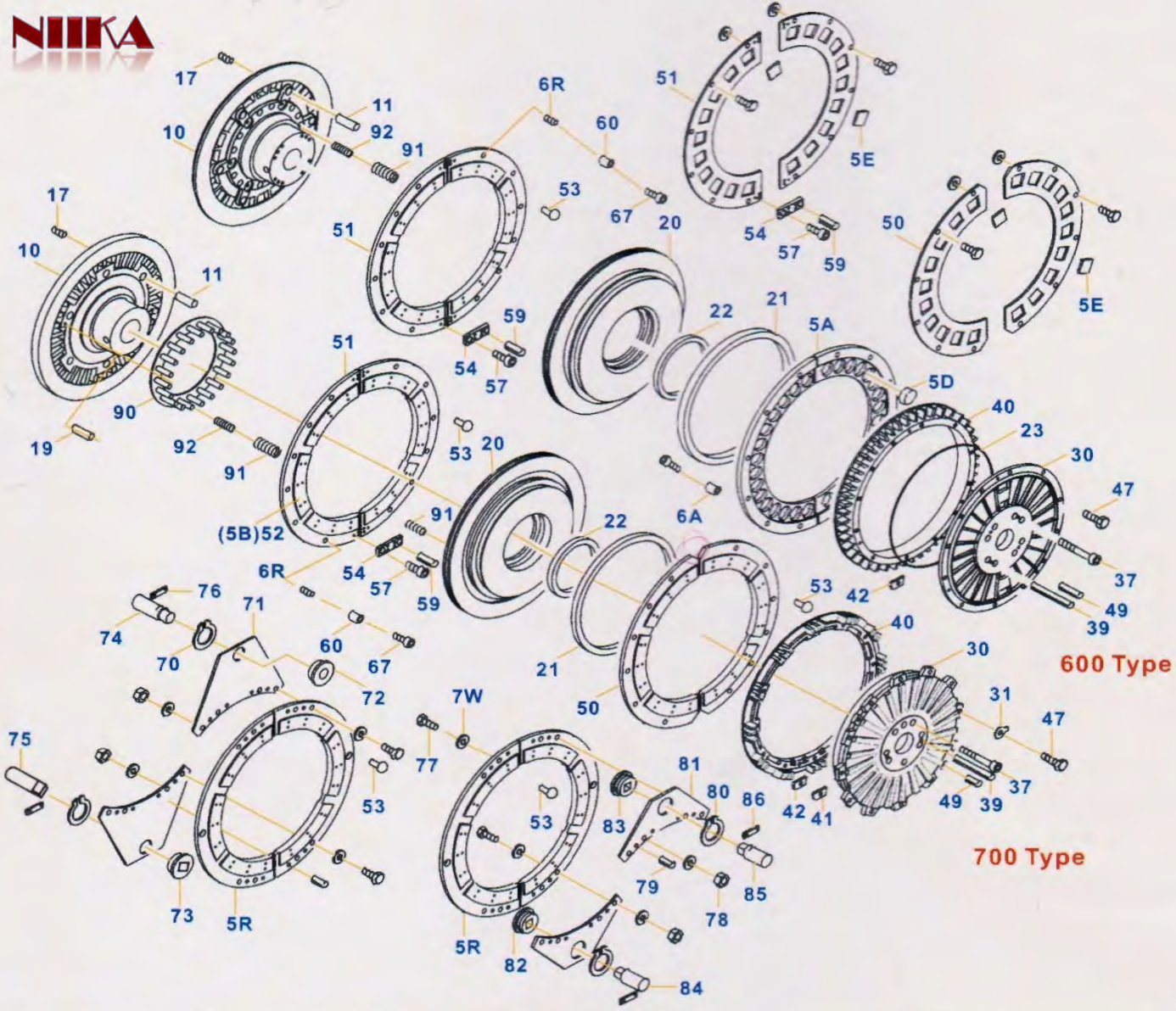

件號	中文名稱	英文名稱
10	輪鼓	Hub
11	導銷	Guid Pin
17	銷固定螺絲	Grubscrew
19	定位空心銷	Collar
20	活塞	Pistion
21	氣封(大	L Grooved Ring
22	氣封(小)	S Grooved Ring
23	O型環	O ring
30	氣缸	Cylinder
3A	氣缸剎車板	Cylinder B Disc
31	單舌墊片	Disc
37	氣缸螺絲	Bolt
39	定位銷	Collar
40	剎車葉板	Pressure Plate
41	隔離板(石綿墊片)	Isolation Disc
42	隔離板(鐵皮墊片)	Disc
47	磨擦板固定螺絲	Bolt
49	氣缸空心銷	Collar
50	剎車板	Braking Disc

件號	中文名稱	英文名稱
51	隔離板	Clutch Disc
52	石棉來令片(扇)	Friction Linging
53	鉚釘	Rivet
54	固定板	Strap
57	固定板螺絲	Socket Head Screw
59	固定板空心銷	Collar
5A	塊狀剎車板	Block Disc
5B	非石棉來令片(扇)	Ns Friction Linging
5E	非石棉來令片(塊)	Friction Linging
5D	石棉來令片(塊)	Block Linging
5R	耳剎車板	Lugs Disc
60	套筒(扇)	Brush
67	套筒螺絲	Bolt
6A	套筒(塊)	Brush B
6R	O型套筒	Brush O
70	小C型扣環	Retaining Ring
71	長耳板	Lugs
72	長耳圓襯套	Bush RL
73	長耳方襯套	Bush SL

件號	中文名稱	英文名稱
74	長耳圓銷	Lugs RL Pin
75	長耳方銷	Lugs S Pin
76	長耳銷固定板	Retaining Platel
77	耳板螺絲	Hexagon Screw
78	螺帽	Nut
79	耳板定位空心銷	Collar
7W	彈簧華司	Lock Washer
80	大C型扣環	Retaining Ring
81	短耳板	Lugs S
82	短耳圓襯套	Bush RS
83	短耳方襯套	Bush SS
84	短耳圓銷	Lugs RS Pin
85	短耳方銷	Lugs SS Pin
86	短耳銷固定板	Retaining Plates
90	彈簧座	Spring Column
91	彈簧(大)	Compression Spring L
92	彈簧(小)	Compression Spring S

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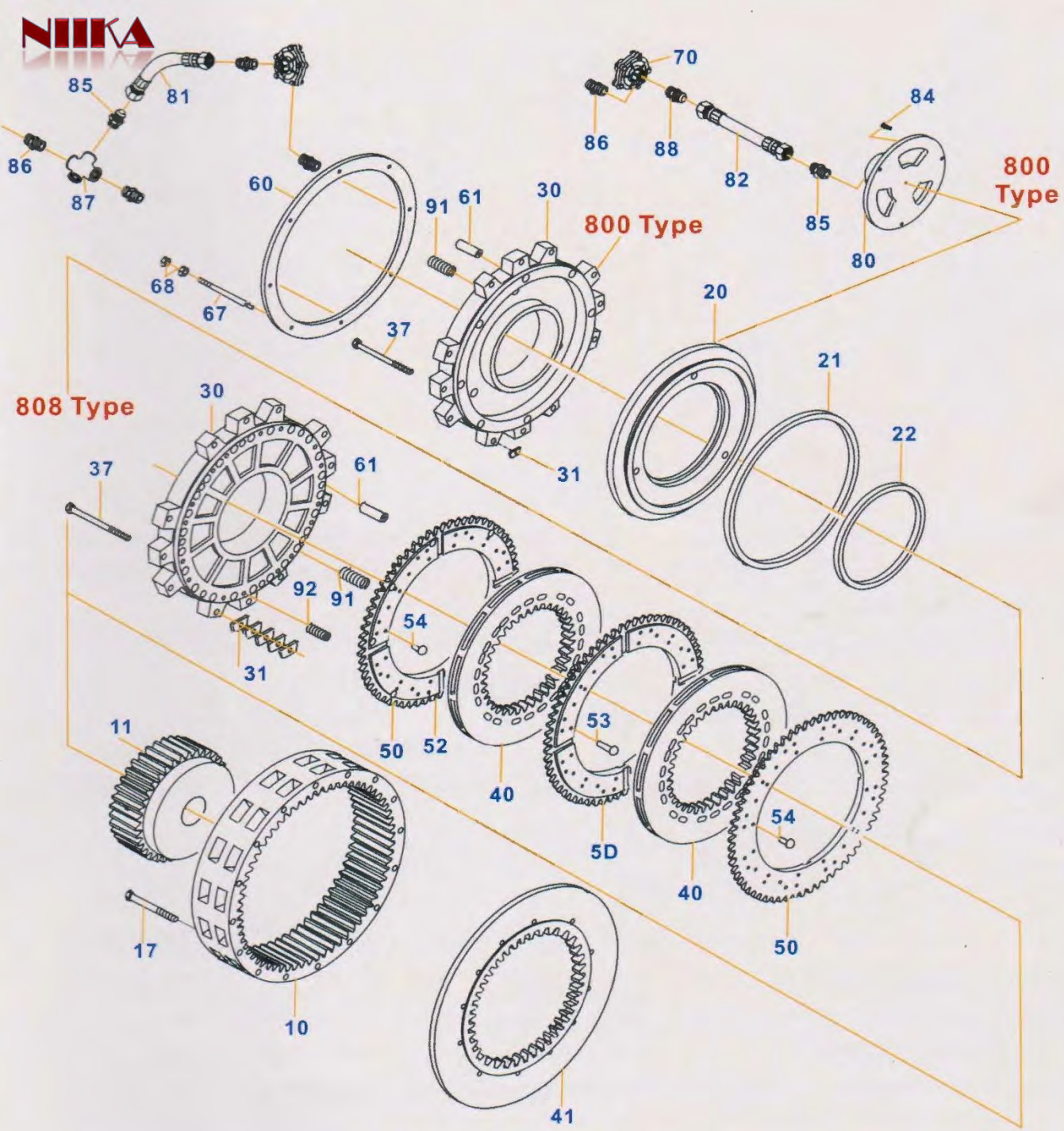
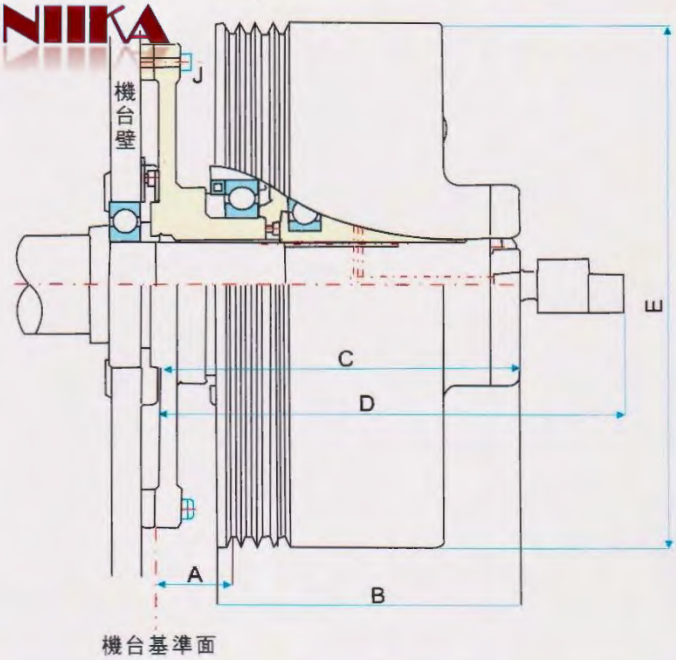
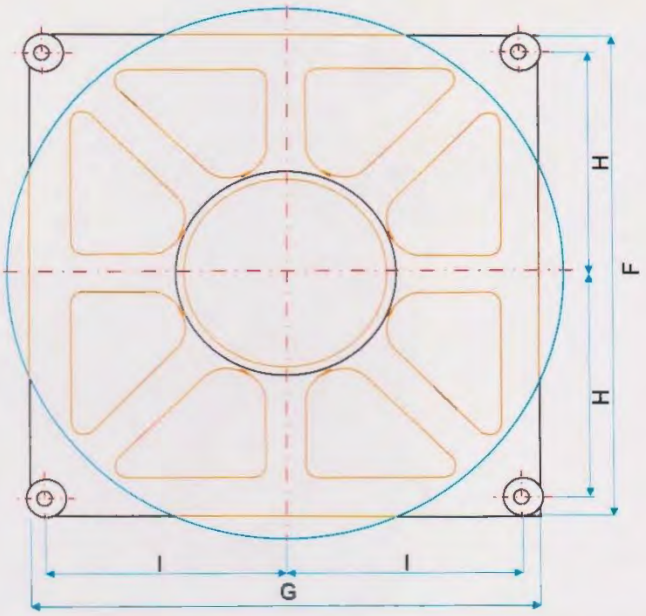


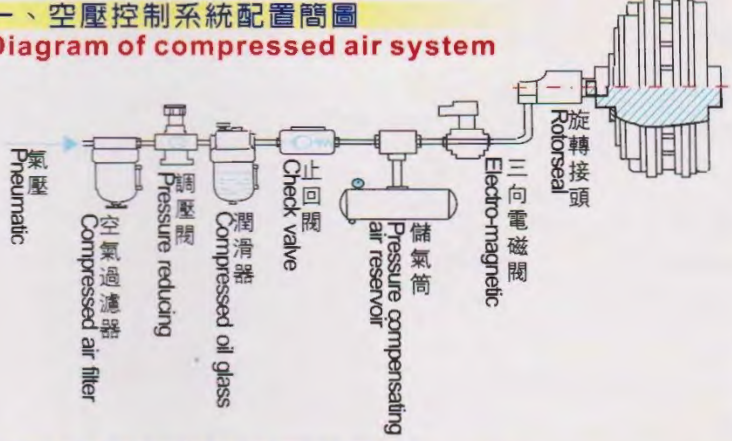
件號	中文名稱	英文名稱	件號	中文名稱	英文名稱	件號	中文名稱	英文名稱
10	輪鼓	Hub	52	來令片	Lining	80	三角固定座	Rotary Adapter
11	齒輪	Gear	53	鉚釘(長)	Rivet L	84	三角固定螺絲	Bolt
20	活塞(標準式)	Piston	54	鉚釘(短)	Rivet S	88	圓接頭	Joint
21	分離式氣封(大)	L Groovrd Ring	37	固定板螺絲(長)	Set Bolt L	87	十字接頭	Socket Joint
22	分離式氣封(小)	S Groovrd Ring	17	固定板螺絲(短)	Set Bolt S	86	平接頭	Joint
23	活塞(彈簧式)	Piston S	61	套管	Stop Pipe	8B	風管(標準式)	Air Tubule S
30	氣缸	Cylinder	62	止板螺絲	Grid Bolt	90	彈簧(標準)大	Spring L
40	磨擦板(二板)鑄	Friction Disc 2	67	套筒螺絲	Bush Bolt	91	彈簧(標準)中	Spring M
41	磨擦板(三板)鐵	Friction Disc 3	68	螺絲	Screw	92	彈簧(標準)小	Spring S
31	墊片	Adjust Washer	82	風管(標準式)	Air Tubule	60	彈簧止板(標準)	Spring Disc
5D	雙面磨擦來令板	Double Lining Disc	70	排氣閥	Relief Valve	63	彈簧止板(彈簧)	Spring Disc S



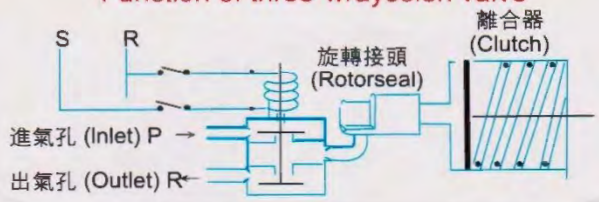


各部規格 \ 噸數		25T~30T	45T	60T	80T	110T	160T	200T	250T
作動氣壓 P=5.5 (atm)	離合轉矩 (KG-M) Clutch Torque	230	460	690	920	1150	1200	1440	1680
	剎車轉矩 (KG-M) Brake Torque	150	350	550	750	860	950	1125	1350
作動氣壓 P=6.0 (atm)	離合轉矩 (KG-M) Clutch Torque	260	520	780	1040	1300	1375	1650	1925
	剎車轉矩 (KG-M) Brake Torque	150	350	550	750	860	950	1125	1350
$GD^2(KGM^2)$		70	80	95	130	250	415	685	980
最高轉速 RPM		950	800	700	650	550	550	500	350
每次氣壓量 Stroke Volume (L)		1.6	1.6	1.6	1.6	1.6	2.45	2.45	2.45
重量 Weight (kg)		300	600	900	1100	1200	1300	1500	1700
適合軸徑 Recommeded Bores (mm)	內徑 (H7) A max	90	105	120	135	145	150	155	170
	鍵槽 Keyway	22x	25x	28x	32x	35x	36x	38x	40x
	內徑 (H7) A max	80	95	115	130	140	145	150	160
	鍵槽 Keyway	22x	24x	25x	28x	32x	35x	36x	38x
	內徑 (H7) A max	70	85	690	920	1150	1200	1440	1680
	鍵槽 Keyway	20x	22x	24x	25x	28x	32x	35x	36x
各部尺寸 Size (mm)	A	88	88	88	88	88	120	120	120
	B	282	293	293	293	293	430	430	450
	C	349	361	361	361	361	520	520	540
	D	505	513	513	513	522	681	681	740
	E	200	400	600	690	760	860	1010	1070
	F	350	450	530	620	690	790	940	1000
	G	350	380	530	620	690	790	870	930
	H	85	160	235	280	315	365	435	465
	I	85	160	235	280	315	365	435	465
配件規格 Size (mm)	皮帶型號、數量 Belt Style & Quantity	3B	3B	3B	3B	3B	4C	4C	5C
	迴轉接頭 Rotary Joints	3/4"	1"	1"	1"	11/4"	11/2"	11/2"	2"

一、空壓控制系統配置簡圖
Diagram of compressed air system

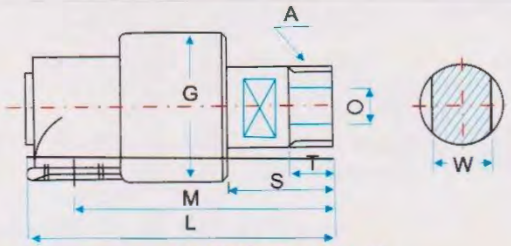


三向電磁閥
Function of three-wraysolen valve



二、配管.閥和旋轉接頭之呎寸
Tubing vale and rotorsal go foot inch

Valve foot inch	1/4	1/2	1/2	3/4	1	1	1	1	1 1/4	1 1/2	1 1/2	2	2
600 Size				62	72		77	80	83	87			
700 Size	29	40	50	61	71	74	76	79	82	85	88	91	92
800 Size		51	59	66	72	75	78	80	84	85		90	



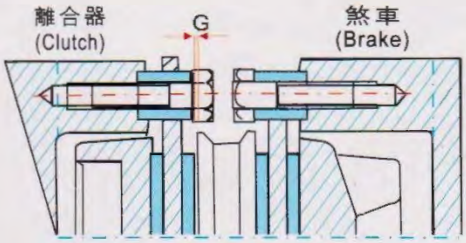
旋轉接頭規格表
Rotorseal specification list

型式 Modwl	A	G	L	M	O	T	W
YS-1/2	1/2	57	113	96	14	16	22
YS-3/4	3/4	63	130	111	18	21	24
YS-1	1	72	137	117	22	21	30
YS-1 1/4	1 1/4	90	177	141	29	25	41
YS-1 1/2	1 1/2	95	186	151	34	35	46
YS-2	2	115	230	178	48	30	60

三、磨擦間隙"G"及氣壓消耗量"V"
Attrition agap "G" reach pressure detrition quantum "V"

Mark	Cauge	Size	62	72	77	80	83	87	90
600 Size	G (mm)	New	1.0	1.1	1.2	1.2	1.4	1.5	1.6
		Used	7.0	9.1	11.2	11.2	13.4	13.5	13.5
	V (e)	New	0.4	0.7	1.2	1.6	2.4	3.0	3.5
		Used	0.6	1.1	1.8	2.4	3.6	4.6	5.0

Mark	Cauge	Size	40	50	61	71	74	76	79	82	85	88	91	92
700 Size	G (mm)	New	0.8	0.9	1	1.1	1.1	1.2	1.2	1.4	1.5	1.5	1.8	1.8
		Used	4.7	4.9	7.0	9.1	9.1	11.2	11.2	13.4	13.5	14.8	16.0	18.1
	V (e)	New	0.1	0.17	0.35	0.65	0.75	0.95	1.35	1.85	2.5	3.75	4.5	6.0
		Used	0.15	0.3	0.6	1.3	1.55	1.9	2.2	3.0	3.75	5.7	7.0	9.5



四、故障原因及排除 Malfunction reason and preclusion

	異常狀況 Unusually condition	原因 Reason	排除方式 Preclusion mode
一	離合動作不正常 Clutch action morbid	氣壓不穩 Mad pressure wonky	穩定氣壓、檢查電磁閥、空壓源、壓力開關 Wonky pitch mad pressure, Check electro-valve, air compressor, and the lum of pressure.
		運轉太快 Move over fast	參照標準範圍速度控制離合器 q.v norm bound speed curb clutch
		磨擦板間隙不當、更換非原廠來令片	來令片需需使用原廠規格及標準安裝
		離合 / 剎車板動作不確實	長 / 短耳板導銷加注潤滑油更換 12 只套筒
二	漏氣 Leak mad	氣封毀損 Mad seal disfigure	更換氣封 changeover mad seal
		氣封鬆脫 Mad seal loose strip	更新固定氣封 A new fixation mad seal
三	剎車板打滑 Brake plug slide	來令片過度磨損 Lining grind spend	更換離合板或來令片
		磨擦面有油脂侵入，來令片被潤滑油污染 Lining dip top cpplant or else liquid	擦拭磨擦面及去除油脂，嚴重者更換來令片 Would collant and else liquid wipe clanly
		空氣壓力不足、供氣系統故障	調整壓力至規定值5Mpa修理或更換電磁閥
		氣缸漏氣失壓	檢查防漏法蘭是否失當或更換氣封組件
四	離合板打滑 Clutch Plug slide	來令片過度磨損 Lining grind spend	更換來令片 Changeover lining
		磨擦面有油脂侵入，來令片被潤滑油污染 Lining dip top cpplant or else liquid	擦拭磨擦面及去除油脂，嚴重者更換來令片 Would collant and else liquid wipe clanly
		排氣不順 / 電磁閥故障	檢查供氣系統修理或更換電磁閥
		剎車用彈簧組受損	分解修理，更換受損件
五	離合 / 剎車板異音	離合 / 剎車板安裝不正局部撞擊，導銷套之間隙不當或安裝不正	更換導銷套筒或更換離合 / 剎車板

公稱噸數 (ton) Nominal tons	衝程 (mm) Stroke	必要轉矩 (kgm) Necessary torque	離合器 / 剎車型式 Clutch / brake type	離合器定格轉矩 (kgm) Clutch Fixed Torque	剎車定格轉矩 (kgm) Brake Fixed Torque
10	40	58.4	700-40	63	35
20	60	175.2	700-61	250	150
30	80	350.4	700-71	500	300
50	100	730	700-76	750	450
75	120	1314	700-82	1500	850
100	130	1898	700-85	2000	1200
100	150	2190	700-85	2000	1200

註
1.壓力角發生位置在下死點前17度
2.作動空氣壓力 6 Kgm/cm^2。
3.本選定表適用於飛輪式沖床。

Notes
1.The occurrence position of the pressure angle is in front of 17 around the dead corner.
2.The operating air pressure 6 kgm/cm^2。
3.This table is available for the fly-wheel punching.

YS 氣壓式離合器 / 剎車選定表（二）
Surge Clutch / Brake Table (2)

公稱噸數 (ton) Nominal tons	衝程 (mm) Stroke	必要轉矩 (kgm) Necessary torque	離合器 / 剎車型式 Clutch / brake type	離合器定格轉矩 (kgm) Clutch Fixed Torque	剎車定格轉矩 (kgm) Brake Fixed Torque
10	40	87.6	700-50	125	70
20	60	262.8	700-61	250	150
30	80	525	700-71	500	300
50	100	1095	700-79	1000	600
75	120	1971	700-85	2000	1200
100	130	2847	700-88	3000	1800
100	150	3285	700-91	4500	2500

註
1.壓力角發生位置在下死點前 26 度
2.作動空氣壓力 6 Kgm/cm^2。
3.本選定表適用於飛輪式沖床。

Notes
1.The occurrence position of the pressure angle is in front of 26 around the dead corner.
2.The operating air pressure 6 kgm/cm^2。
3.This table is available for the fly-wheel punching.

YS 氣壓式離合器 / 剎車選定表（三）
Surge Clutch / Brake Table (3)

公稱噸數 (ton) Nominal tons	衝程 (mm) Stroke	必要轉矩 (kgm) Necessary torque	離合器 / 剎車型式 Clutch / brake type	離合器定格轉矩 (kgm) Clutch Fixed Torque	剎車定格轉矩 (kgm) Brake Fixed Torque
10	50	20	700-23	20	11
15	55	31	700-29	30	18
20	56	44	700-40	63	35
25	70	62	700-40	63	35
30	80	75	700-50	125	70
40	90	150	700-61	250	150
50	100	196	700-61	250	150
60	110	250	700-61	250	150
70	120	307	700-71	500	300
80	120	350	700-71	500	300
100	120	435	700-71	500	300

註
1.10~30 ton 壓力角發生位置在下死點前 3 mm，40~100 ton 在下死點前 6 mm.
2.作動空氣壓力 6 kgm/cm^2。
3.本選定表適用於齒輪式沖床。(標準齒輪比 6:1)

Notes
1.Regarding 10-30 tons, the occurrence position of the pressure angle is in front of 3 mm around the dead corner, and 40-100 tons is in front of 6mm around the dead corner.
2.The operating air pressure is 6kgm/cm^2 。
3.This table is available for the gear punching.(specified gear ratio: 6:1)

NIIKA

NIIKA

原動機轉矩 (T)

$$T=\frac{716 \cdot PS}{n}=\frac{974 \cdot P}{n} \quad \text{Kgm}$$

PS=原動機出力 (馬力)
P=原動機出力 (KW)
n=回轉數 (rpm)

連結負載所需動磨擦轉矩(Td)

$$Td=\frac{Gd^2 \cdot nr}{375\ tae}+T\ell 1 \quad \text{Kgm}$$

Td=加速扭矩 (Kgm)
GD^2=負載慣性作用 (Kgm^2)
tae=實際連結時間 (sec)
nr=連結時負載轉矩 (Kgm)
Tℓ1=連結時之負荷 (Kgm)

負載轉矩

(1)來自切削力和切削速度

$$Tl=974\ \frac{F \cdot V}{6120 \cdot n \cdot \pi}=\frac{F \cdot V}{6.3 \cdot n \cdot \pi} \quad \text{Kgm}$$

Tℓ=負荷 (Kgm)
F=切削力 (Kg)
V=實際連結時間 (sec)
π=機械功率

(2)來自沖床曲軸加壓力

$$T\ell=P \cdot R\ \frac{\sin(\theta+\Phi)}{\cos\phi} \quad \text{Kgm}$$

P=呼稱能力 Kg
R=曲軸半徑 m
n=出力點與下死點距離 m

實際連結時間 (tae・tab)

(1)n1.n2同方向回轉時

$$Tae=\frac{GD^2(n2-n1)}{375\,(Td-T\ell)} \quad \text{Kgm}$$

(2)n1.n2正逆轉時

$$Tae=\frac{GD^2}{375}\left(\frac{n1}{Td-Tl1}+\frac{n2}{Td-T\ell 1}\right) \quad \text{Kgm}$$

(3)剎車制動

$$Tae=\frac{GD^2 \cdot nr}{375\,(Td+T\ell)} \quad \text{Kgm}$$

連結動作量(Ee)

(1)加、減速時

$$Ee=\frac{Gd^2 \cdot nr^2 \cdot Td}{7150\,(Td \pm T\ell 1)} \quad \text{Kgm}$$

Td±Tℓ1: 加速 (—) 減速(+)

(2)正逆轉時(負載轉矩零)

$$Ee=\frac{Gd^2 \cdot (n1+n2^2)}{7150} \quad \text{Kgm}$$

(3)一定時間滑動摩擦的場合

Td±Tℓ1: 加速 (—) 減速(+)

$$Ee=\frac{2\pi \cdot Td \cdot nr}{60}\,t \quad \text{Kgm}$$

t=滑動時間(sec)

發熱量(Q)

(1)連結時

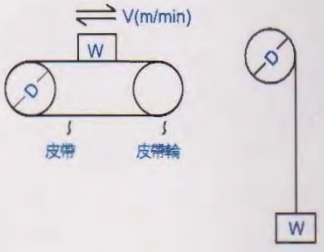
$$Q=\frac{Ee \cdot Nm}{427} \quad \text{Kcal/h}$$

Nm=1小時的連結次數

(2)空轉時

$$Q=0.86\ \frac{Tdg \cdot nr}{0.974} \quad \text{Kcal/h}$$

Tdg=空車轉矩 Kgm



Gd^2的計算公式

$GD^2=4gi$ ..... Kgm^2

G=重力的加速度 ($9.8m/sec^2$)
I=慣性作用 (Kgm/sec^2)

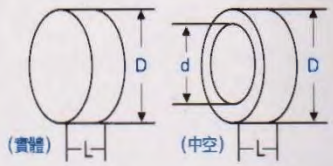
(1)回轉體的GD^2

甲、實體

$$GD^2=\frac{\pi}{8}Y \cdot L \cdot D^4=\frac{1}{2}W \cdot D^2 \quad \text{Kgm}$$

乙、中空

$$GD^2=\frac{\pi}{8}Y \cdot L \cdot (D^4-d^4)=\frac{1}{2}W\,(D^2+d^2) \quad \text{Kgm}$$



D=外徑 (m)
D=內徑 (m)
L=長度 (m)
Y=密度 (Kg/m3)
W=重量 (Kg)

(2)直線運動的GD^2

直線 W(Kg) 物體以速度 V(m/min) 作為直線運動時，假定直線運動能與回轉運動能為相等。

$$\frac{1}{2}1 \cdot W^2=\frac{1}{2}M \cdot V^2 \text{ 因而 } \frac{GD^2}{4g}\left(\frac{2\pi \cdot n}{60}\right)^2=\frac{W}{g}\left(\frac{V}{60}\right)^2$$

$$GD^2=\frac{W \cdot V^2}{\pi^2 \cdot n^2} \quad \text{Kgm}^2$$

皮帶輸送機以及吊車或曳引機等之重量 W 做運動時

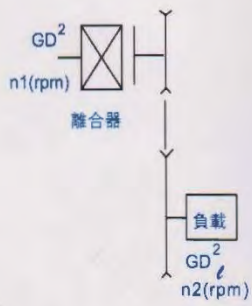
$$GD^2=W \cdot D^2 \quad \text{Kgm}^2$$

(不包括皮帶輪的GD^2)

(3)GD^2的換算

負載GD^2的回轉數和離合器軸回轉數不相等時，要換算為離合器軸。

$$GD^2=GD\ell^2\left(\frac{n2}{n1}^2\right) \quad \text{Kgm}^2$$



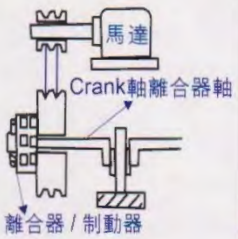
機械設計資料 Mechanic Design Information

- 公稱噸數_____噸或衝擊能力_____kgs/mm2。
  Number of tons　Tons or impact reception ability
- 馬達_____HP_____KW_____RPM。
  Motor
- 離合器/制動器軸_____RPM。
  Clutch / motion control shaft
- 衝程_____MM
  Rushing meter
- 衝程數(曲柄軸或主軸迴轉數)_____RPM。
  Times measured on the rushing meter (The cycling times of the crank shaft or the main shaft.)
- 作動頻度_____次/分。
  Frequency of operation
- 剪斷能力_____kgs/mm2
  Cutting capacity
- 最大衝擊板厚度t_____Mm，寬_____Mm，材質_____。
  The maximum height of the impact board　Breadth　Texture
- 啟動時間_____秒。
  Starting time
- 制動時間_____秒。
  Motion control time
- 剪刀角度_____度_____分，或刀之角度及傾斜度。
  Cutting angle　Degree　Cent　or the angle and slope of the cutter
- 剪斷材料寬度_____mm，厚度_____mm，材質_____。
  The breadth of the cut　height　texture

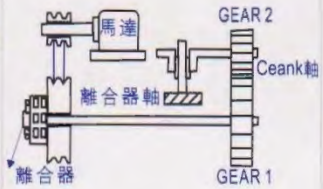
貴公司機械設計型式，請選出下列簡略圖之一(請在圈內打勾)

Pleaes choose one of the diagrams hereunder according to the machine type designed in you company (check one of the blocks)

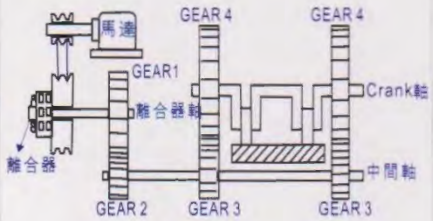
○圖一



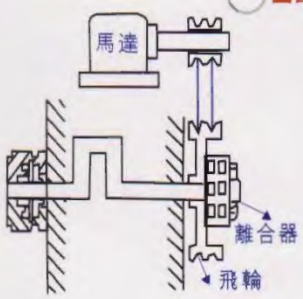
○圖二



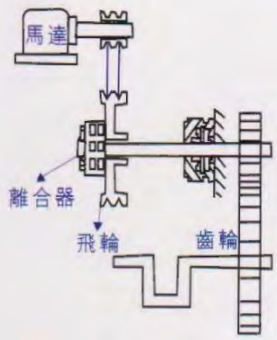
○圖三



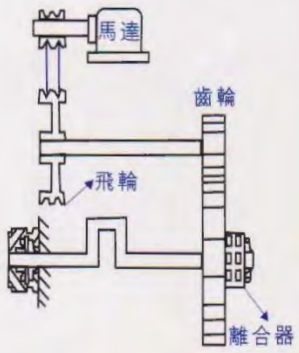
○圖四



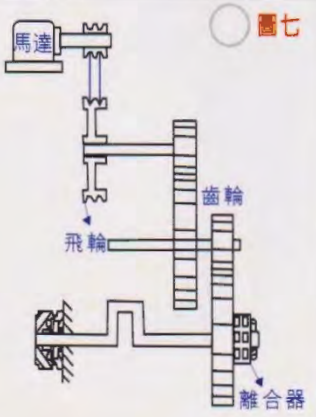
○圖五



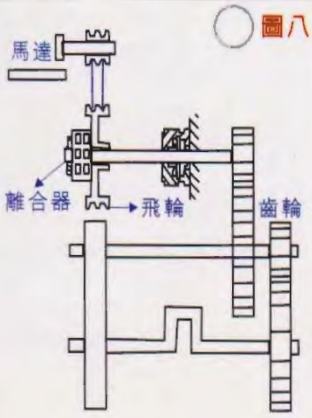
○圖六



○圖七



○圖八



1. Preface:

The clutch & brake unit comes as one of the mechanical components in transmission assembly. The YS-600/YS-700 series we manufactured have combined clutch and brake in a joint body design. They are a type of pneumatically actuated and spring braking component that operates independently, capable of engaging and disengaging between the active side and passive side of machine to generate power transmission easily and safely.

YS-600/YS-700 series of clutch & brake models can be installed in various kinds of machinery for automatic starting, emergency stop, variable speed control, forward/reverse turning, jog movement and other actions precisely. They feature excellence quality being highly reliable and durable, and suitable to work in punching, forging, pressing, shearing and other metal forming machinery.

This operation manual outlines the safety precautions, action theory, structural specifications, dismantling essentials, causes of malfunctions and troubleshooting of YS-600/YS-700 series of products. The operation and maintenance personnel are required to read this manual carefully and can only operate the equipments after getting an adequate acquaintance with it.

2. Application precautions:

[Our company will not responsible for malfunctions and accidents caused by users ignoring these precautions]

⚠ **Danger**	Indicates that if an error occurred during operation, it will cause significant physical injuries or death.
⚠ **Warning**	Indicates that if an error occurred during operation, it will cause physical injuries or death.
⚠ **Attention**	Indicates that if an error occurred during operation, it will cause different levels of injuries, or equipment malfunction or damage.

2.1 These clutch & brake units are only designed to run dry. They are prohibited to smear oil or any lubricant on the friction surface, and not allowed to expose them to high humidity or high oil mist environment for a long period of time to avoid causing the friction surface to skid and reduce the transmission power significantly, and result in abnormal machine operation or mechanical damage.

⚠ **Attention**

2.2 The normal working pressure is 5atm (0.5Mpa), and maximum allowable pressure is 6atm (0.6Mpa). If the working pressure exceeds the maximum allowable pressure, there is a risk of cylinder deformation or rupture. ⚠ **Attention**

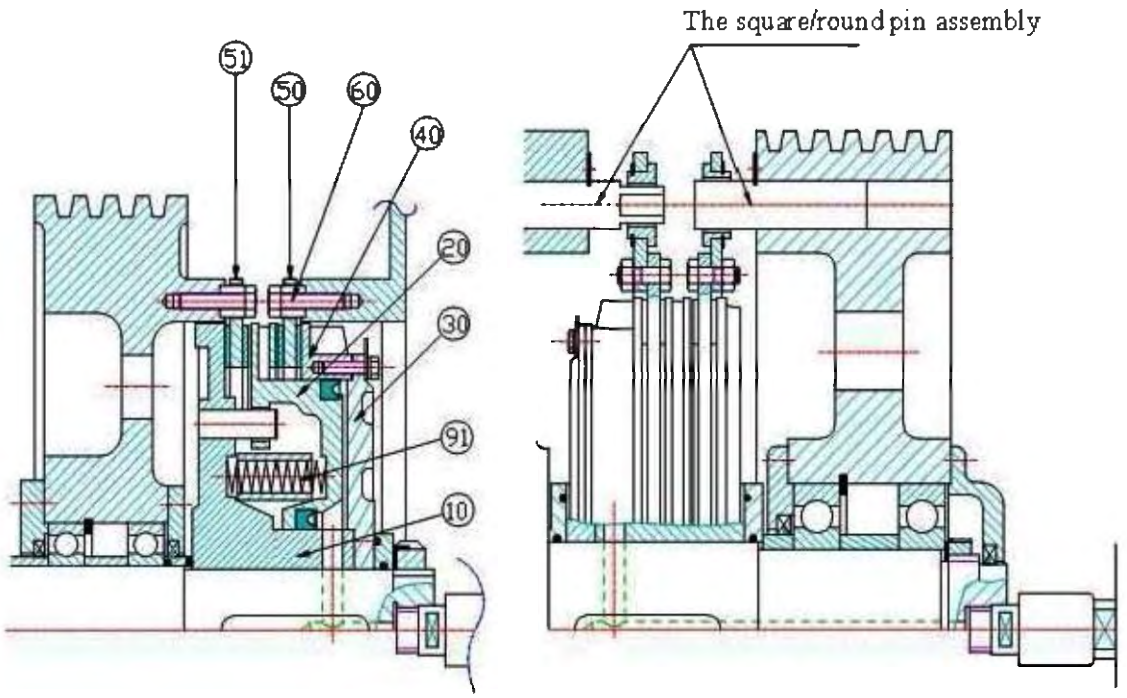
2.3 These clutch & brake units are a kind of pneumatically actuated and spring braking component that operates independently. Please install the gas pipeline system according to the essentials of product specifications. ⚠ **Attention**

2.4 During maintenance, you must cut off the main power supply and ensure that the clutch & brake unit is at stop status. While dissembling, please pay attention that the pressure releases by the brake spring may cause injury. ⚠ **Danger**

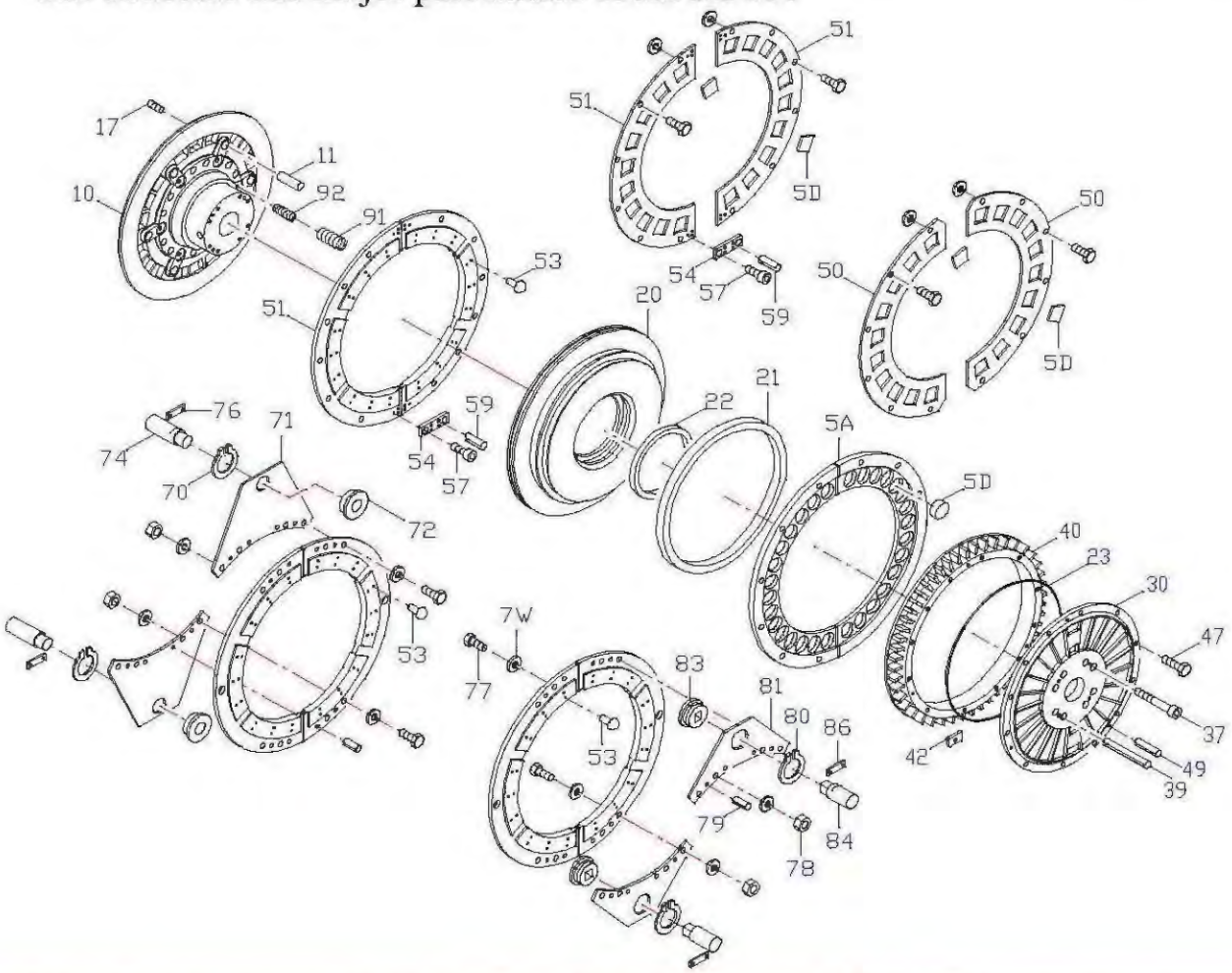
2.5 It is prohibited to use brake pads other than those specified by our company as they would cause insufficient transmission power and abnormal mechanical operation or mechanical damage. Our company will not responsible for malfunctions and accidents caused by users replacing the brake pads by themselves. ⚠ **Attention**

3. Action theory:

The clutch disc (51) is linked to the flywheel end through a 12-bolt assembly (60) or two square/round pins, and the brake disc (50) is linked to the mechanical wall through a 12-bolt assembly (60) or two square/round pins. Before the compressed air enters the cylinder (30), the central piston (20) is pressed against the pressure plate (40) by a set of pre-pressurized compression springs (91) to cause the brake disc (50) to press against the friction pads to stop the transmission shaft. When the compressed air enters the cylinder (30), it will generate a pressure to force the central piston (20) to push the hub (10) to cause the clutch disc (51) to press tightly. The friction torque transmission will cause the flywheel inertia momentum to engage with the clutch and transmission shaft simultaneously. When the compressed air disappears, the springs (91) will reverse start immediately to attain a safety braking requirement.

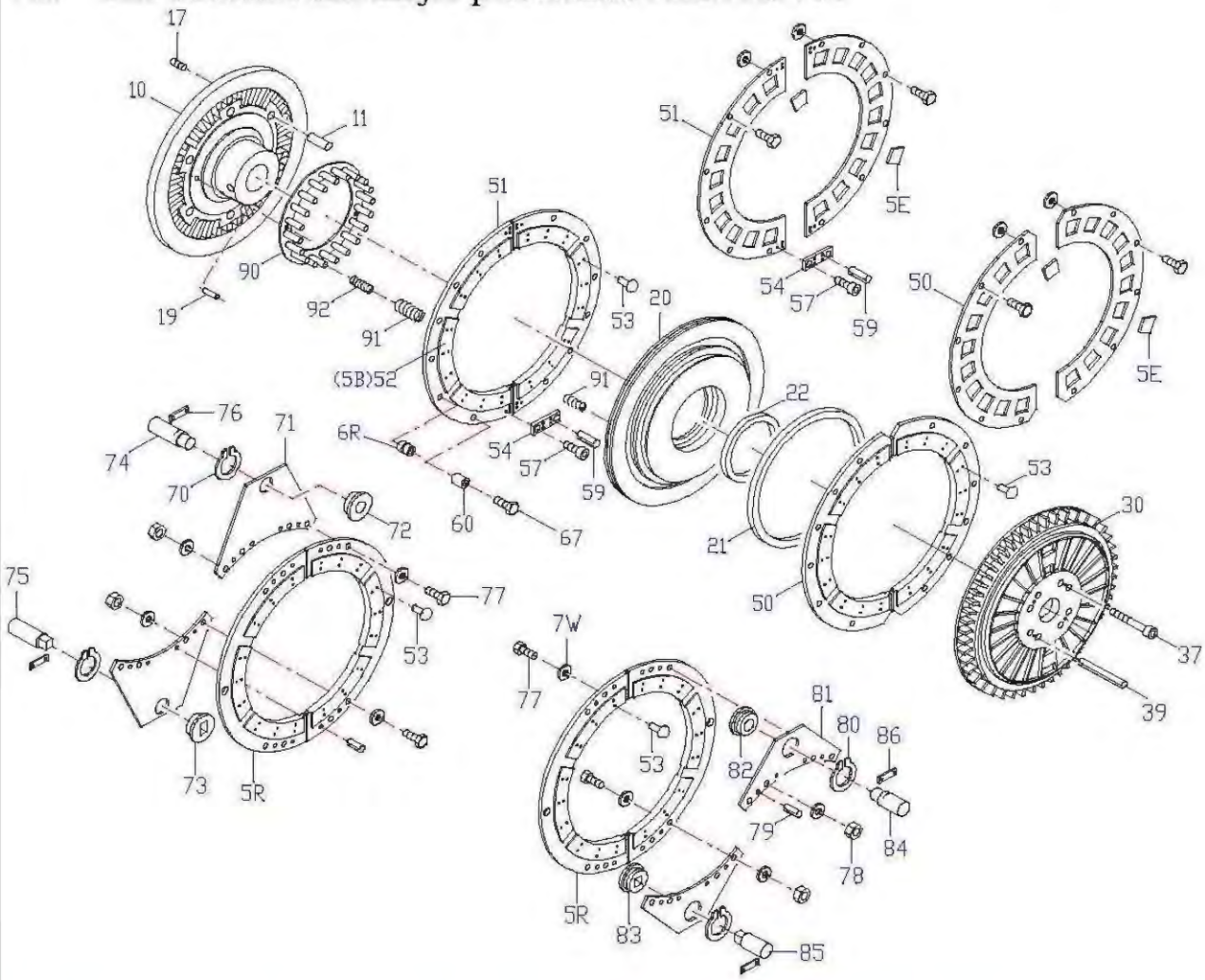


4-1. The structure and major part names of model 600



Part No.	Chinese/English part names of model 600	Part No.	Chinese/English part names of model 600	Part No.	Chinese/English part names of model 600
10	輪 鼓 Hub	54	固定板 Strap	75	長耳方銷 Lugs SL Pin
11	導 銷 Guide Pin	57	固定板螺絲 Socket Head Screw	76	長耳銷固定板 Retaining Plate
17	銷固定螺絲 Grub screw	59	固定板空心銷 Collar	77	耳板螺絲 Hexagon Screw
20	活 塞 Piston	5A	塊狀煞車板 Block Disc	78	螺帽 Nut
21	氣封_大 L Grooved Ring	5B	非石綿來令(扇)Ns Friction Lining	79	耳板定位空心銷 Collar
22	氣封_小 S Grooved Ring	5D	石綿來令(塊) Friction Lining	7W	彈簧華司 Lock Washer
23	O 型環 O ring	5E	非石綿來令(塊) Ns Friction Lining	80	大 C 型扣環 Retaining Ring
30	氣缸 Cylinder	5R	耳煞車板 Lugs Disc	81	短耳板 Lugs S
37	氣缸螺絲 Cylinder Bolt	60	套筒_扇 Brush	82	短耳圓襯套 Bush RS
39	定位銷 Collar	67	套筒螺絲 Bolt	83	短耳方襯套 Bush SS
40	剎車葉板 Pressure Plate	6A	套筒_塊 Brush_B	84	短耳圓銷 Lugs RS Pin
42	隔離板(鐵皮墊片) Disc	6R	O 型套筒 Brush_O	85	短耳方銷 Lugs SS Pin
49	氣缸空心銷 Collar	70	小 C 型扣環 Retaining Ring	86	短耳銷固定板 Retaining Plate
50	剎車板 Braking Disc	71	長耳板 Lugs L	91	彈簧_大 Compression Spring L
51	隔離板 Clutch Disc	72	長耳圓襯套 Bush RL	92	彈簧_小 Compression Spring S
52	石綿來令(扇)Friction Lining	73	長耳方襯套 Bush SL		
53	鉚釘 Rivet	74	長耳圓銷 Lugs RL Pin		

4-2. The structure and major part names of model 700



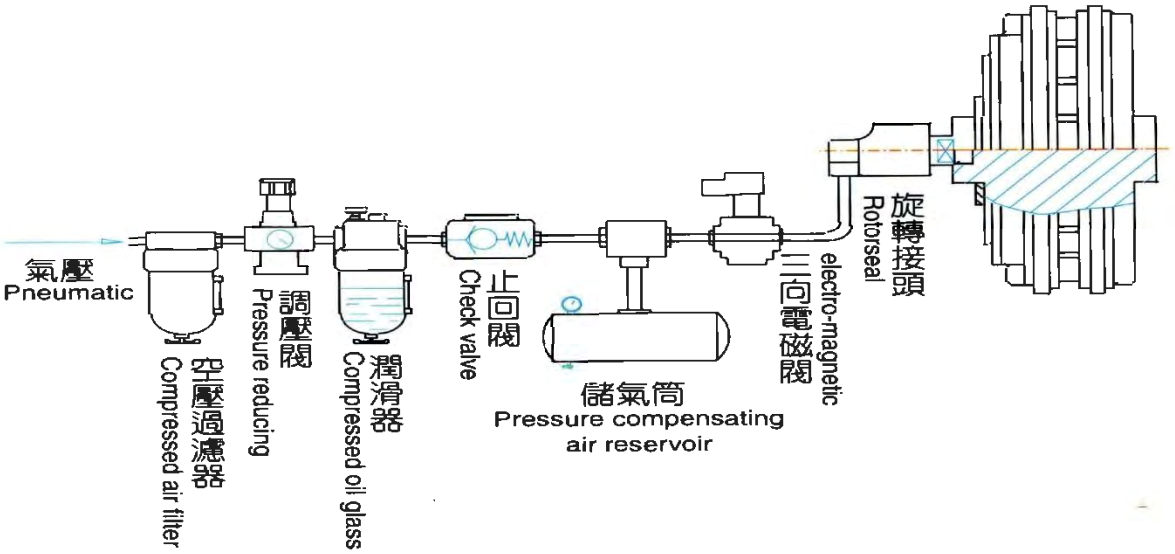
Part No.	Chinese/English part names of model 700	Part No.	Chinese/English part names of model 700	Part No.	Chinese/English part names of model 700
10	輪 鼓 Hub	57	固定板螺絲 Socket Head Screw	77	耳板螺絲 Hexagon Screw
11	導 銷 Guide Pin	59	固定板空心銷 Collar	78	螺帽 Nut
17	銷固定螺絲 Grub screw	5B	非石綿來令(扇)Ns Friction Lining	79	耳板定位空心銷 Collar
19	定位空心銷 Collar	5E	非石綿來令(塊) Ns Friction Lining	7W	彈簧華司 Lock Washer
20	活 塞 Piston	5R	耳煞車板 Lugs Disc	80	大 C 型扣環 Retaining Ring
21	氣封_大 L Grooved Ring	60	套筒_扇 Brush	81	短耳板 Lugs S
22	氣封_小 S Grooved Ring	67	套筒螺絲 Bolt	82	短耳圓襯套 Bush RS
30	新型汽缸 Cylinder	6R	O 型套筒 Brush_O	83	短耳方襯套 Bush SS
37	汽缸螺絲 Bolt	70	小 C 型扣環 Retaining Ring	84	短耳圓銷 Lugs RS Pin
39	定位銷 Collar	71	長耳板 Lugs L	85	短耳方銷 Lugs SS Pin
50	剎車板 Braking Disc	72	長耳圓襯套 Bush RL	86	短耳銷固定板 Retaining Plate
51	隔離板 Clutch Disc	73	長耳方襯套 Bush SL	90	彈簧座 Spring Column
52	石綿來令(扇)Friction Lining	74	長耳圓銷 Lugs RL Pin	91	彈簧_大 Compression Spring L
53	鉚釘 Rivet	75	長耳方銷 Lugs SL Pin	92	彈簧_小 Compression Spring S
54	固定板 Strap	76	長耳銷固定板 Retaining Plate		

5. Installation precautions:

5.1 Precision requirements for installing the main body and flywheel.
(Please refer to attached information ……)

5.2 Installation essentials of clutch & brake unit.
(Please refer to attached information……..)

6. Pneumatic piping configuration control system



6.1 Configuration specifications of piping, electromagnetic valve and rotary seal (inch)

Specification	1/2	1/2	1	1	1	1	1	1-1/4	1-1/2	1-1/2	2	2
YS-600			*62*	*72*		*77*	*80*	*83*	*87*			
YS-700	*40*	*50*	*61*	*71*	*74*	*76*	*79*	*82*	*85*	*88*	*91*	*92*

6.2 Air drum:

A considerable amount of compressed air is needed during clutch engaging process to drive the cylinder, especially in high frequency switching and engaging with large cylinder (larger than #88). So the installation of an auxiliary tank (air drum) in the piping system is a necessity to avoid pressure drop during the engaging process, a slip in clutch disc friction and a sharp drop in transmission power to cause adverse consequences.

✸*For an average supply of 1m³ of air, 3~4 drops of lubricant must be added.* ⚠ **Attention**

6.3 Pressure switch:

The minimum safety pressure setting to start the engage process is generally 4bar.

7. Installation inspection and test run

7.1 Post-installation static inspection

① After supplying (0.5Mpa) of air, turn off and gas and lock up the pressure; and check whether there is any pressure drop in cylinder.

② Operate the electromagnetic value manually to allow it to take in and exhaust air repeatedly several times; and check whether the central piston pin movement is normal.

③After exhausting the air, move the clutch back and forth several times manually to ensure that it is able to slide along the guide pin smoothly. If not, it may be stuck due to thermal effect, causing consistent movement errors and unable to stop, and may even cause accident.

④ Check whether there is any foreign object being caught up in the rotary section to avoid it from spinning out to cause injury. ⚠ **Danger**

7.2 Post-installation dynamic test run

① Check whether there is any abnormal noise in continuous operation.

Reasons: a. Gap discrepancy between guide pin and the corresponding hole or improper installation of guide pin.

b. The friction noise of lining pads caused by clutch/brake disc deformation.

② Check whether there is any abnormal lining pad friction or temperature rise in intermittent operation (the highest temperature difference with room temperature must not exceed 50°C).

Reasons: a. The gap between the guide pin and corresponding hole is too small or there is a tolerance discrepancy in the installation position of guide pin.

Note: The intermittent operation time/minute (SPM) is restricted at:

① #40~#74 maximum SPM is 24 times
② #76~#80 maximum SPM is 20 times
③ #82~#85 maximum SPM is 12 times
④ #88~#92 maximum SPM is 6 times

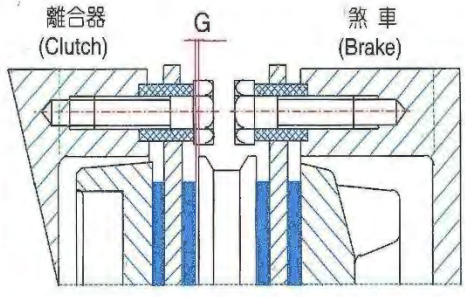
8. Maintenance (implement regularly every three months)

8.1 Check the wear loss of lining pads

Use a plug gauge to check whether the friction gap is normal. Should there be any abnormal skidding, stop and check the machine immediate and replace new lining pads.

Mark	Cauge Size		62	72	77	80	83	87
600 Size	G (mm)	New	1.0	1.1	1.2	1.2	1.4	1.5
		Used	7.0	9.1	11.2	11.2	13.4	13.5
	V (ℓ)	New	0.4	0.7	1.2	1.6	2.4	3.0
		Used	0.6	1.1	1.8	2.4	3.6	4.6

Mark	Cauge Size		40	50	61	71	74	76	79	82	85	88	91	92
700 Size	G (mm)	New	0.8	0.9	1	1.1	1.1	1.2	1.2	1.4	1.5	1.5	1.8	1.8
		Used	4.7	4.9	7.0	9.1	9.1	11.2	11.2	13.4	13.5	14.8	16.0	18.1
	V (ℓ)	New	0.1	0.17	0.35	0.65	0.75	0.95	1.35	1.85	2.5	3.75	4,5	6.0
		Used	0.15	0.3	0.6	1.3	1.55	1.9	2.2	3.0	3.75	5.7	7.0	9.5



8.2 Comprehensive inspection

① Check whether or not the connecting screws have loosened.

② Check whether or not the clutch lining pads are contaminated with grease and eliminate the cause of the leakage.

③ Check whether or not the guide pin sleeve has deformed or worn out.

④ Check whether or not the electromagnetic valve action is normal and the pressure is steady.

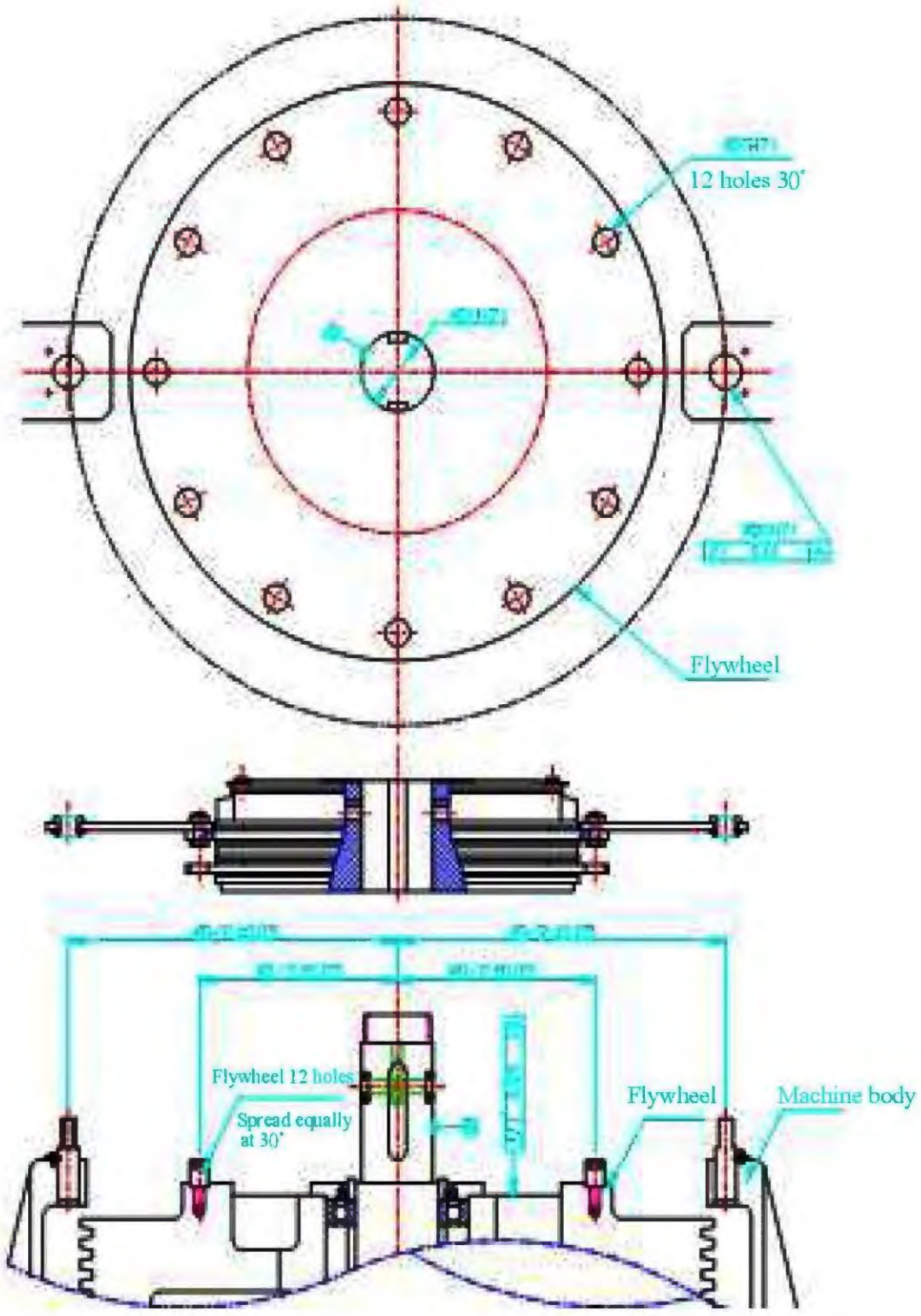
⑤ Check the air supply quality of FRL (filter, regulator and lubricator) unit, discharge water from the cup, lubricate the oil cup, and regulate the pressure.

⑥ Clean the surface contamination of the muffler and ensure that the exhaust is normal.

9. Causes of malfunctions and troubleshooting

Abnormality	Reasons	Dealing methods
Clutch disc skidding	Insufficient torque, wrong model was chosen	Choose the right model Correct the load-carrying side or die material
	Excessive wear of lining pads	Replace the clutch disc or lining pads
	Invasion of oil on friction surface, the lining pads are contaminated with lubricant	Wipe off the oil on friction surface, replace the lining pads if the oil contamination is severe
	Insufficient air pressure, air supply system malfunctioning	Regulate the pressure to required value of 5Mpa, repair or replace the electromagnetic valve
	Cylinder leakage causing pressure drop	Check whether there is a failure in flange seal or replace the air seal component
Brake disc skidding	Insufficient torque, wrong model was chosen	Choose the right model
	Excessive wear of lining pads	Replace the clutch disc or lining pads
	Invasion of oil on friction surface, the lining pads are contaminated with lubricant	Wipe off the oil on friction surface, replace the lining pads if the oil contamination is severe
	Unsmooth exhaust/electromagnetic value malfunctioning	Check the air supply system, repair or replace the electromagnetic valve
	Damaged of braking spring assembly	Disintegrate it, repair or replace the damaged parts (seek help from technical maintenance engineer)
Abnormal noises in clutch/brake disc	Improper installation of clutch/brake disc causing local impact, improper installation and wrong gap interval between the guide pin sleeve, check whether or not the lining pads have loosened	Replace the guide pin sleeve or replace the clutch/brake disc

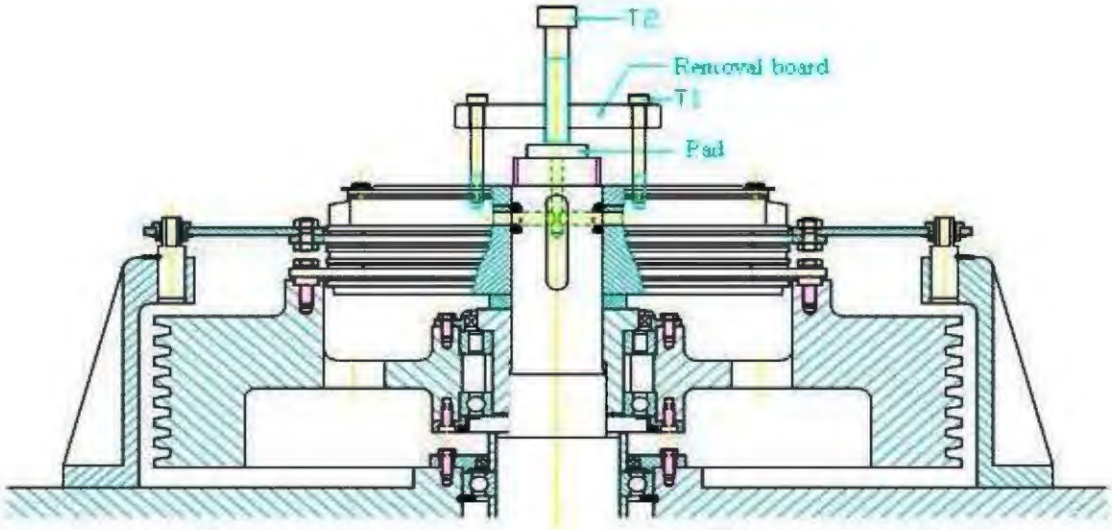
10. Precision requirements for the main unit and flywheel installation holes



12. Dismantling and disintegration essentials of clutch & brake:

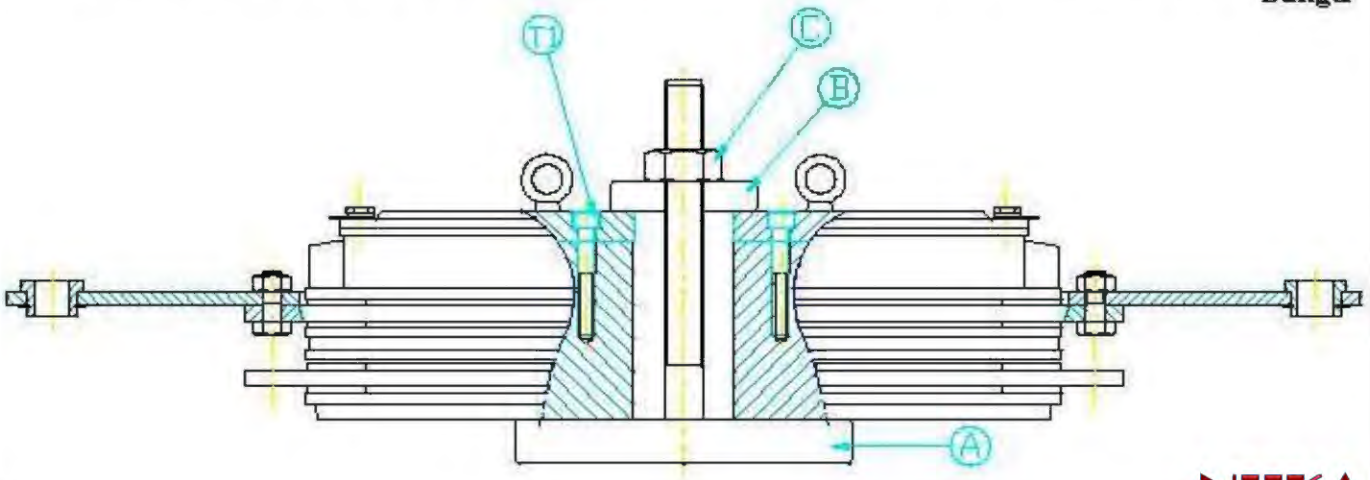
12.1 Dismantling process diagram

① The fixed nut for dismantling the clutch & brake unit.
② Dismantle 2 nuts among T1 (there are originally 8 nuts)
③ Install the removal board as shown in Figure 11.1 using the T1 screw hole positions.
④ Use the crane to lift up the clutch & brake unit gently.
⑤ After placing a pad in the removal board and the central bolt T2, as well as the axis center, turn T2 bolt slowly. ⚠ **Danger**



12.2 Dismantling procedures

① Pass the jig through the central hole to press against the cylinder and main body as shown in Figure 11.2.
② Dismantle T1 (eight pieces) bolts.
③ Loosen C nut slowly (being subjected to spring action, the cylinder/piston/brake disc will pop up accordingly.
④ Dismantle all the parts in sequence following the disintegration chart and arrange them neatly. ⚠ **Danger**



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