

# Series CP Safeguard Pneumatically operated Overload Clutch



## CP Pneumatic Overload Clutches operating features

CP Clutches are zero backlash units which provide remote accurate adjustment of the overload torque by air pressure adjustment. The torque can be constantly adjusted throughout a production cycle providing optimum machine protection.

CP Overload Clutches can be integrated into complex control systems with substantial advantage in automatic machinery with continuous changes of operating conditions. A stop switch is integrated in the torque limiter detecting the axial movement of the unit in event of an overload, providing a signal to cut off the air feed, to disconnect the drive. When overloaded, the CP Clutch has no connection between drive and driven sides providing a long maintenance free service life. After the cause of the overload has been removed the clutch can be automatically re-engaged by resuming the air pressure. Standard finish on the clutches is black phosphate exterior, but can supply in Nickel plated.

## Method of Operation

During normal operations, (fig. 1+2), the PC clutch transmits a backlash-free torque, proportional to the air pressure, from the input hub(1) to the output flange(18), through balls(16), forced by the air pressure on the moving flange(11) into the seats on the parts(1) and (18). A torque arm(5B) is required to avoid the rotation of the stator(5). When overload occurs(fig. 3), the input hub(1) and the output flange(18) disengage, and axial movement of the flange(11) against the air pressure activates the stop switch(14), which gives a signal to cut off the air; input and output of the clutch are then disconnected. CP units can be used as a clutch. The air pressure can be switched on or off, transmitting torque when on and remotely disconnecting the drive when not. CP clutches must be engaged under no load condition at slow speed or when stationary. Disengagement torque is proportional to air pressure, according to the torque/pressure diagram on the label on the clutch outer diameter. Filtered, oiled air kept at a constant pressure during normal operations will ensure the accuracy of the overload torque.

Fig.1

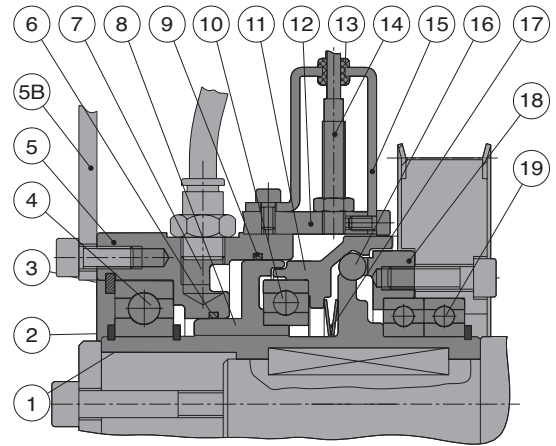
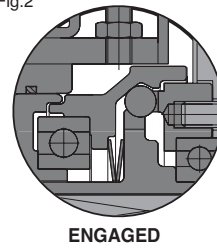


Fig.2



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Fig.3



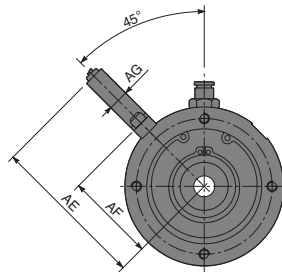
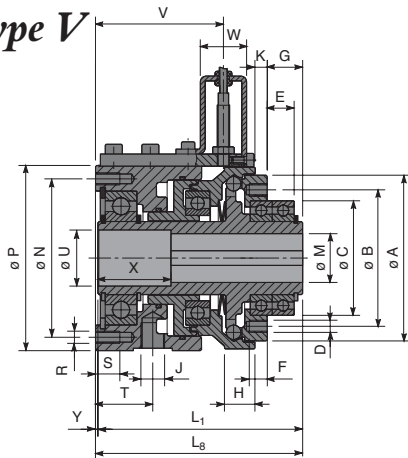
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## Series CP Pneumatic Clutches and Couplings Technical Features

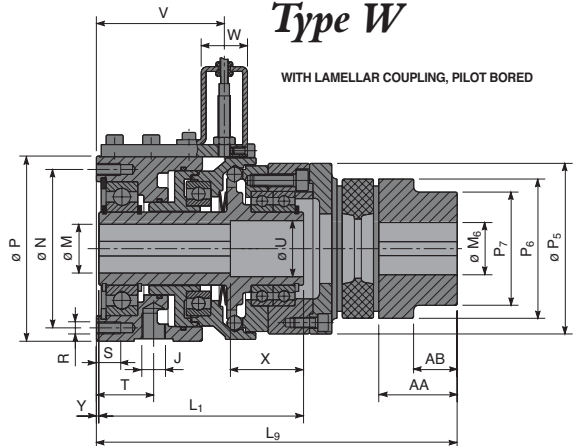
Clutch Size	Clutch Torque		Coupling Torque		Max Speed	Misalignment			Clutch Bore M		Coupling Bore M <sup>6</sup>		Inertias kgcm <sup>2</sup>		
	Min Nm	Max Nm	Nominal Nm	Max Nm		Axial mm	Radial mm	Angular deg	Min mm	Max mm	Min mm	Max mm	Hub Side	Type V Flange	Type W Coupling
V/W 20	3.8	47	35	70	5000	1.4	0.14	1	10	22*	8	28	0.28	0.17	3.07
V/W 25	15	80	95	190	4000	1.5	0.15	1	12	25	10	38	0.56	0.34	7.68
V/W 35	25	180	265	530	2500	2.0	0.19	1	15	35	14	55	2.12	0.90	37.01
V/W 45	50	250	310	620	2000	2.1	0.23	1	20	45	15	60	4.88	2.11	87.68
V/W 50	90	550	310	620	2000	2.1	0.23	1	20	55*	15	60	10.37	5.02	87.97

\*d max with keyway according to DIN6885/3

## Type V



## Type W



Clutch Size	A	B	C	D	E	F	G	H	J	K	L <sup>1</sup>	L <sup>2</sup>	L <sup>3</sup>	N	P	P <sup>5</sup>	P <sup>6</sup>	P <sup>7</sup>	R	S	T	U	V	W	X	Y	AA	AB	AE	AF	AG
20	68	56	47	6xM5	11	7	15	13	1/8"	5	85	85	148	65	76	70	55	-	4xM5	10	24	23	53	19	30	-	30	-	75	45	10
25	82	72	62	6xM5	24	6	28	13	1/8"	4	104	105	169	82	90	85	65	-	4xM4	8	29	26	60	22	40	1.0	35	-	85	51	15
35	102	92	80	6xM5	28	7	34	19	1/8"	4	125	126	194	102	115	115	95	85	4xM5	10	34	36	69	22	50	1.5	41	19	96	63	15
45	123	110	95	6xM6	30	8	36	23	1/8"	5	133	135	219	122	130	135	105	95	4xM5	10	37	46	71	22	55	2.0	53	29	104	71	15
50	151	139	110	6xM8	33	9	40	23	1/4"	6	151	153	247	140	160	157	105	95	4xM6	12	40	51	84	22	60	2.5	53	29	119	86	15