



New Standard Power Transmission

Transferable Sprockets *Weld-on Sprockets*

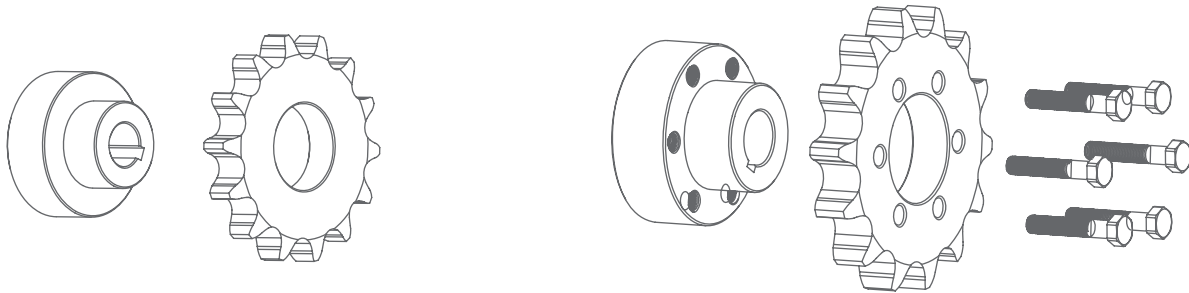


New idea New criterion
New design New creation



Based on years of sprocket production and distribution experience, NSPT designed and invented series of standard sprockets in easy installation style. Various types of standard sprockets can be made by various component combinations, whose utility function is the same with that of traditional ones. Therefore, the stock of standard items, in terms of type and quantity, can be greatly decreased by over 70%; and commercialization for standard sprockets can be maximally realized.

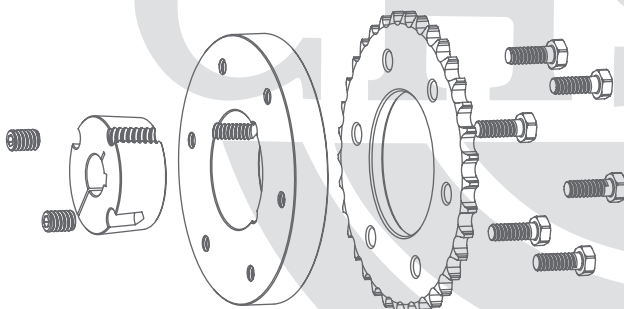
Transferable Sprockets Weld-on Sprockets



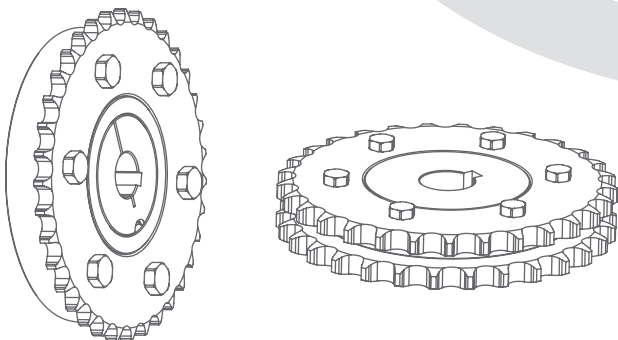
NSPT combinatory sprockets have adopted the newest modularization design and can be assembled by connecting the finished bore plate wheels and relevant hubs. Various types of sprockets such as DS (Double Single Sprockets) and duplex sprockets can be created fast and easily through simple combinations of different teeth numbers and diameters. The

advantages of economical and easy production, high quality and good reliability are widely appreciated. With very limited inventories, the customers' needs can be well fulfilled. It effectively reduces the processing time and costs and gives this new product more competitive advantages.

1. Taper Bore Combinatory Sprockets.



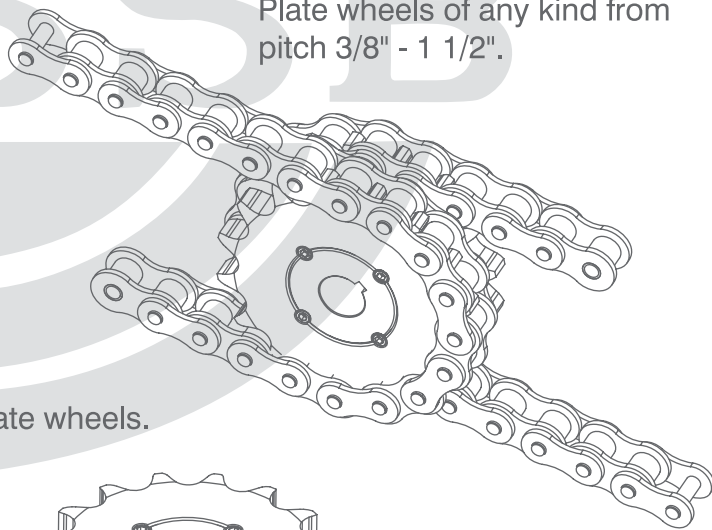
2. Standard Combinatory Sprockets.



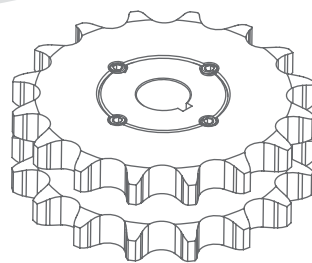
3. Taper Bore SW Hubs fit the whole series of NSPT Bushings well and can also be assembled into Taper Bore Sprockets.

4. CMD Hubs are suitable for Duplex Plate wheels. By combining plate wheels with different pitches, you can get duplex sprockets of all kinds.

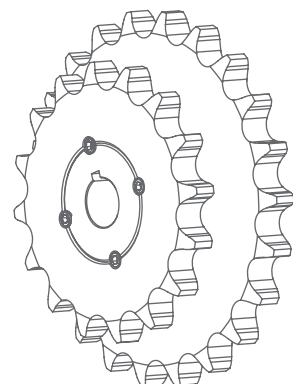
5. CMDS Hubs can be used to form Double - Single (DS) Plate wheels of any kind from pitch 3/8" - 1 1/2".



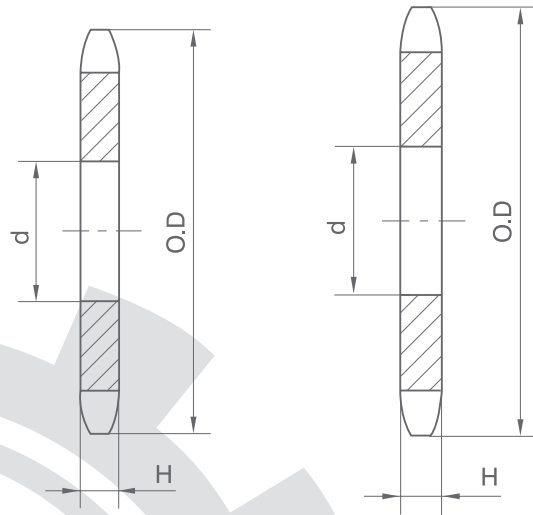
6. DS Plate wheels.



7. CMDS Hubs can be used with two-plate wheels with different numbers of teeth or different pitches to form double functional transmission sprockets in order to increase or reduce speed.

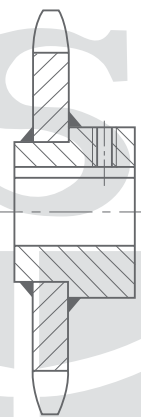


Transferable Sprockets Weld-on Sprockets

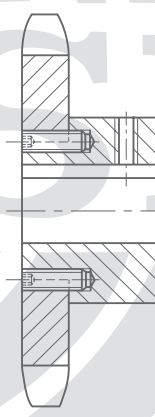


Assembled sprockets and welded-on sprockets are designed for chains 06B-24B. Connecting plate wheels with different types of hubs can get all kinds of sprockets for different usages. For example, FB sprockets or TL sprockets can also be formed if you choose hubs with finished bores or TL bores. No further machining is required. It is easy on and easy off with reliable quality and very good interchangeability.

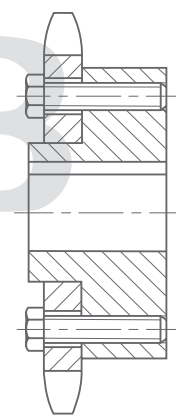
These sprockets designed by NSPT now have complete series with good applicability. They meet various design requirements for mechanical transmissions.



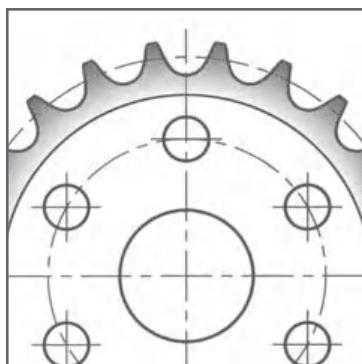
Connection by welding



Connection with bolts.

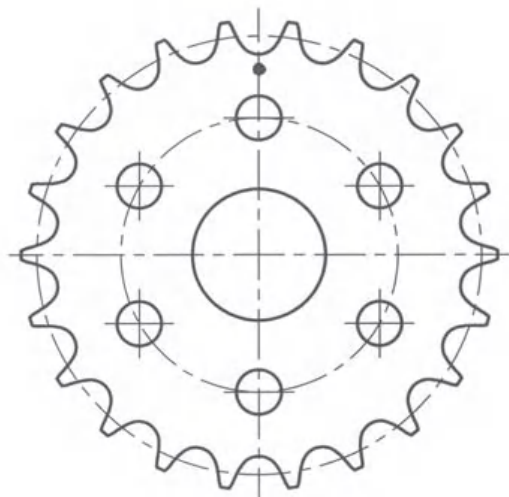


Connection by bolts fixed on the flange.



Sprockets within 40 teeth (O.D. within 12") are made of qualified steel S45C with teeth hardened to HRC 40-50.

Each sprocket has position marks that can be used for aligning the corresponding hole with the keyway. For duplex sprockets, make the teeth of each row aligned. By doing this, the installation errors can be eliminated.





New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANSI B29.MI-1993

35

3/8"X7/32"

PITCH-3/8"

H=0.168"

Z	O.D	P.D	d	B	M x n	Hub Style				
						Bush	CM/D,DS	CW	SN	SW
20	2.59	2.397	1.575				CM40			
21	2.71	2.516	1.575				CM40			
22	2.83	2.635	1.575			C1008	CM40	CW1008		
23	2.95	2.745	1.575			C1008	CM40	CW1008		
24	3.07	2.912	1.967			C1008	CM50	CW1008		
25	3.19	2.992	1.967			C1008	CM50	CW1008		
26	3.31	3.111	2.362			C1210	CM60	CW1210		
27	3.43	3.230	2.362			C1210	CM60	CW1210		
28	3.55	3.349	2.756			C1610	CM70	CW1610		
29	3.67	3.468	2.756			C1610	CM70	CW1610		
30	3.79	3.587	2.756			C1610	CM70	CW1610		
31	3.91	3.707	2.756			C1610	CM70	CW1610		
32	4.03	3.826	2.756			C1610	CM70	CW1610		
33	4.15	3.945	2.756			C1610	CM70	CW1610		
34	4.27	4.046	2.756			C1610	CM70	CW1610		
35	4.39	4.183	2.756			C1610	CM70	CW1610		
36	4.51	4.303	2.756			C1610	CM70	CW1610		
37	4.63	4.422	2.756			C1610	CM70	CW1610		
38	4.75	4.541	2.756			C1610	CM70	CW1610		
39	4.87	4.660	2.756			C1610	CM70	CW1610		
40	4.99	4.780	2.756			C1610	CM70	CW1610		
41	5.11	4.899	2.756			C1610	CM70	CW1610		
42	5.23	5.018	2.756			C1610	CM70	CW1610		
43	5.36	5.137	2.756			C1610	CM70	CW1610		
44	5.47	5.257	2.756			C1610	CM70	CW1610		
45	5.59	5.376	2.756			C1610	CM70	CW1610		
46	5.71	5.495	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
47	5.83	5.615	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
48	5.95	5.734	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
49	6.07	5.853	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
50	6.19	5.972	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
51	6.31	6.091	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
52	6.43	6.211	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
53	6.55	6.330	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
54	6.66	6.450	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
55	6.78	6.569	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
56	6.90	6.688	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
57	7.02	6.807	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
58	7.14	6.926	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
59	7.26	7.046	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
60	7.38	7.165	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
70	8.58	8.398	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
72	8.81	8.595	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
80	9.77	9.552	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
84	10.25	10.023	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
96	11.68	11.222	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610
112	13.59	13.370	2.756	4	3/8X4	C1610	CM70	CW1610	SN70	SW1610



New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANSI B29. MI-1993

40

1/2"X5/16"

PITCH-1/2"

H=0.227"

Z	O.D	PD	d	B	Mxn	Hub Style				
						Bush	CM/D,DS	CW	SN	SW
15	2.65	2.405	1.575				CM40			
16	2.81	2.563	1.575				CM40			
17	2.98	2.721	1.575				CM40			
18	3.14	2.880	1.967			C1008	CM50	CW1008		
19	3.30	3.038	1.967			C1008	CM50	CW1008		
20	3.46	3.185	2.362			C1210	CM60	CW1210		
21	3.62	3.343	2.362			C1210	CM60	CW1210		
22	3.78	3.513	2.756			C1610	CM70	CW1610		
23	3.94	3.672	2.756			C1610	CM70	CW1610		
24	4.10	3.830	2.756			C1610	CM70	CW1610		
25	4.26	3.989	2.756			C1610	CM70	CW1610		
26	4.42	4.148	2.756			C1610	CM70	CW1610		
27	4.58	4.307	2.756			C1610	CM70	CW1610		
28	4.74	4.465	2.756			C1610	CM70	CW1610		
29	4.90	4.625	2.756			C1610	CM70	CW1610		
30	5.06	4.783	2.756			C1610	CM70	CW1610		
31	5.22	4.943	2.756			C1610	CM70	CW1610		
32	5.38	5.101	2.756			C1610	CM70	CW1610		
33	5.54	5.260	2.756			C1610	CM70	CW1610		
34	5.70	5.419	2.756			C1610	CM70	CW1610		
35	5.86	5.578	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
36	6.02	5.737	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
37	6.18	5.896	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
38	6.33	6.055	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
39	6.49	6.214	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
40	6.65	6.373	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
41	6.81	6.532	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
42	6.97	6.691	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
43	7.13	6.850	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
44	7.29	7.009	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
45	7.45	7.168	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
46	7.61	7.327	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
47	7.77	7.486	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
48	7.93	7.654	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
49	8.09	7.804	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
50	8.25	7.963	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
51	8.41	8.122	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
52	8.57	8.281	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
53	8.73	8.440	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
54	8.89	8.600	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
55	9.04	8.758	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
56	9.20	8.917	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
57	9.36	9.076	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
58	9.52	9.235	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
59	9.68	9.394	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
60	9.84	9.554	2.756	4'	3/8X4	C1610	CM70	CW1610	SN70	SW1610
70	11.43	11.144	39/16	43/4	7/16X4	C2012	CM90	CW2012	SN90	SW2012
72	11.75	11.463	39/16	43/4	7/16X4	C2012	CM90	CW2012	SN90	SW2012
80	13.03	12.735	39/16	43/4	7/16X4	C2012	CM90	CW2012	SN90	SW2012
84	13.66	13.372	39/16	43/4	7/16X4	C2012	CM90	CW2012	SN90	SW2012
96	15.57	15.281	39/16	43/4	7/16X4	C2012	CM90	CW2012	SN90	SW2012
112	18.12	17.796	45/16	53/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517



New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANSI B29.MI-1993

50

5/8"X3/8"

PITCH-5/8"

H=0.343"

Z	O.D	PD	d	B	Mxn	Hub Style				
						Bush	CM/D,DS	CW	SN/D	SW
13	2.91	2.611	1.575				CM40			
14	3.11	2.809	1.575				CM40			
15	3.32	3.006	1.967			C1008	CM50	CW1008		
16	3.52	3.204	1.967			C1008	CM50	CW1008		
17	3.72	3.401	2.362			C1210	CM60	CW1210		
18	3.92	3.599	2.362			C1210	CM60	CW1210		
19	4.12	3.797	2.756			C1610	CM70	CW1610		
20	4.32	3.996	2.756			C1610	CM70	CW1610		
21	4.52	4.194	2.756			C1610	CM70	CW1610		
22	4.72	4.392	2.756			C1610	CM70	CW1610		
23	4.92	4.590	3.543			C2012	CM90	CW2012		
24	5.12	4.788	3.543			C2012	CM90	CW2012		
25	5.32	4.947	3.543			C2012	CM90	CW2012		
26	5.52	5.185	3.543			C2012	CM90	CW2012		
27	5.72	5.384	3.543			C2012	CM90	CW2012		
28	5.92	5.581	3.543			C2012	CM90	CW2012		
29	6.12	5.781	3.543			C2012	CM90	CW2012		
30	6.32	5.979	3.543			C2012	CM90	CW2012		
31	6.52	6.178	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
32	6.72	6.376	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
33	6.92	6.575	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
34	7.12	6.774	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
35	7.32	6.972	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
36	7.52	7.171	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
37	7.72	7.370	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
38	7.92	7.569	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
39	8.12	7.767	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
40	8.32	7.966	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
41	8.52	8.165	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
42	8.72	8.364	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
43	8.91	8.563	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
44	9.11	8.761	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
45	9.31	8.960	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
46	9.51	9.159	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
47	9.71	9.357	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
48	9.91	9.556	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
49	10.11	9.755	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
50	10.31	9.954	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
51	10.51	10.152	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
52	10.71	10.352	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
53	10.91	10.550	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
54	11.11	10.749	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
55	11.31	10.948	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
56	11.50	11.147	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
57	11.70	11.346	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
58	11.90	11.544	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
59	12.10	11.743	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
60	12.30	11.942	3.543	43/4	7/16X6	C2012	CM90	CW2012	SN90	SW2012
70	14.29	13.931	4.331	43/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517
72	14.69	14.329	4.331	53/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517
80	16.28	15.919	4.331	53/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517
84	17.08	16.716	4.331	53/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517
96	19.47	19.102	4.331	53/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517
112	22.65	22.285	4.331	53/4	7/16X6	C2517	CM110	CW2517	SN110	SW2517



New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANSI B29.MI-1993

60
3/4"X1/2"

PITCH-3/4"

H=0.459"

Z	O.D	P.D	d	B	Mxn	Hub Style				
						Bush	CM/D,DS	CW	SN/D	SW
11	3.00	2.662	1.575				CM40			
12	3.25	2.894	1.575				CM40			
13	3.49	3.133	1.967			C1008	CM50	CW1008		
14	3.74	3.370	2.362			C1210	CM60	CW1210		
15	3.98	3.607	2.756			C1610	CM70	CW1610		
16	4.22	3.844	2.756			C1610	CM70	CW1610		
17	4.46	4.081	2.756			C1610	CM70	CW1610		
18	4.70	4.319	2.756			C1610	CM70	CW1610		
19	4.95	4.557	2.756			C1610	CM70	CW1610		
20	5.19	4.794	3.543			C2012	CM90	CW2012		
21	5.43	5.032	3.543			C2012	CM90	CW2012		
22	5.67	5.270	3.543			C2012	CM90	CW2012		
23	5.91	5.508	3.543			C2012	CM90	CW2012		
24	6.15	5.246	3.543			C2012	CM90	CW2012		
25	6.39	5.984	3.543			C2012	CM90	CW2012		
26	6.63	6.222	3.543			C2012	CM90	CW2012		
27	6.87	6.460	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
28	7.11	6.698	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
29	7.35	6.937	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
30	7.59	7.175	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
31	7.83	7.414	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
32	8.07	7.652	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
33	8.30	7.890	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
34	8.54	8.128	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
35	8.78	8.367	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
36	9.02	8.606	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
37	9.26	8.844	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
38	9.50	9.082	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
39	9.74	9.321	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
40	9.98	9.559	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
41	10.22	9.789	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
42	10.46	10.037	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
43	10.70	10.275	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
44	10.94	10.513	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
45	11.18	10.752	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
46	11.42	10.991	3.543	43/4	7/16x6	2012	CM90	CW2012	SN90	SW2012
47	11.65	11.229	3.543	43/4	7/16x6	2012	CM90	CW2012	SN90	SW2012
48	11.89	11.467	3.543	43/4	7/16x6	C2012	CM90	CW2012	SN90	SW2012
49	12.13	11.706	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
50	12.37	11.944	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
51	12.61	12.183	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
52	12.85	12.421	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
53	13.09	12.660	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
54	13.33	12.899	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
55	13.57	13.138	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
56	13.81	13.376	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
57	14.04	13.615	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
58	14.28	13.853	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
59	14.52	14.092	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
60	14.76	14.330	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
70	17.15	16.717	4.331	53/4	7/16x6	C2517	CM110	CW2517	SN110	SW2517
72	17.63	17.194	4.331	53/4	7/16x8	C2517	CM110	CW2517	SN110	SW2517
80	19.54	19.103	4.331	53/4	7/16x8	C2517	CM110	CW2517	SN110	SW2517
84	20.94	20.295	4.331	53/4	7/16x8	C2517	CM110	CW2517	SN110	SW2517



New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANSI B29.MI-1993

80
1"X5/8"

PITCH-1"

H=0.575"

Z	O.D	P.D	d	B	Mxn	Hub Style				
						Bush	CM/D,DS	CW	SN/D	SW
11	4.01	3.549	2.362			C1215	CM60	CW1215		
12	4.33	3.864	2.756			C1615	CM70	CW1615		
13	4.66	4.178	2.756			C1615	CM70	CW1615		
14	4.98	4.494	2.756			C1615	CM70	CW1615		
15	5.30	4.810	2.756			C1615	CM70	CW1615		
16	5.63	5.126	3.543			C2012	CM90	CW2012		
17	5.95	5.442	3.543			C2012	CM90	CW2012		
18	6.27	5.759	3.543			C2012	CM90	CW2012		
19	6.59	6.076	3.543			C2012	CM90	CW2012		
20	6.91	6.393	4.331			C2517	CM110	CS2517		
21	7.24	6.710	4.331			C2517	CM110	CW2517		
22	7.56	7.027	4.331			C2517	CM110	CW2517		
23	7.88	7.344	4.331			C2517	CM110	CW2517		
24	8.20	7.661	4.331			C2517	CM110	CW2517		
25	8.52	7.979	4.331			C2517	CM110	CW2517		
26	8.84	8.296	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
27	9.16	8.594	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
28	9.48	8.931	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
29	9.80	9.249	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
30	10.11	9.567	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
31	10.43	9.885	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
32	10.75	10.202	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
33	11.07	10.520	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
34	11.39	10.838	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
35	11.71	11.156	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
36	12.03	11.474	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
37	12.35	11.792	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
38	12.67	12.110	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
39	12.99	12.428	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
40	13.31	12.745	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
41	13.63	13.064	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
42	13.94	13.382	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
43	14.26	13.700	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
44	14.58	14.018	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
45	14.90	14.335	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
46	15.22	14.654	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
47	15.54	14.972	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
48	15.86	15.290	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
49	16.18	15.608	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
50	16.50	15.926	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
51	16.81	16.244	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
52	17.13	16.562	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
53	17.45	16.880	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
54	17.77	17.200	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
55	18.09	17.517	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
56	18.41	17.835	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
57	18.73	18.152	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
58	19.04	18.471	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
59	19.36	18.789	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
60	19.68	19.108	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
70	22.87	22.289	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
72	23.50	22.906	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
80	26.05	25.471	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020



New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANSI B29.MI-1993

100

1 1/4"X3/4"

PITCH-1 1/4"

H=0.692"

Z	O.D	P.D	d	B	Mxn	Hub Style				
						Bush	CM/D,DS	CW	SN/D	SW
10	4.60	4.045	2.756				CM70			
11	5.01	4.436	2.756			C1615	CM70	CW1615		
12	5.42	4.830	2.756			C1615	CM70	CW1615		
13	5.82	5.222	3.543			C2012	CM90	CW2012		
14	6.23	5.617	3.543			C2012	CM90	CW2012		
15	6.63	6.013	4.331			C2517	CM110	CW2517		
16	7.03	6.407	4.331			C2517	CM110	CW2517		
17	7.44	6.791	4.331			C2517	CM110	CW2517		
18	7.84	7.199	4.331			C2517	CM110	CW2517		
19	8.24	7.595	4.331			C2517	CM110	CW2517		
20	8.64	7.991	4.331			C2517	CM110	CW2517		
21	9.04	8.387	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
22	9.44	8.784	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
23	9.84	9.180	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
24	10.25	9.576	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
25	10.65	9.974	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
26	11.05	10.370	4.331	5/8	7/16X6	C2517	CM110	CW2517	SN110	SW2517
27	11.44	10.767	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
28	11.84	11.164	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
29	12.24	11.561	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
30	12.64	11.959	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
31	13.04	12.356	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
32	13.44	12.752	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
33	13.84	13.150	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
34	14.24	13.547	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
35	14.64	13.945	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
36	15.04	14.343	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
37	15.44	14.740	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
38	15.84	15.137	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
39	16.23	15.535	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
40	16.63	15.931	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
41	17.03	16.330	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
42	17.43	16.728	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
43	17.83	17.125	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
44	18.23	17.522	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
45	18.63	17.920	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
46	19.02	18.317	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
47	19.42	18.715	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
48	19.82	19.113	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
49	20.22	19.510	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
50	20.62	19.907	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
51	21.02	20.305	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
52	21.42	20.702	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
53	21.81	21.100	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
54	22.21	21.499	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
55	22.61	21.897	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
56	23.01	22.294	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
57	23.41	22.691	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
58	23.81	23.089	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
59	24.20	23.486	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
60	24.60	23.884	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020



New Standard Power Transmission

Transferable Sprockets Weld-on Sprockets

FOR ROLLER CHAINS ANIS B29.MI-1993

120
1 1/2"X1"

PITCH-1 1/2"

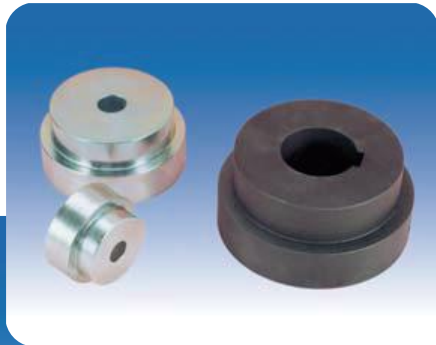
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Z	O.D	P.D	d	B	Mxn	Hub Style				
						Bush	CM/D,DS	CW	SN/D	SW
12	6.50	5.796	3.543			C2012	CM90	CW2012		
13	6.99	5.267	3.543			C2012	CM90	CW2012		
14	7.47	6.741	4.331			C2517	CM110	CW2517		
15	7.96	7.215	4.331			C2517	CM110	CW2517		
16	8.44	7.689	5.118			C3020	CM130	CW3020		
17	8.92	8.163	5.118			C3020	CM130	CW3020		
18	9.41	8.639	5.118			C3020	CM130	CW2020		
19	9.89	9.114	5.118			C3020	CM130	CW3020		
20	10.37	9.589	5.118			C3020	CM130	CW3020		
21	10.85	10.065	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
22	11.33	10.541	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
23	11.81	11.016	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
24	12.29	11.491	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
25	12.77	11.969	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
26	13.25	12.444	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
27	13.73	12.921	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
28	14.21	13.396	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
29	14.69	13.873	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
30	15.17	14.350	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
31	15.65	14.828	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
32	16.13	15.303	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
33	16.61	15.780	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
34	17.09	16.257	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
35	17.57	16.734	5.118	7/8	9/16X6	C3020	CM130	CW3020	SN130	SW3020
36	18.05	17.211	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
37	18.53	17.688	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
38	19.01	18.165	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
39	19.50	18.642	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
40	19.96	19.119	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
41	20.44	19.604	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
42	20.92	20.073	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
43	21.40	20.550	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
44	21.89	21.027	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
45	22.35	21.504	5.118	7/8	9/16X6	C3030	CM130	CW3030	SN130	SW3030
46	22.83	21.981	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
47	23.31	22.458	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
48	23.79	22.935	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
49	24.27	23.412	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
50	24.76	23.889	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
51	25.23	24.366	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
52	25.71	24.843	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
53	26.19	25.320	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
54	26.65	25.797	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
55	27.13	26.276	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
56	27.61	26.752	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
57	28.09	27.230	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
58	28.57	27.706	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
59	29.05	28.183	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
60	29.52	28.660	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
70	34.30	33.433	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
72	35.26	34.389	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535
80	39.08	38.206	6.102	87/16	11/16X6	C3535	CM155	CW3535	SN155	SW3535

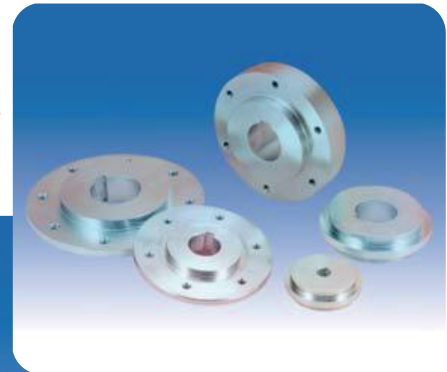
Transferable Sprockets Weld-on Sprockets

NEW

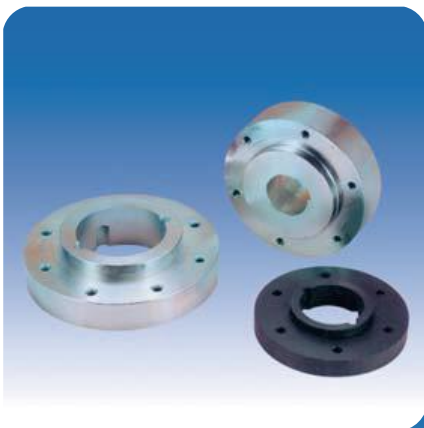
"C" Series Combination Sprockets and Hubs



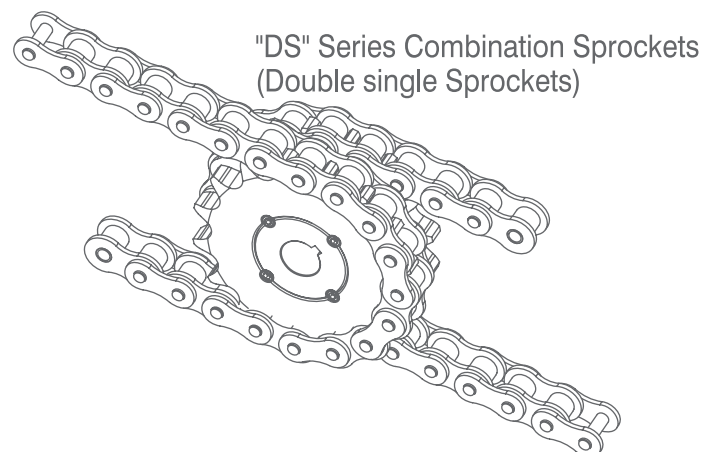
"DS" Series Combination Sprockets and Hubs



"S" Series Combination Sprockets and Hubs



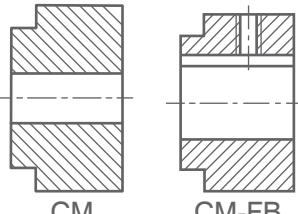
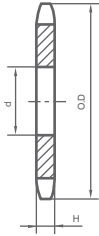


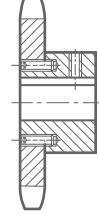
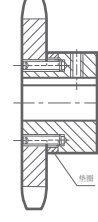
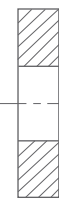
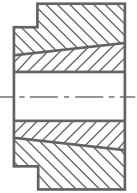






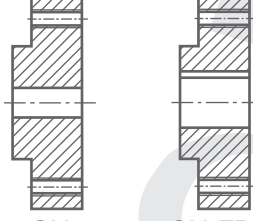
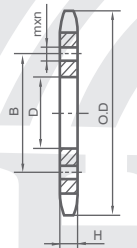



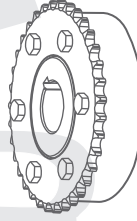
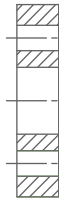
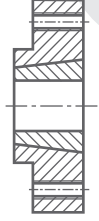
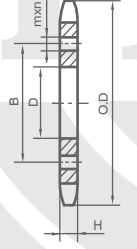



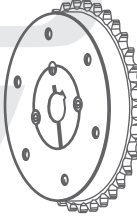

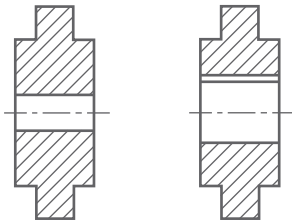
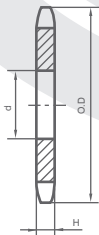

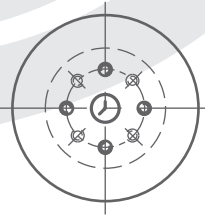
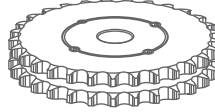
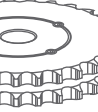
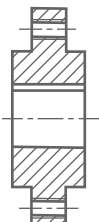
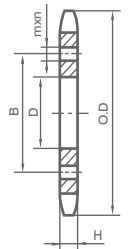

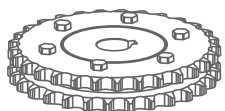


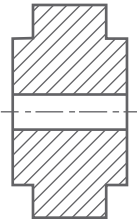
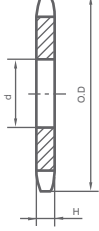


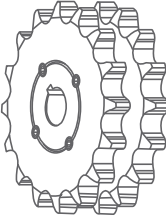
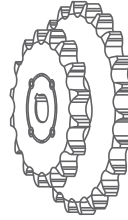
"D" Series Combination Sprockets (Duplex Sprockets)



"DS" Series Combination Sprockets (Double single Sprockets)

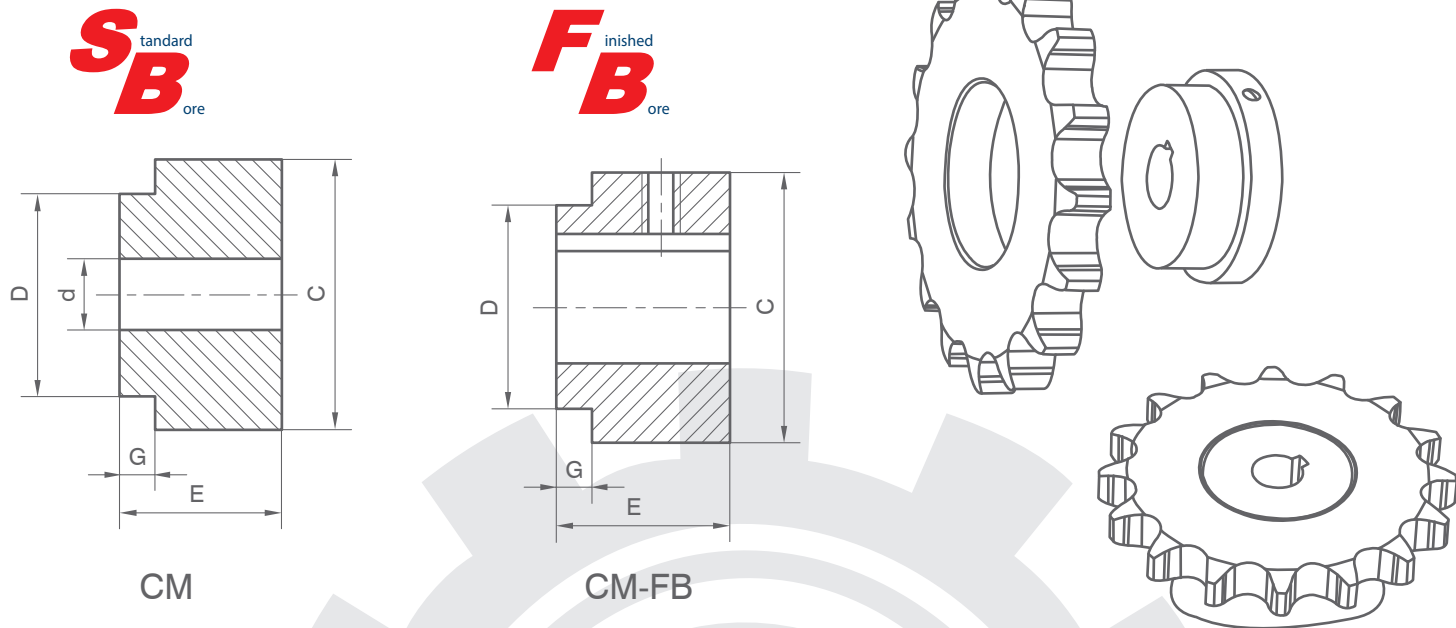
Transferable Sprockets

Installation Diagram for Combinatory Sprockets

Hubs	Platwheels	Combinatory Sprockets				Spacers
 <p>CM CM-FB</p>						
 <p>CW</p>						
 <p>SN SN-FB</p>						
 <p>SW</p>						
 <p>CMD CMD-FB</p>						
 <p>SN</p>						
 <p>CMDS</p>						

Weld-on Hubs

CM



CM Weld-on Hubs

Material: S45C

Hub Type	Bore		Main Dimensions (inch)				Wt. (lb.)
	Min	Max	C	D	E	G	
CM40	3/8	1	2	1.575	1 1/8	0.459	0.97
CM50	3/8	1 1/8	2 3/8	1.967	1 1/4	0.459	1.62
CM60	1/2	1 1/4	2 3/4	2.362	1 3/8	0.575	2.52
CM70	9/16	1 11/16	3 1/4	2.756	1 5/8	0.692	4.01
CM90	1 1/16	2	4 1/8	3.543	2	0.924	5.97
CM110	3/4	2 3/8	5	4.331	2 3/8	0.924	12.54
CM130	1	3	6	5.118	2 3/4	0.924	20.96
CM155	1 3/8	3 1/2	7 1/4	6.102	3 1/2	0.924	35.10

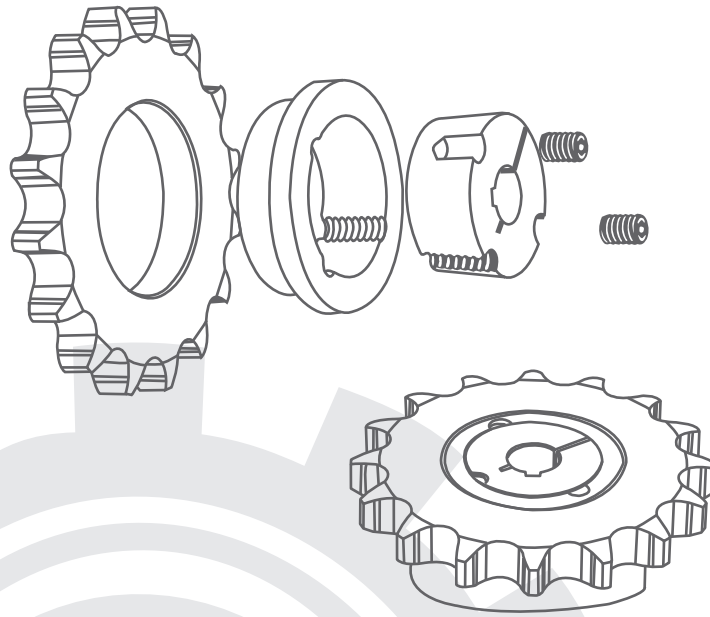
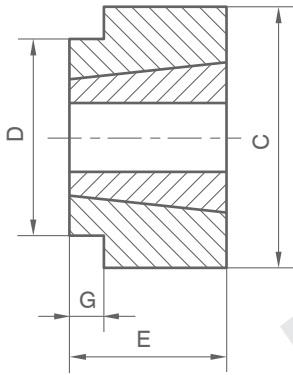
CW-FB Weld-on Hubs Bore

Hub Type	Weld-on Hubs Bore																											
	3/8	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 1/4	1 1/2	1 3/4	1 7/8	2	2 1/8	2 1/4	2 1/2	2 3/4	2 7/8	3	3 1/8	3 1/4	3 1/2	3 3/4	4	
CM40FB	○	○	○	○	○	○	○	○	○	○																		
CM50FB	○	○	○	○	○	○	○	○	○	○	○																	
CM60FB		○	○	○	○	○	○	○	○	○	○	○																
CM70FB			○	○	○	○	○	○	○	○	○	○	○	○	○	○												
CM90FB					○	○	○	○	○	○	○	○	○	○	○	○	○											
CM110FB							○	○	○	○	○	○	○	○	○	○	○	○	○									
CM130FB								○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
CM155FB														○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Weld-on Hubs

CW

**T_{aper}
B_{ore}**



CW

CW Weld-on Hubs

Material:S45C

Hub Type	Bush No	Bore		Main Dimensions (inch)			
		Min	Max	C	D	E	G
CW1008	1008	3/8	1	23/8	1.967	7/8	0.459
CW1210	1210	1/2	1 1/4	23/4	2.362	1	0.459
CW1215	1215	1/2	1 1/4	23/4	2.362	1 1/2	0.575
CW1610	1610	7/16	1 5/8	3 1/4	2.756	1	0.692
CW1615	1615	7/16	1 5/8	3 1/4	2.756	1 1/2	0.924
CW2012	2012	11/16	2	4 1/8	3.543	1 1/4	0.924
CW2517	2517	13/16	2 3/8	5	4.331	1 3/4	0.924
CW3020	3020	1	2 7/8	6	5.118	2	0.924
CW3030	3030	1	2 7/8	6	5.118	3	0.924
CW3535	3535	1 3/8	3 1/2	7 1/4	6.102	3 1/2	0.924

CW Weld-on Hubs Bush Bore

Hub Type	Bush	Taper Bushing Bore																											
		3/8	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/8	2 3/8	2 1/2	2 3/4	2 7/8	3 1/8	3 3/8	3 1/2		
CW1008	1008	○	○	○	○	○	○	○	○	○																			
CW1210	1210		○	○	○	○	○	○	○	○	○	○																	
CW1215	1215		○	○	○	○	○	○	○	○	○	○																	
CW1610	1610			○	○	○	○	○	○	○	○	○	○	○	○	○													
CW1615	1615			○	○	○	○	○	○	○	○	○	○	○	○	○													
CW2012	2012					○	○	○	○	○	○	○	○	○	○	○	○	○	○										
CW2517	2517							○	○	○	○	○	○	○	○	○	○	○	○	○	○								
CW3020	3020									○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
CW3030	3030									○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
CW3535	3535																○	○	○	○	○	○	○	○	○	○	○	○	○

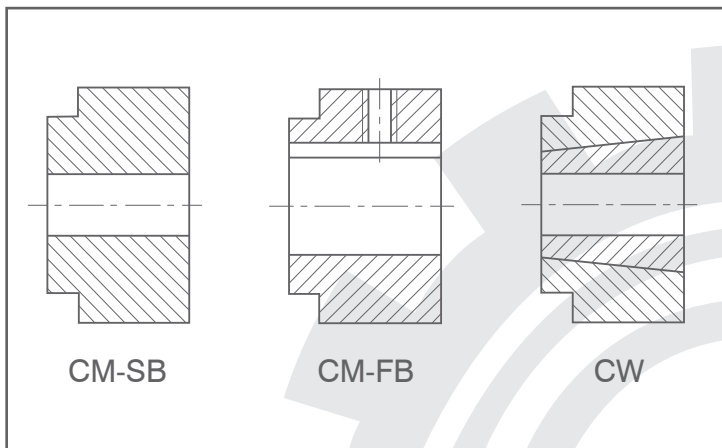
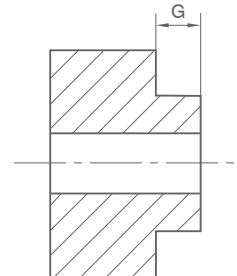
Transferable Hubs

OPERATION INSTRUCTION FOR CM, CW HUBS

CM/CW HUBS

There are two kinds of bores for CM Hubs: the pilot bore (can be reproduced into different types of bores, e.g. split bore, hex bore and square bore, etc.) and the finished bore. CW Hubs are paired with BTL taper bores. After matching the hubs with NSPT-BTL taper bushings, it can form various bore diameters.

if the dimension is less than the largest teeth thickness "G", it will probably become type C.



When welding, specific technology should be used (e.g. sub-arc-welding or carbon dioxide welding, etc.) to ensure the welding quality and avoid disfiguration. If care is not taken, the precision will be reduced and there will be difficulties when using.

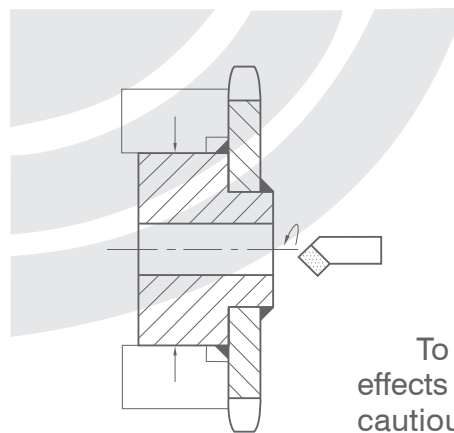
When CM/CW Hubs are welded with plate wheels, welding should be done at two sides for type C sprockets but only the hub side for type B.

When reproducing the bore for CM Hub into other dimensions or forms, this process should be done after welding in order to meet all the run-outs and tolerances.

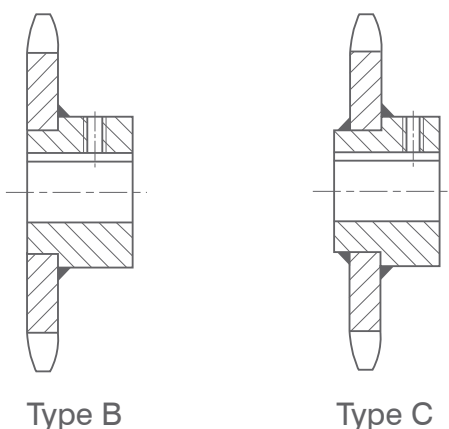
COMBINATIONS BETWEEN HUBS AND PLATE WHEELS

There are two methods to combine CM/CW Hubs with plate wheels: by welding or by using the riveted lap joint.

a). Connection by welding is suitable for sprockets with different teeth numbers, especially for sprockets with less teeth as they are not suitable for bolt joint. (NOTE: If the distance between hub and teeth is less than 6mm, it is not suitable for welding since the welding area will probably cause trouble for chain movement). You can either get type B or type C simplex combinations through welding in order to meet the thickness of



Caution!
To avoid negative effects to the precision, be cautious of the welding area selection.



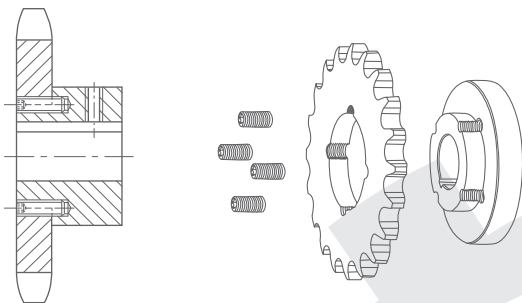
b). Rivet joint is also suitable for the combinations between CM/CW Hubs and plate wheels, especially for sprockets with small teeth numbers that are not fit for welding.

To use rivet joints, proper sized holes should be drilled and tapped at the connecting area. Then fix relevant inner hex screws to increase strength. By doing so hubs and plate wheels can be combined into a rivet form.

the largest pitch. Dimension "G" can be processed to reflect the largest pitch. For small pitch sprockets,

Transferable Hubs

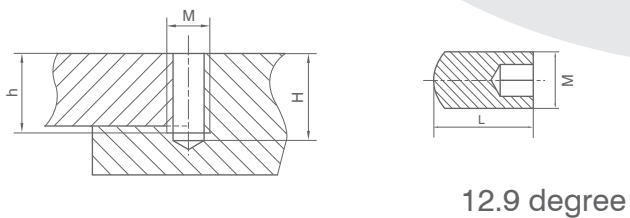
The combinatory sprockets in rivet joint can be made with simple equipment (bench drill machine) and tools (relevant drill and tap). After simple processes (drilling and hole tapping), combinatory sprockets of different specifications for different usages can be made. They can meet all kinds of assembling conditions.



By using finished bore hubs or taper bore hubs, other machining processes can be avoided. It has characteristics of high precision, low producing costs and easy to incorporate onto existing equipment.

TABLE FOR DIMENSIONS OF CM, CW HUBS FOR RIVET JOINT

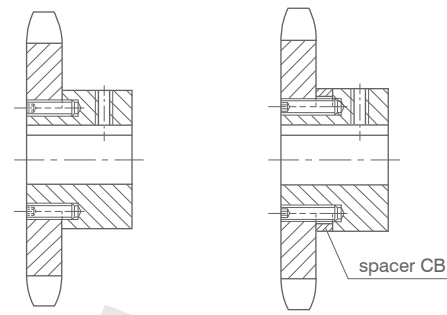
CM Hubs	CW Hubs	h	H	n-M	MxL
CM40	-	5/8	7/8	4-1/4	1/4X5/8
CM50	CW1008	7/8	1	4-1/4	1/4X7/8
CM60	CW1210	1	1 1/4	6-1/4	1/4X7/8
CM70	CW1610	1 1/8	1 3/8	6-1/4	1/4X1
CM90	CW2012	1 3/8	1 5/8	6-5/16	5/16X1 3/8
CM110	CW2517	1 3/8	1 5/8	6-3/8	3/8X1 3/8
CM130	CW3020	1 3/8	1 5/8	6-1/2	1/2X1 5/8
CM150	CW3535	1 3/8	1 5/8	6-5/8	5/8X1 5/8



Rivet combinatory sprockets are installed with high strength inner hex screws. The quantities and sizes are certified by our engineers' calculations. Their allowed strength in use is larger than those with keyways in bores.

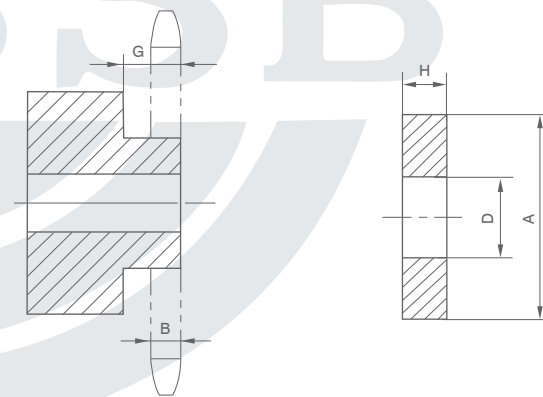
This can ensure the rivets will not be damaged before the keyways and key stocks are. They are designed for higher reliability and safety.

Type B sprockets must be adopted when CM/CW Hubs are combined with plate wheels.



Teeth thickness+spacer CB

"G" dimension of CM/CW Hubs are designed to fit the largest ones in order to meet the requirements of teeth thickness on the largest pitch wheels. If CM/CW Hubs are combined with small pitch plate wheels, the "G" dimension will probably be larger than the tooth thickness. And if so, a special designed spacer (CB) must be put between hubs and plate wheels so that a rivet joint can be performed.



Teeth Thickness < G

Spacer CB

TABLE FOR CB DIMENSIONS USED WITH CM/CW HUBS

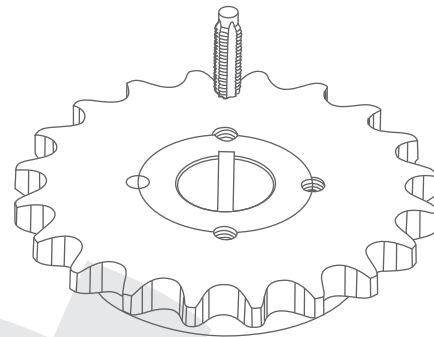
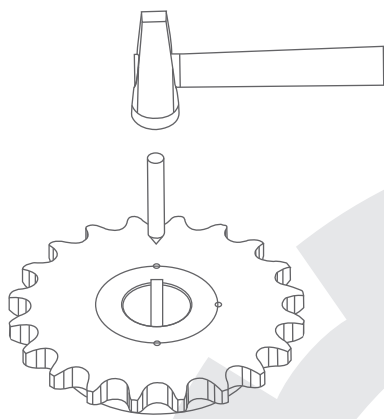
CM	CW	A	D	H					
				35	40	50	60	80	100
40	-	2	1.575	0.291	0.175	0.116	-	-	-
50	1008	2 3/8	1.967	0.291	0.175	0.116	-	-	-
60	1210	2 3/4	2.362	0.407	0.291	0.232	0.116	-	-
70	1610	3 1/4	2.756	0.524	0.408	0.343	0.233	0.117	-
90	2012	4 1/8	3.543	-	0.64	0.581	0.465	0.394	0.232
110	2517	5	4.331	-	0.64	0.581	0.465	0.394	0.232
130	3020	6	5.118	-	-	-	-	0.394	0.232

Transferable Hubs

INSTRUCTION FOR RIVET JOINT

1. To combine the relevant hubs and sprockets together, the number of set screws can be selected according to the design requirements (check with data listed) and the punching marks at the joint of sprockets and hubs.

3. Tap the screw hole to the demanded depth, using the manual method if necessary.

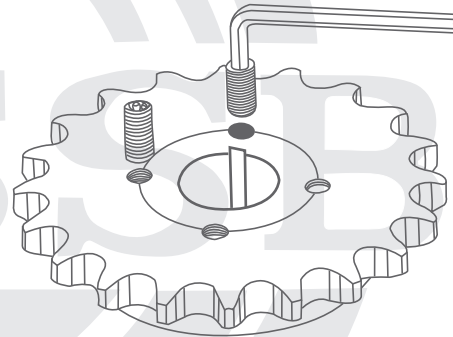


4. Use the relevant hexagon wrench to tighten all screws. After tightening screws safely, use calcic fluid to prevent corrosion and dust.

Please be aware of the equal spacing requirement. There is no need to be extremely precise: simply draw a line across.

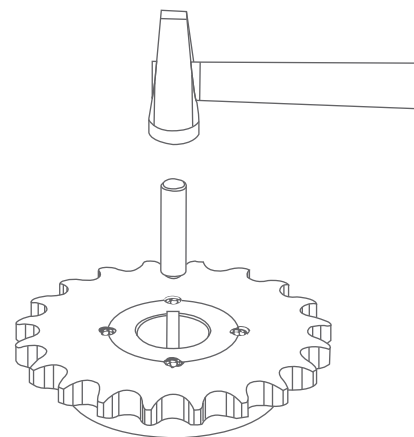
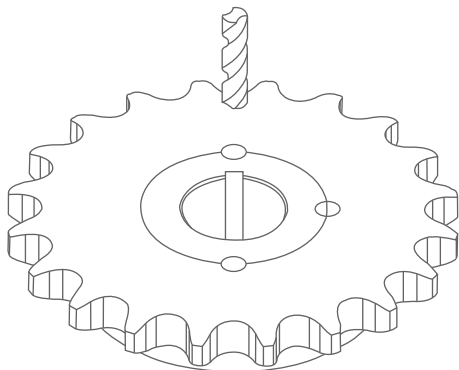
Note:1. When using finished bore hubs to combine with sprockets, if there is a requirement of the hub keyway to be centerlined with the teeth of the sprocket, a precise line should be drawn to ensure its centerlined requirement.

2. When using the CW taper bore hubs, please be sure that the bushing screw hole and riveting hole are staggered.



5. After tightening the screws, for the purpose of preventing the screws from loosening and falling, use a drift and drift the edge of the threaded hole to make it turn inward slightly.

2. Drill the pilot bore to a certain depth according to the drilling requirement.



Transferable Hubs

SN-SW

TABLE FOR CB DIMENSIONS USED WITH SN/SW HUBS

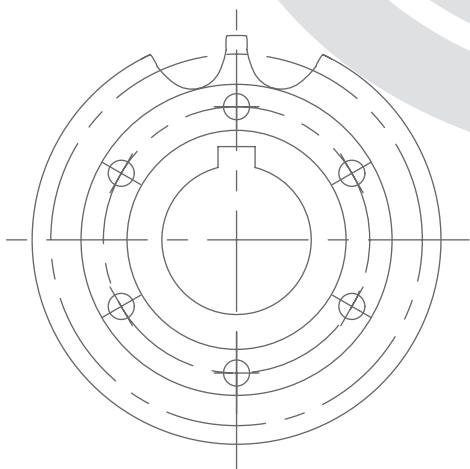
	SN70 SW1610	SN90 SW2012	SN110 SW2517	SN130 SW3020	
A	5 1/8	5 1/2	6 7/8	8 3/8	
B	4	4 3/4	5 3/4	7 1/8	
D	2.756	3.543	4.311	5.118	
n-M	4-3/8	6-3/8	6-7/16	6-9/16	
H	35	0.116	-	-	
	40	-	-	0.433	
	50	-	0.116	0.349	
	60	-	-	0.233	
	80	-	-	0.117	
100	-	-	-	0.232	

Degree 12.9 high strength bolts should be adopted for SN/SW hubs. The sizes and quantities can fully support the sprockets when they are used in the largest power transmission reliably and safely. If the plate wheels or hubs are ruined, just remove the damaged parts. This can save time and money on maintenance.

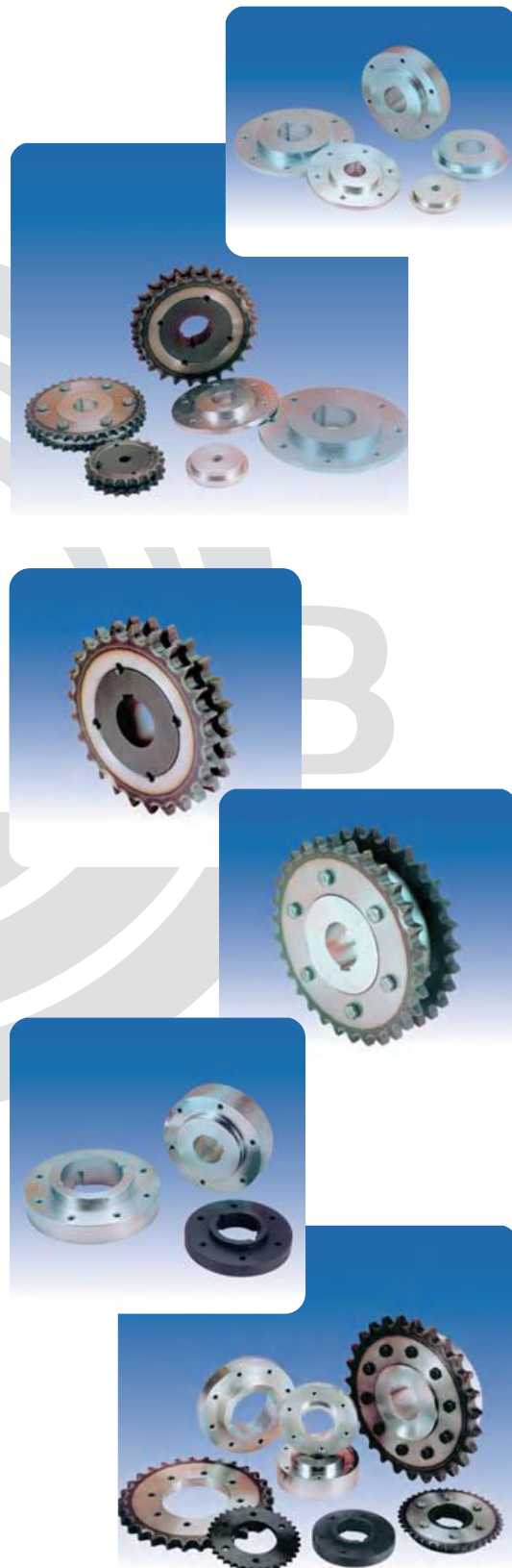
The Combinatory Sprockets designed by NSPT can fully ensure its quality and performance under the leading production system of CHSSB. Meanwhile, by providing excellent technical supports and variety of stocks, our customers can enjoy the biggest benefits ever.

TABLE FOR BOLT DIMENSIONS

	SN	SW	MxL	n
	SN1610	SW70	5/16x1	4
	SN2012	SW90	3/8x1 1/4	6
	SN2517	SW110	1/2x1 3/4	6
	SN3020	SW130	1/2x2	6
	SN3030	-	1/2x3	6
	SN3535	SW155	5/8x3 3/8	6



When the flange of the plate wheel is machined, the center line of the teeth must be kept in line with a hole of the flange. Then make a mark. When the keyway of the finished bore hub is machined, its center line must connect with a hole of the flange. Then make a mark. By doing so we can ensure the keyways of the hub are in line with the teeth of the combinatory sprockets.



Transferable Hubs

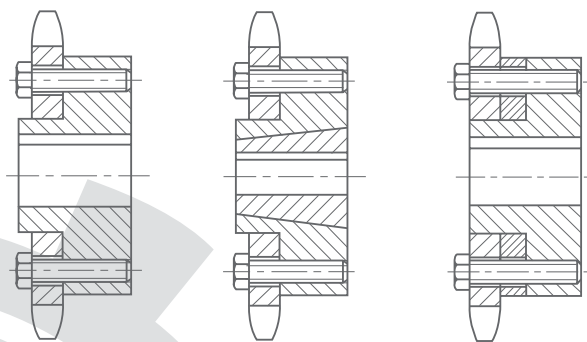
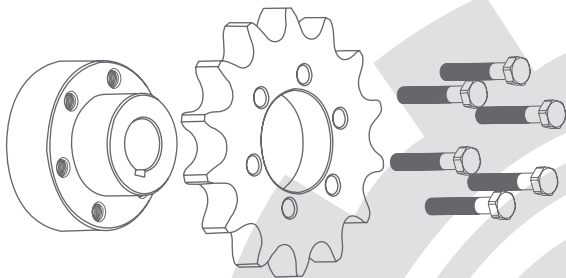
SN-SW

OPERATION INSTRUCTION ABOUT SN-SW HUBS

TAPER BORE SN/SW HUBS

SN/SW hubs are of multi-usages when combined with plate wheels by fixing bolts into the flanges. The flange holes of hubs are correspond with the flange holes of the plate wheels. These kinds of hubs are applicable for plate wheels with medium and large pitches or with large teeth numbers. (Plate wheels with small teeth numbers or small pitch cannot use SN/SW hubs due to the limitation of root diameters).

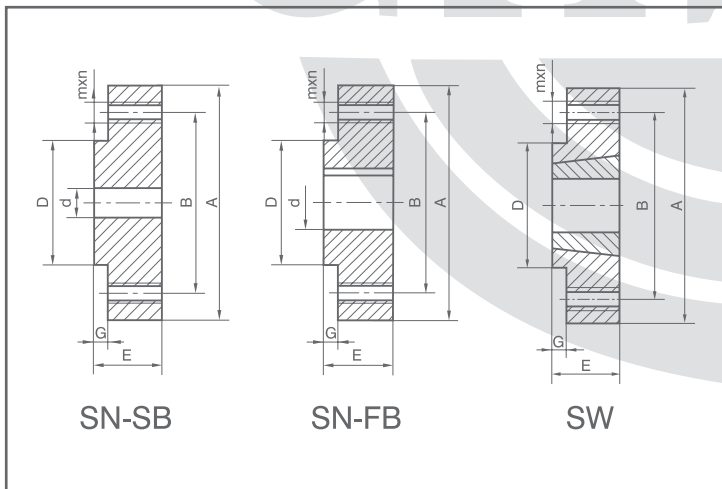
SN/SW hubs can be used to make type "C" or type "B" sprockets after combined with wheels with different pitches.



Please note: For small teeth numbers or small pitch plate wheels, SN/SW hubs might not be suitable.

There are two kinds of bores for SN hubs: pilot bores (can be remade into all kinds of taper bores or special bores, i.e. spline bores, hexagonal bores, and square bores) and finished bores. SN hubs are paired with taper bore bushings (NSPT-BTL)

"G" dimensions of SN/SW hubs are designed to be the largest ones in order to meet the requirements of teeth thickness for the largest plate wheels. The combined sprockets will be Type "C" if the teeth thickness is smaller than the "G" dimensions. In this case, if you need type "B", a special designed spacer "CB" must be used between the hub and plate wheel.



The bores for SW hubs are taper bores. They are matched with NSPT-BTL and can meet assembling requirements for bores $\Phi 12-\Phi 90$.

JOINT METHODS FOR SN/SW HUBS

When using SN/SW hubs, high strength bolts of proper sizes and quantities must be used. The hubs and plate wheels are combined together after fixing the bolts into the flange.

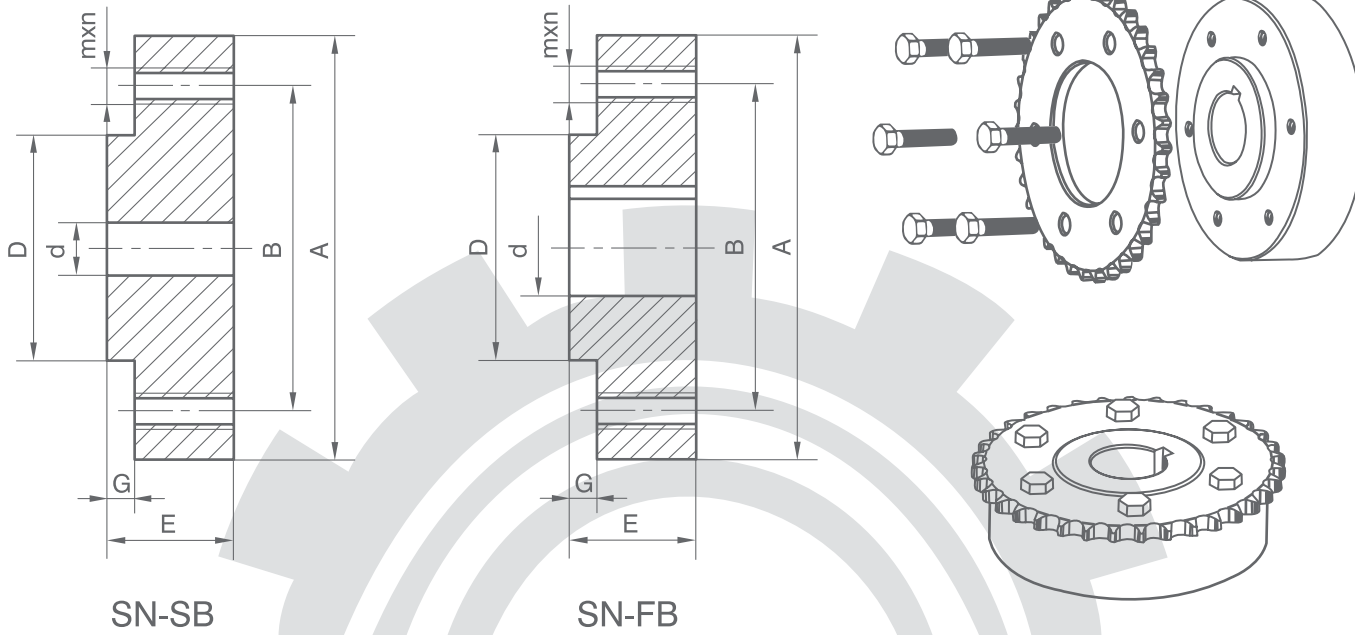


Transferable Hubs

SN

S_{standard}
B_{ore}

F_{inished}
B_{ore}



SN Easy Install Hubs

Material: S45C

Hub Type	Bore d		Main Dimensions (inch)					Screw Hole Mxn
	Min	Max	A	B	D	E	G	
SN70	7/16	15/8	5 1/8	4	2.756	1 5/8	0.284	5/16x4
SN90	11/16	2	5 1/2	4 3/4	3.543	2	0.459	5/16x6
SN110	13/16	2 3/8	6 7/8	5 3/4	4.331	2 3/8	0.692	3/8x6
SN130	1	2 7/8	8 3/8	7 1/8	5.118	2 3/4	0.924	1/2x6
SN155	1 3/8	3 1/2	9 1/2	8 7/16	6.102	3 1/2	0.924	5/8x6

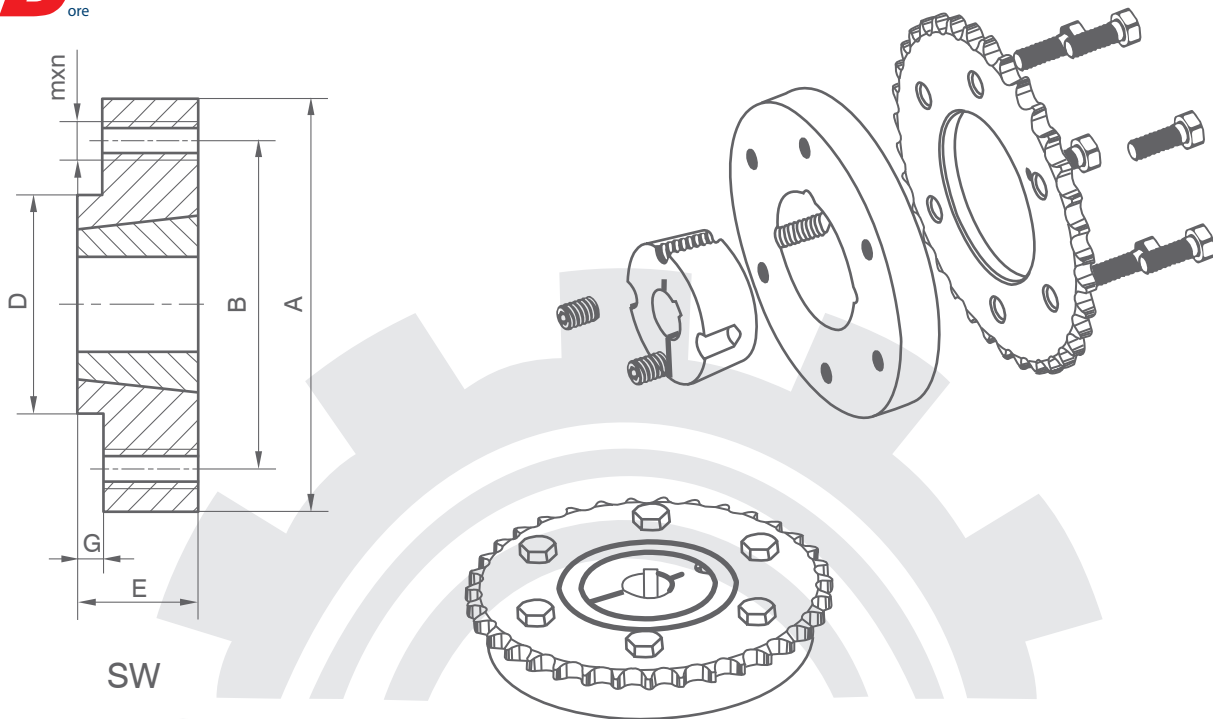
SN Easy Install Hubs

Hub Type	Hubs Finished bore																														
	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 1/2	1 9/16	1 5/8	1 3/4	1 7/8	2	2 1/8	2 3/8	2 1/2	2 3/4	2 7/8	3 1/8	3 3/8	3 1/2					
SN70FB	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																
SN90FB			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○													
SN110FB					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○											
SN130FB									○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
SN155FB																															

Transferable Hubs

SW

T_{aper}
B_{ore}



SW Weld-on Hubs

Material:S45C

Hub Type	Bush No	Main Dimensions (inch)					Screw Hole Mxn
		A	B	D	E	G	
SW1610	1610	5 1/8	4	2.756	1	0.284	5/16x4
SW2012	2012	5 1/2	4 3/4	3.543	1 1/4	0.459	5/16x6
SW2517	2517	6 7/8	5 3/4	4.331	1 3/4	0.692	3/8x6
SW3020	3020	8 3/8	7 1/8	5.118	2	0.924	1/2x6
SW3030	3030	8 3/8	7 1/8	5.118	3	0.924	5/8x6
SW3535	3535	9 1/2	8 7/16	6.102	3 1/2	0.924	5/8x6

SW Weld-on Hubs Taper Bushing Bore

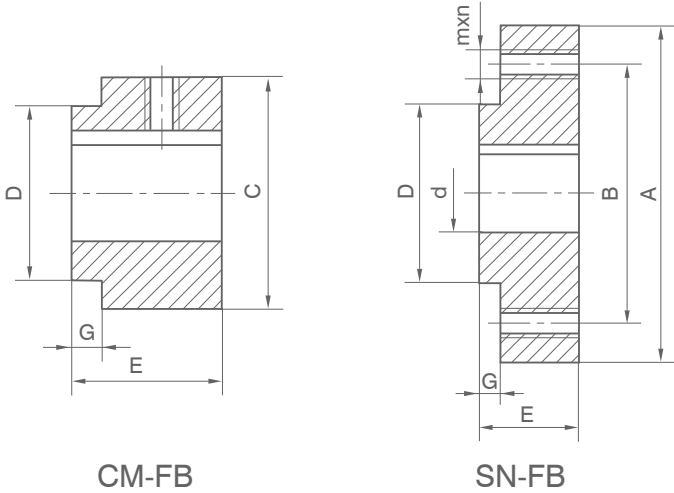
Hub Type	Bush No	Taper Bushing Bore																											
		9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/8	2 3/8	2 1/2	2 3/4	2 7/8	3 1/8	3 3/8	3 1/2				
SW1610	1610	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○													
SW2012	2012			○	○	○	○	○	○	○	○	○	○	○	○	○	○												
SW2517	2517					○	○	○	○	○	○	○	○	○	○	○	○												
SW3020	3020								○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
SW3030	3030								○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
SW3535	3535												○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

Transferable Hubs

FINISHED BORE HUBS

Customers can adopt hubs with different finished bores to make sprockets for different types and uses (simplex and duplex sprockets, double single sprockets, and complex sprockets with different teeth numbers).

Hubs with finished bores have adopted ISO standard bore dimensions, standard keyways, set screws, and bore diameters from 1/2"-4 1/2".



Pilot bore connects hubs in six methods: CM, CM-D, CM-DS, SN, SN-D and SN-DS.

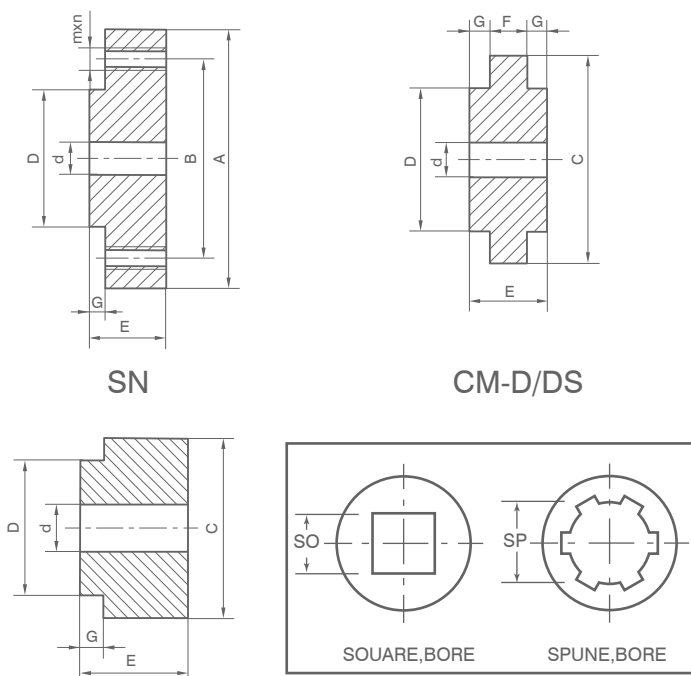
DETAIL LIST OF KEYWAYS, SET SCREWS FOR STANDARD BORE

Bore	Keyway WXD	Set Screws
1/2-9/16	1/8X1/16	No.10
5/8-7/8	3/16X3/32	1/4
15/16-1 1/4	1/4X1/8	5/16
15/16-1 3/8	5/16X5/32	5/16
1 7/16-1 3/4	3/8X3/16	3/8
1 13/16-2 1/4	1/2X1/4	1/2
2 5/16-2 3/4	5/8X5/16	5/8
2 13/16-3 1/4	3/4X3/8	5/8
3 5/16-3 3/4	7/8X7/16	3/4
3 13/16-4 1/2	1X1/2	3/4



PILOT BORE HUBS

NSPT can provide pilot bore hubs for different assemblies for customers in order to reproduce the bores according to their special needs, such as spline bores, square bores, hex bores and other special types of bores.



FINISHED BORES

Bore	CM40	CM50	CM60	CM70 SN70	CM90 SN90	CM110 SN110	CM130 SN130	CM155 SN155
3/8	●	●						
1/2	●	●	●					
9/16	●	●	●	●				
5/8	●	●	●	●				
11/16	●	●	●	●	●			
3/4	●	●	●	●	●	●		
7/8	●	●	●	●	●	●		
15/16	●	●	●	●	●	●		
1	●	●	●	●	●	●		
1 1/8		●	●	●	●	●	●	
1 3/16			●	●	●	●	●	
1 1/4			●	●	●	●	●	
1 3/8				●	●	●	●	●
1 1/2				●	●	●	●	●
1 9/16				●	●	●	●	●
1 5/8				●	●	●	●	●
1 3/4					●	●	●	●
1 7/8					●	●	●	●
2					●	●	●	●
2 1/8						●	●	●
2 3/8						●	●	●
2 1/2							●	●
2 3/4							●	●
2 7/8							●	●
3 1/8								●
3 3/8								●
3 1/2								●

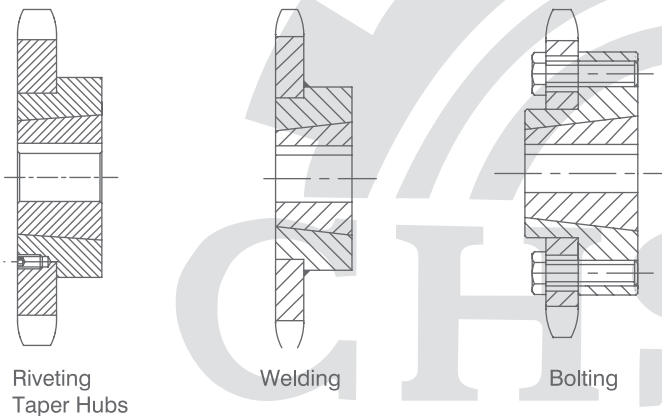
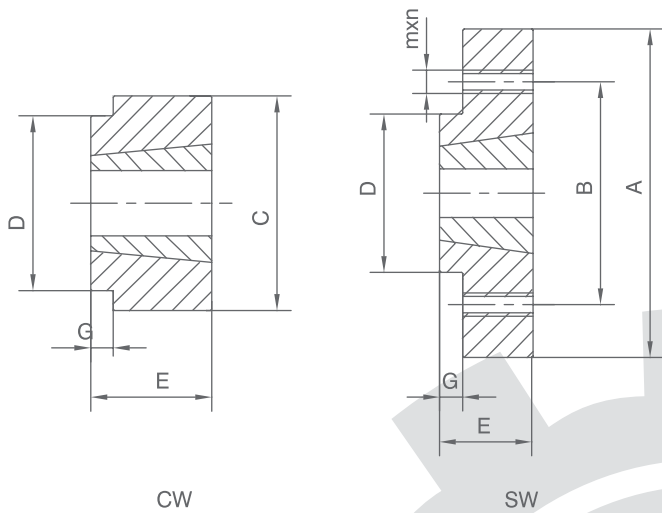
These are suitable for hubs with finished bores. All the dimensions listed for keyways are also available for bushings (not including shallow keyways.)

Transferable Hubs

**T_{aper}
B_{ore}**

CW SW

CW and SW Hubs use BTL Bushings for Combinatory Sprockets



TAPER BORE HUBS

Using hubs with taper bores (matched by the NSPT series of BTL bushings), you can get the whole series of standard bore dimensions (10-90, precision H7) with standard keyway. No lathe is needed. After combining with plate wheels, standard series of taper bore sprockets can be formed, which is proven to be very convenient to users.



COMBINING METHOD FOR CW AND SW

1. Taper Hubs are specially designed for NSPT Combinatory Sprockets while using BTL bushings. There are two kinds of taper hubs: CW and SW. By using the relative type of BTL bushings without re-machining, all inner bore dimensional requirements can be met.
2. CW taper hubs are suitable for smaller diameter Combinatory Sprockets. After welding and riveting with plate wheels, the completed Combinatory Sprockets can meet all functional requirements.
3. SW taper hubs are suitable for larger diameter Combinatory Sprockets. High tensional bolts are used to fix the plate wheels and hubs together. No more machining is required. It is the fastest way to form finished bore sprockets.
4. As the hubs are taper bored, they are used together with BTL bushings. This combination is suitable for all kinds of standard bore sizes. In this way, the inventory can be largely reduced, both in terms of varieties and quantities.

Taper Bushing Bores **BTL**

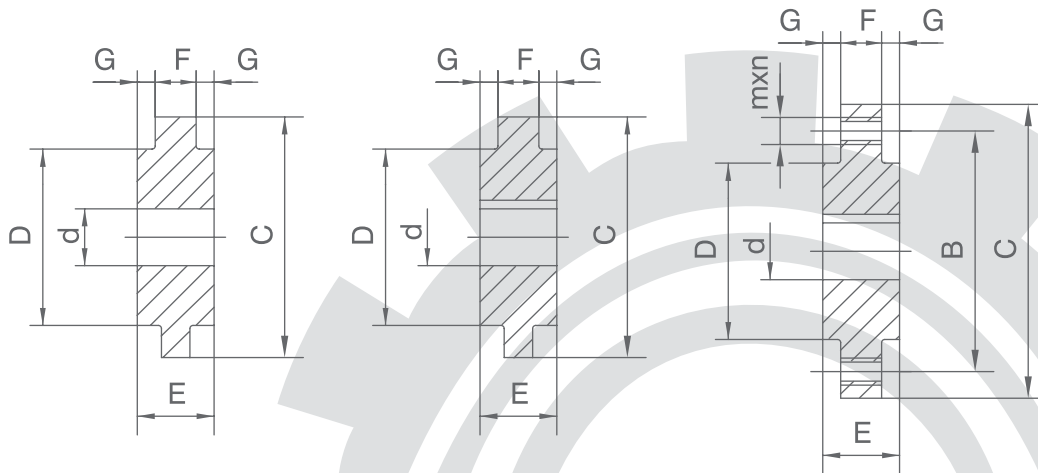
Bore	Taper Bushing					
	1610	2012	2517	3020	3030	3535
9/16	●					
5/8	●					
11/16	●	●				
3/4	●	●	●			
7/8	●	●	●			
15/16	●	●	●			
1	●	●	●	●	●	
1 1/8	●	●	●	●	●	
1 3/16	●	●	●	●	●	
1 1/4	●	●	●	●	●	
1 3/8	●	●	●	●	●	●
1 1/2	●	●	●	●	●	●
1 9/16	●	●	●	●	●	●
1 5/8	●	●	●	●	●	●
1 3/4		●	●	●	●	●
1 7/8		●	●	●	●	●
2		●	●	●	●	●
2 1/8			●	●	●	●
2 3/8			●	●	●	●
2 1/2				●	●	●
2 3/4				●	●	●
2 7/8				●	●	●
3 1/8						●
3 3/8						●
3 1/2						●

Transferable Sprockets Weld-on Sprockets



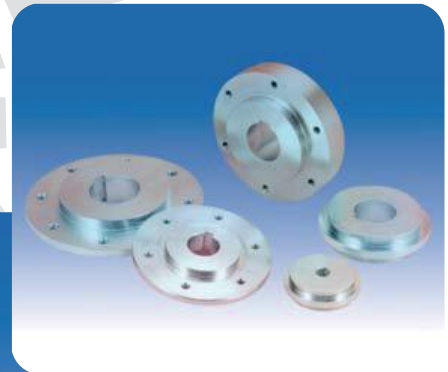
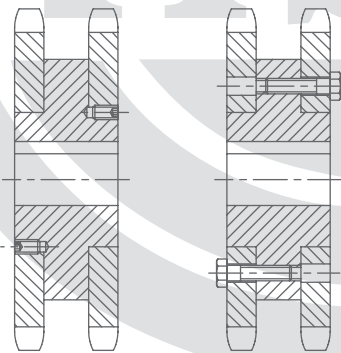
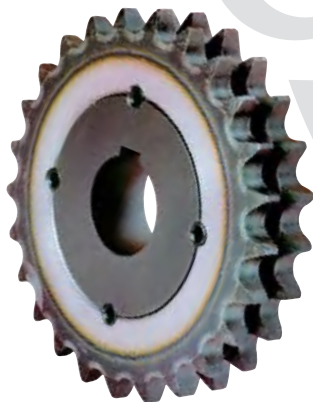
CMD and SND hubs designed by NSPT are specially used to form standard duplex combinatory sprockets. The sprockets can be obtained from pitch 3/8" to 1 1/2". All the dimensions and functions are exactly the same as the traditional duplex sprockets.

CMD and SND are special hubs for the Combinatory Sprockets matching with the Standard Duplex Chains.

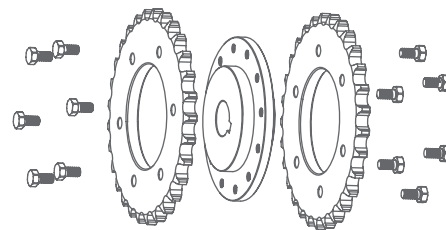
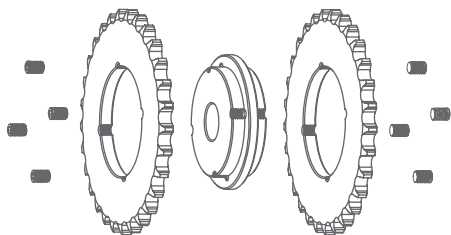


CMD Hubs are in stock with both pilot bores and finished bores.

SND Hubs are in stock only for finished bores.



For CMD hubs, riveting is applied to form duplex sprockets. For SND hubs, bolting is used to form duplex sprockets.

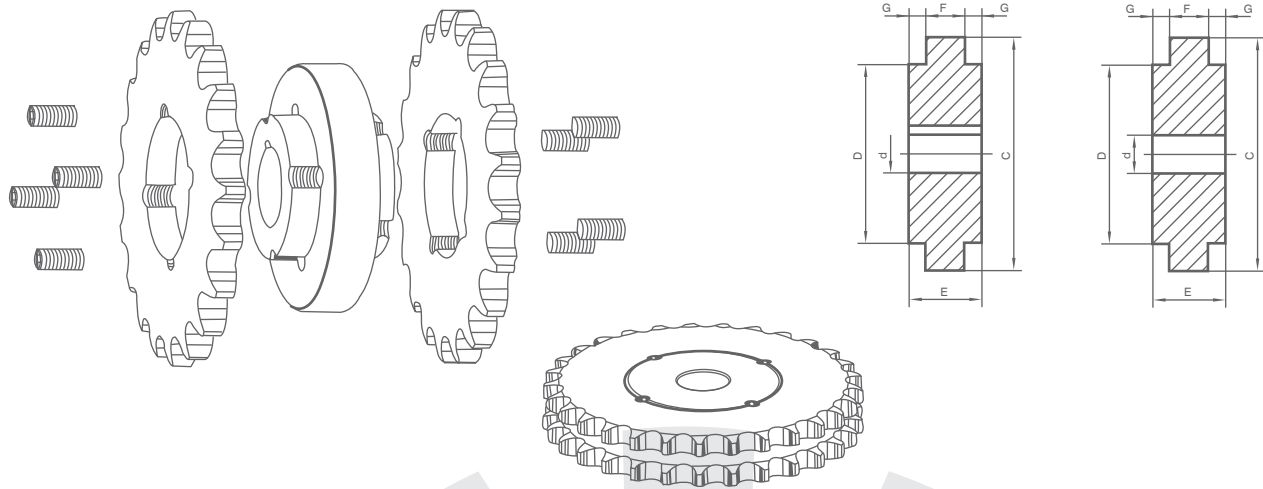


Riveting with screws is suitable for smaller diameter combinatory sprockets.

Bolting is suitable for larger diameter combinatory sprockets.

Transferable Hubs

CMD



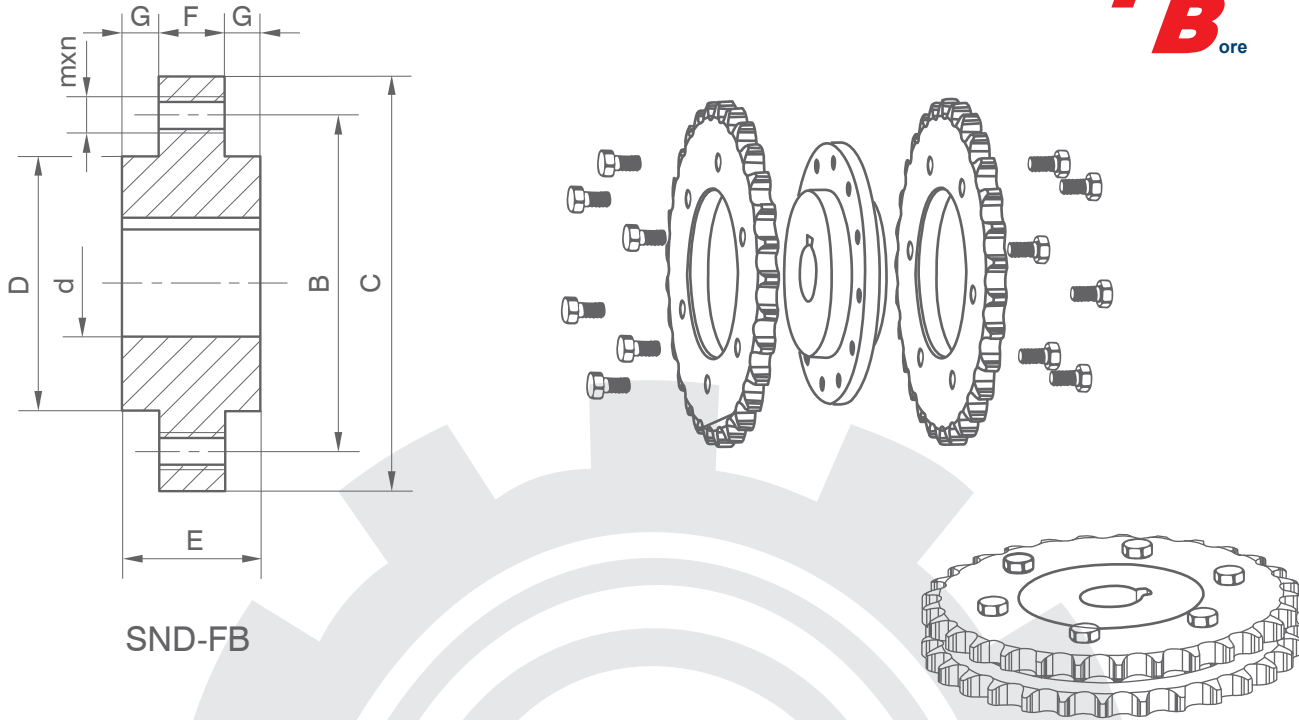
CMD Weld-on Hubs

Hub Type	Sprocket No.	Bore d		Main Dimensions (inch)					Wt. (Lb.)
		Min	Max	C	D	G	E	F	
CMD40	35	3/8	1	2	1.575	0.162	0.561	0.237	0.42
	40					0.275	0.841	0.264	0.63
	50					0.332	1.045	0.381	0.80
	60					0.444	1.341	0.453	0.91
CMD50	35	3/8	1 1/8	2 3/8	1.967	0.162	0.561	0.237	0.63
	40					0.275	0.841	0.264	0.95
	50					0.333	1.045	0.381	1.16
	60					0.444	1.341	0.453	1.37
CMD60	35	1/2	1 1/4	2 3/4	2.362	0.162	0.561	0.237	0.95
	40					0.275	0.841	0.264	1.26
	50					0.332	1.045	0.381	1.58
	60					0.444	1.341	0.453	1.91
	80					0.557	1.700	0.586	2.94
CMD70	35	9/16	1 5/8	3 1/4	2.756	0.162	0.561	0.237	1.31
	40					0.275	0.841	0.264	1.79
	50					0.275	0.841	0.264	1.79
	60					0.444	1.341	0.453	2.63
	80					0.557	1.700	0.586	4.09
	100					0.669	2.077	0.739	4.62
CMD90	40	11/16	2	4 1/8	3.543	0.275	0.841	0.264	1.94
	50					0.332	1.045	0.381	3.57
	60					0.444	1.341	0.453	4.20
	80					0.557	1.700	0.586	6.93
	100					0.669	2.077	0.739	7.77
	120					0.894	2.683	0.895	10.30
CMD110	40	3/4	2 3/8	5	4.331	0.275	0.841	0.264	4.44
	50					0.332	1.045	0.381	5.23
	60					0.444	1.341	0.453	6.15
	80					0.557	1.700	0.586	9.60
	100					0.669	2.077	0.739	10.92
	120					0.894	2.683	0.895	14.70
CMD130	80	1	2 7/8	6	5.118	0.557	1.700	0.586	13.86
	100					0.669	2.007	0.739	15.96
	120					0.894	2.683	0.595	21.40
CMD155	120	1 3/8	3 1/2	7 1/4	6.102	0.894	2.683	0.895	31.20

Transferable Hubs

SND

F^{inished}
B_{ore}



SND-FB Easy Install Hubs

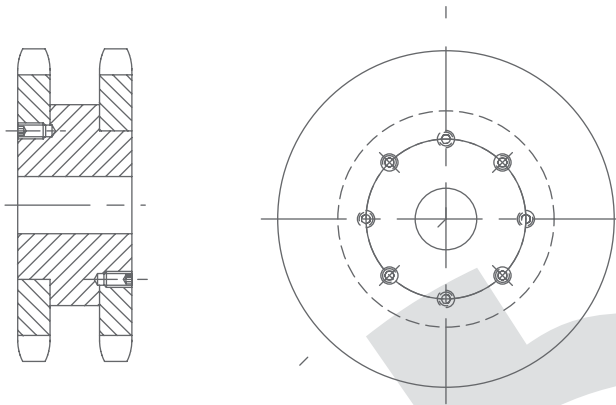
Hub Type	Sprocket No.	Bore		Main Dimensions (inch)						Screw Hole Mxn	Wt. (Lb.)
		Min	Max	C	B	D	G	E	F		
SND70	35	9/16	15/8	5 1/8	4	2.756	0.162	0.561	0.237	5/16x8	3.1
	40						0.275	0.841	0.264		4.4
SND90	40	11/16	2	5 1/2	4 3/4	3.543	0.275	0.841	0.264	5/16x12	5.2
	50						0.332	1.045	0.381		6.3
	60						0.444	1.341	0.453		7.5
SND110	50	13/16	2 3/8	6 7/8	5 3/4	4.331	0.332	1.045	0.381	3/8x12	9.4
	60						0.444	1.341	0.453		11.6
	80						0.557	1.700	0.586		18.1
	100						0.669	2.077	0.739		20.6
SND130	80	1	2 7/8	8 3/8	7 1/8	5.118	0.557	1.700	0.586	1/2x12	26.6
	100						0.669	2.077	0.739		31.5
	120						0.894	2.683	0.895		42.0
SND155	120	1 3/8	3 1/2	9 1/2	8 7/16	6.102	0.894	2.683	0.895	5/8x12	53.5
	—						—	—	—		—

SND-FB Easy Install Hubs Bore

Hub Type	Finished Bore Hubs																											
	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 1/2	1 9/16	1 5/8	1 3/4	1 7/8	2	2 1/8	2 3/8	2 1/2	2 3/4	2 7/8	3 1/8	3 3/8	3 1/2		
SND70FB	○	○	○	○	○	○	○	○	○	○	○	○	○	○														
SND90FB			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○											
SND110FB					○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○								
SND130FB								○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
SND155FB													○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

Transferable Hubs

Riveting Diagram for Duplex Combinatory Sprockets: Used with standard duplex roller chains.



When riveting the plate wheels on both sides of hubs, the rivet holes should be interlaced. The method of processing rivets is the same as when they are processed for simplex sprockets.

CMD Hubs of NSPT series used for the duplex combinatory sprockets are sold with the pilot bore. If finished bore sprockets are needed, please indicate it when purchasing. The finished bore should be lathed before riveting.

Dimensions for Processing Rivet Holes

Sprockets	Bore				
	MAX	Min	H	L	
35	1/4	1/4	3/8	5/16	
40	1/4	1/4	5/8	3/8	
50	3/8	1/4	3/4	5/8	
60	3/8	1/4	7/8	5/8	
80	1/2	5/16	1 1/4	1	
100	1/2	5/16	1 1/4	1	
120	5/8	3/8	1 3/8	1 1/4	

Hubs	Sprockets	Screw Hole	
		n	MxL
SND70	35	8	5/16X5/8
	40	8	5/16X7/8
SND90	40	12	5/16X7/8
	50	12	5/16x1
SND110	60	12	5/16X1 1/4
	50	12	3/8x1
	60	12	3/8x1 1/4
SND130	80	12	3/8x1 3/4
	100	12	3/8x2
SND150	80	12	1/2X1 3/4
	100	12	1/2X2
	120	12	1/2X2 3/4
	120	12	5/8X2 3/4

Contract for Hubs and Rivets

Hubs	n	Sprockets		L	
		min	max	min	max
CMD40	4x2	35	60	5/16	-
CMD50	4x2	35	60	5/16	-
CMD60	6x2	35	80	5/16	1
CMD70	6x2	35	100	5/16	1
CMD90	6x2	40	120	3/8	1 1/4
CMD110	6x2	40	120	3/8	1 1/4
CMD130	6x2	80	120	1	1 1/4
CMD150	6x2	-	120	-	1 1/4

The above two tables list the dimensions of the combinatory sprockets of different pitches when they are processed for riveting purposes and also the dimensions of the rivets used with different sizes of hubs. When choosing the rivets, our suggestion is the bigger the better to ensure the strength if only they are acceptable to the combinatory sprockets.

The strength of the rivets is 12.9.

Bolt Dimensions for SND Hubs.

The strength of the bolts is 12.9.

When the SND hubs are combined with plate wheels, the bolts should be interlaced, i.e. there should be 1/2 percent of the total quantity on each side.

SND hubs are sold in finished bore. After combined with plate wheels, the combinatory sprockets can be used immediately with no further processing.

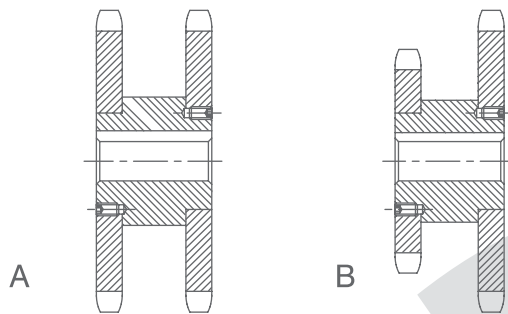


Transferable Sprockets Weld-on Sprockets



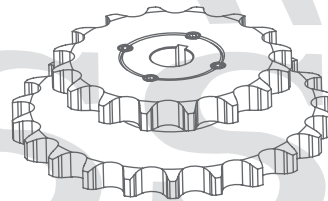
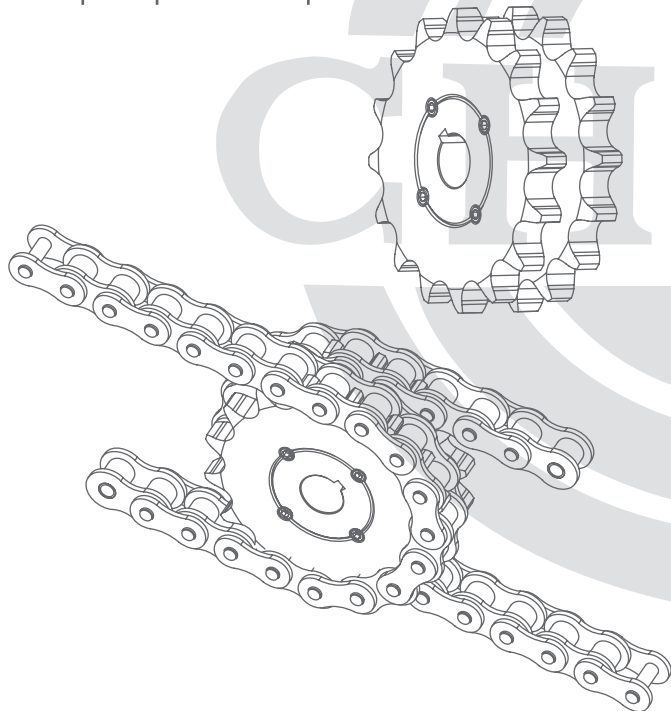
Combinatory DS Sprockets are designed exactly according to the standard DS Sprockets. They are made by CMDS hubs and standard plate wheels.

When drive wheels begin with more number of teeth, the transmission is the state of increasing speed. Otherwise, when drive wheels begin with less number of teeth, they are in the state of reducing speed.

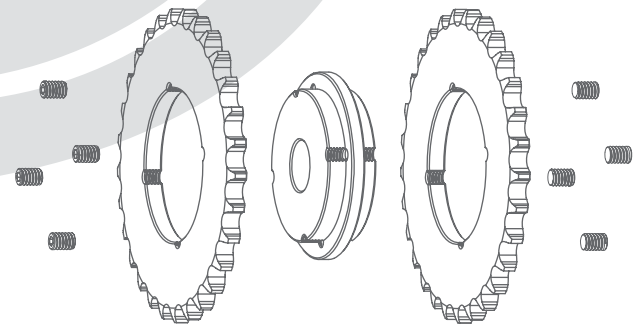


A. Combinatory Equal-Speed DS Sprockets.
B. Combinatory Unequal-Speed DS Sprockets.

DS Sprockets can be formed from pitch 1/2" to 1 1/4" within 60 teeth. The combination can be made freely to form both equal speed and unequal-speed DS Sprockets.



The only way to connect CMDS hubs with plate wheels is to rivet by bolts. The process of connecting the holes is the same as connecting the CMD hubs.



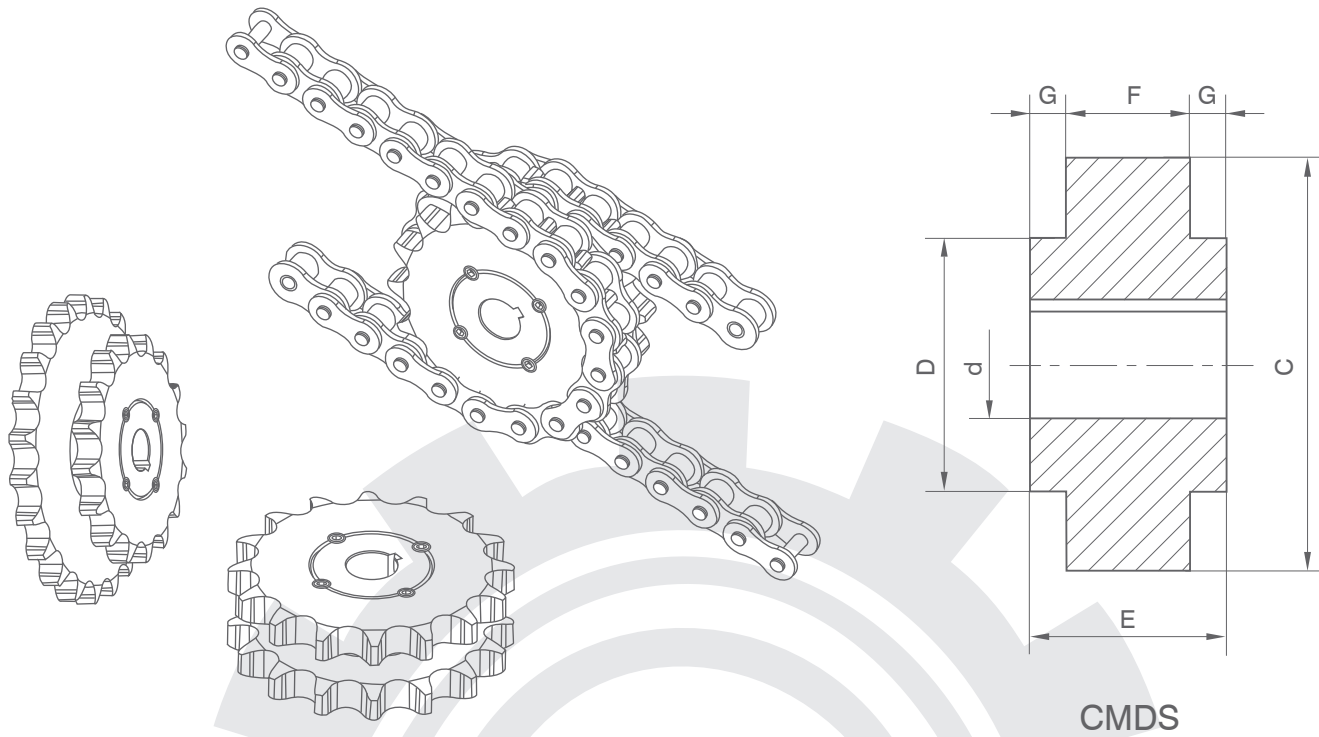
Combinatory equal-speed sprockets can be formed by using two plate wheels of the same pitch with equal number of teeth and CMDS hubs. They are used in constant transmissions with multi-steps.

Combinatory unequal-speed sprockets can be formed by using two plate wheels of different number of teeth with different pitches and CMDS hubs. This can acquire transmissions of increasing or reducing speed.

When making unequal-speed DS sprockets, the hubs should be selected according to a larger pitch plate wheels. A spacer should be added to the side of the smaller pitch plate wheel to ensure that both sizes of plate wheels must be the same as the hubs' sizes. Otherwise, it is impossible to make the riveting holes, and the installation cannot be completed.

Transferable Hubs

CMDS



CMDS Weld-on Hubs

Hub Type	Sprocket No.	Bore		Main Dimensions (inch)					Wt. (Lb.)
		Min	Max	C	D	G	E	F	
CMDS40	40	3/8	1	2	1.575	0.275	1.406	0.856	0.63
	50					0.332	1.656	0.992	0.80
	60					0.444	1.938	1.050	0.91
CMDS50	40	3/8	1 1/8	2 3/8	1.967	0.275	1.406	0.886	0.95
	50					0.332	1.656	0.992	1.16
	60					0.444	1.938	1.050	1.36
CMDS60	40	1/2	1 1/4	2 3/4	2.362	0.275	1.406	0.856	1.26
	50					0.332	1.656	0.992	1.58
	60					0.444	1.938	1.050	1.91
	80					0.557	2.188	1.074	2.94
CMDS70	40	9/16	1 5/8	3 1/4	2.756	0.275	1.406	0.856	1.79
	50					0.332	1.656	0.992	2.10
	60					0.444	1.938	1.050	2.63
	80					0.557	2.188	1.074	4.10
	100					0.669	2.688	1.350	4.62
CMDS90	50	11/16	2	4 1/8	3.543	0.332	1.656	0.992	3.57
	60					0.444	1.938	1.050	4.20
	80					0.577	2.188	1.074	6.93
	100					0.669	2.688	1.350	7.77
CMDS110	80	3/4	2 3/8	5	4.331	0.557	2.188	1.074	9.66
	100					0.669	2.688	1.350	10.92
CMDS130	100	1	2 7/8	6	5.118	0.669	2.688	1.350	13.86