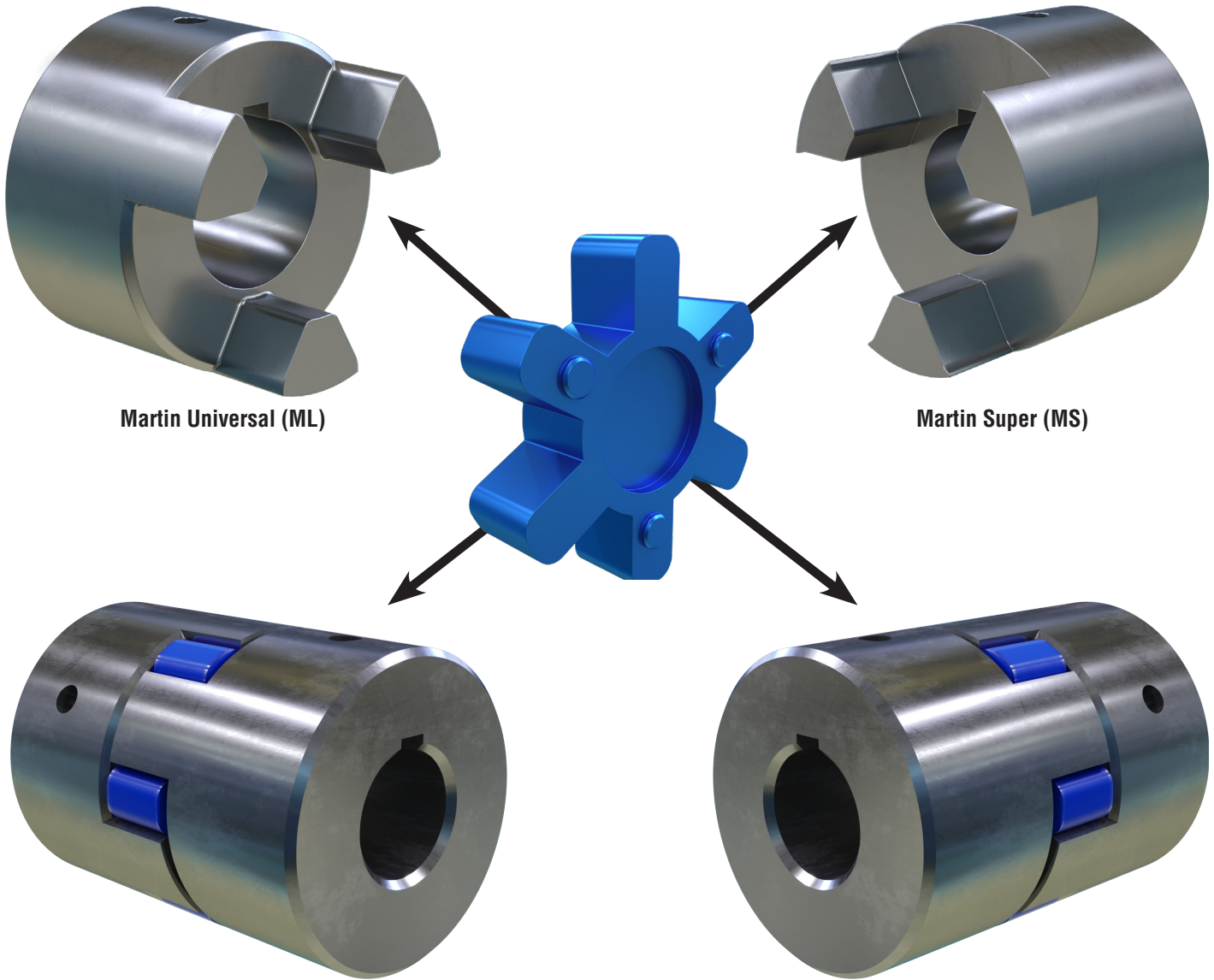


Flexible Jaw Couplings

Martin



Martin Universal (ML)

Martin Super (MS)

Now Martin Offers Two Styles

The Martin Super — Higher Horsepower

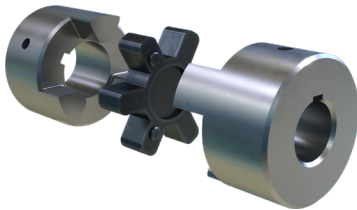
The Martin Universal — Completely Interchangeable

- No lubrication
- Easy installation
- No metal to metal contact
- Resistant to oil, dirt, sand, moisture, grease
- Easy inspection of load carrying spider
- Flexibility of angular or parallel misalignment of shafts by buna-n spider member permits smooth power transmission

Jaw Coupling Selection Procedure

- A. Determine service factor by matching driven unit with prime mover in service factor guide. B. Multiply service factor by driven unit or motor hp to obtain adjusted HP. C. Select flexible coupling with horsepower capacity equal to or greater than adjusted hp.

Service Factor Guide Driven Unit (Machinery)	Prime Mover		
	Electric Motor or Steam Turbine	Gasoline or Diesel Engine, 6 or More Cyl.	Gasoline or Diesel Engine, Less Than 6 Cyl.
Light: Uniform or steady load never exceeding horsepower rating, infrequent starting. Agitators, Blowers, Conveyors, Evaporators, Fans, Generators, Centrifugal Pumps, Stokers	1.0	1.5	2.0
Moderate: Heavy inertia, moderate shock, frequent starting; peak loads do not exceed 125 per cent average horsepower. Uneven load. Beaters, Rotary Pumps and Compressors, Cranes, Elevators, Mine and Propellor Fans, Generators, Pulp Grinders, Hoists, Kilns, Machine Tools, Mixers, Gear Pumps, Woodworking Machines	1.5	2.0	2.5
Heavy: Heavy shock conditions or frequent reversing. Peak loads do not exceed 150 per cent average horsepower. Uneven load. Reciprocating Pumps and Compressors, Crushers, Freight and Passenger Elevators, Mills (Hammer, Ball, Rolling, Turf, Flour), Vibrating Screens, Winches, Wire Drawing Machines, Punches, Shears	2.0	2.5	3.0



Bore Tolerances:
 0.5 – 1.75 + 0.001 – 0.000
 1.8125 – 2.625 + 0.0015 – 0.0000

Martin ML (Universal Series) — Torque and Horsepower Ratings

Catalog Number	Stainless Steel Catalog Number	Torque Rating lb — in		Buna-N Horsepower Capacity at Various RPM					Max. Bore	(Each) Weight
		Buna-N	Hytrel®	100	300	1200	1800	3600		
ML035	ML035SS	3.5	—	0.006	0.02	0.07	0.10	0.20	0.375	0.10
ML050	ML050SS	31.5	94.5	0.05	0.15	0.60	0.9	1.8	0.625	0.15
ML070	ML070SS	43.2	126	0.07	0.21	0.84	1.2	2.5	0.750	0.31
ML075	ML075SS	90	242	0.13	0.39	1.56	2.3	4.7	0.875	0.45
ML090	ML090SS	144	420	0.22	0.66	2.64	4.0	7.9	1.125	0.75
ML095	ML095SS	194	567	0.30	0.90	3.6	5.4	10.8	1.125	0.89
ML099	ML099SS	318	870	0.46	1.4	5.5	8.3	16.6	1.375	1.02
ML100	ML100SS	417	1,248	0.66	2.0	7.9	11.9	23.8	1.375	1.48
ML110	ML110SS	792	2,268	1.2	3.6	14.4	21.6	43.2	1.625	3.18
ML150	ML150SS	1,240	3,708	1.9	5.7	22.8	34.2	68.4	1.875	4.83
ML190	ML190SS	1,728	4,680	2.4	7.2	28.8	43.2	86.4	2.125	7.65
ML225	ML225SS	2,340	6,804	3.6	10.8	43.2	64.8	129.6	2.625	10.66
ML276	ML276SS	4,716	7,860							

Martin MS (Super Series) — Torque and Horsepower Ratings

Catalog Number	Torque Rating lb — in		Buna-N Horsepower Capacity at Various RPM					Max. Bore	(Each) Weight
	Buna-N	Hytrel®	100	300	1200	1800	3600		
MS050	37.3	112	0.06	0.18	0.71	1.0	2.1	0.625	0.13
MS070	59.4	178	0.09	0.28	1.1	1.7	3.4	0.750	0.25
MS075	157	471	0.25	0.75	3.0	4.5	8.9	0.875	0.53
MS090	241	723	0.38	1.1	4.6	6.9	13.7	1.125	0.58
MS095	241	723	0.38	1.1	4.6	6.9	13.7	1.125	0.70
MS099	512	1536	0.81	2.4	9.7	14.6	29.2	1.325	1.12
MS100	512	1536	0.81	2.4	9.7	14.6	29.2	1.325	1.43
MS110	1014	3042	1.6	4.8	19.3	28.9	57.8	1.325	3.24
MS150	1630	4890	2.6	7.7	31.0	46.5	93.0	1.875	4.76
MS190	2450	7350	3.9	11.6	46.6	69.9	139.7	2.125	7.66
MS225	2920	8760	4.6	13.9	55.5	83.2	166.5	2.625	10.76

NOTE: Above HP capacities are for Buna-N rubber spider and service factor of one. When Hytrel spider is used multiply capacities by three.

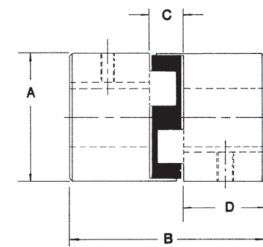
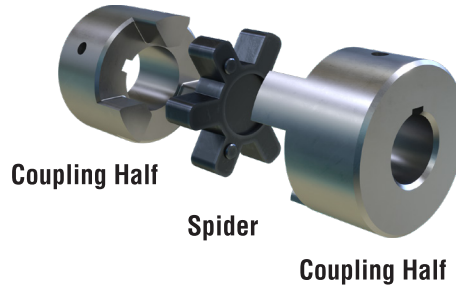
Misalignment Capacities: Angular up to 1°, Parallel up to .015 inches.

Hytrel is a registered trademark of E.I. DuPont & Co.

Stock Jaw Couplings



Catalog Number	Hub Dia.	Overall Length	Distance Between Flanges	Length Thru Bore	Bore		Wt. (lb)
	A	B	C	D	Min.	Max.	
ML035 or MS035	0.625	0.813	0.281	0.266	0.125	0.375	0.1
ML050 or MS050	1.167	1.719	0.469	0.625	0.250	0.625	0.1
ML070 or MS070	1.375	2.000	0.500	0.750	0.250	0.750	0.3
ML075 or MS075	1.750	2.125	0.500	0.813	0.250	0.875	0.4
ML090 or MS090	2.125	2.125	0.500	0.813	0.250	1.125	0.7
ML095 or MS095	2.125	2.500	0.500	1.000	0.438	1.125	0.8
ML099 or MS099	2.531	2.875	0.750	1.067	0.500	1.375	1.2
ML100 or MS100	2.531	3.500	0.750	1.375	0.438	1.375	1.5
ML110 or MS110	3.313	4.250	0.875	1.688	0.500	1.625	3.2
ML150 or MS150	3.750	4.500	1.000	1.750	0.625	1.875	4.5
ML190 or MS190	4.500	4.875	1.000	1.938	0.750	2.125	8.3
ML225 or MS225	5.000	5.375	1.000	2.188	0.750	2.625	12.0
ML276	6.180	7.813	1.580	3.120	0.875	2.875	30.5



Coupling Half
Spider
Coupling Half

Bore sizes are standard in .0625 increments from minimum to maximum bore range and have keyway and set screw except as shown below:
 .125 through .375 Bore — No KW — No SS
 #050 — .438 through .625 Bore — No KW — 1-SS
 #070, 075, 090, 095 — .438 and .5 Bore — No KW — 1-SS
 #099, 100, 110 — .5 Bore — No KW — No SS
 #150 — .625 Bore — No KW — No SS
 #190, 225 — .75 Bore — No KW — No SS

Note: in each coupling size a min. Plain bore is available that can be used to make special bores such as spline, hex, metric, or other shapes or sizes. For standard keyway sizes see Martin catalog, page E-158 and E-159.

Spiders

Description	Temp Range	Misalignment		Dampening	Color																					
		Angular	Parallel																							
Buna-N – Nitrile butadiene rubber is a flexible elastomer material that is oil resistant, resembles natural rubber in resilience and elasticity. Good resistance to oil. Standard elastomer.	-40° to 212° F -40° to 100° C	1°	0.015	High	Black																					
URETHANE – Urethane has greater torque capability than NBR (1.5 times), provides less dampening effect. Good resistance to oil and chemicals. Not recommended for cyclic or start/stop applications.	-30° to 160° F -34° to 71° C	1°	0.015	Low	Blue																					
HYTREL® – Hytrel is a flexible elastomer designed for high torque and high temperature operations. Hytrel has an excellent resistance to oil and chemicals. Not recommended for cyclic or start/stop applications.	-60° to 250° F -51° to 121° C	1/2°	0.015	Low	Tan																					
BRONZE – Bronze is a rigid, porous oil-impregnated metal insert exclusively for slow speed (maximum 250 RPM) applications requiring high torque capabilities. Bronze operations are not affected by extreme temperatures, water, oil, or dirt.	-40° to 450° F -40° to 232° C	1/2°	0.015	N/A	Bronze																					
Temperature Range	-40° to 212°	-30° to 160°			-60° to 250°	-40° to 450°																				
Size	Max Bore	Buna-N Torque				Urethane Torque				Hytrel Torque				Bronze Torque												
	in mm	Part Number	in-lb	Nm	RPM	Wt. lb	Part Number	in-lb	Nm	RPM	Wt. lb	Part Number	in-lb	Nm	RPM	Wt. lb	Part Number	in-lb	Nm	RPM	Wt. lb					
ML035	0.375	9	SRL35	3.5	0.4	31,000	0.01	—	—	—	—	SHL50	39	4.5	18,000	0.01	SHL50	50	5.6	18,000	0.01	SBL50	50	5.6	250	0.06
ML050	0.625	16	SRL50	31.5	3	18,000	0.01	SUL50	39	4.5	18,000	0.01	SHL50	50	5.6	18,000	0.01	SBL50	50	5.6	250	0.06				
ML070	0.750	19	SRL70	43.2	4.9	14,000	0.02	SHL70	65	7.3	14,000	0.02	SHL70	114	12.9	3,600	0.02	SBL70	114	12.9	250	0.08				
ML075	0.875	22	SRL75	90	10.2	11,000	0.03	SHL75	135	15.3	11,000	0.03	SHL75	227	25.6	3,600	0.03	SBL75	227	25.6	250	0.15				
ML090	1.000	25	SRL90	144	16.3	9,000	0.04	SHL90	216	24.4	9,000	0.04	SHL90	401	45.3	3,600	0.04	SBL90	401	45.3	250	0.17				
ML095	1.125	28	SRL95	194	21.9	9,000	0.04	SHL95	291	32.9	9,000	0.04	SHL95	561	63.4	3,600	0.04	SBL95	561	63.4	250	0.17				
ML099	1.188	30	SRL99	318	35.9	7,000	0.07	SHL99	477	53.9	7,000	0.07	SHL99	792	89.5	3,600	0.07	SBL99	792	89.5	250	0.50				
ML100	1.375	35	SRL100	417	47.1	7,000	0.07	SHL100	626	70.7	7,000	0.07	SHL100	1,134	128	3,600	0.07	SBL100	1,134	128	250	0.50				
ML110	1.625	42	SRL110	792	89.5	5,000	0.14	SHL110	1,188	134	5,000	0.14	SHL110	2,268	256	5,000	0.14	SBL110	2,268	256	250	0.62				
ML150	1.875	48	SRL150	1,240	140	5,000	0.21	SHL150	1,860	210	5,000	0.21	SHL150	3,708	419	5,000	0.21	SBL150	3,706	419	250	1.00				
ML190	2.125	55	SRL190	1,728	195	5,000	0.27	SHL190	2,592	293	5,000	0.27	SHL190	4,680	529	5,000	0.27	SBL190	4,680	529	250	1.30				
ML225	2.625	65	SRL225	2,340	264	4,200	0.41	SHL225	3,510	397	4,200	0.41	SHL225	6,228	704	4,200	0.41	SBL225	6,228	704	250	1.60				
ML276	2.875	73	SRL276	4,716	533	1,800	1.04	SHL276	4,750	397	1,800	1.04	SHL276	7,860	704	1,800	1.04	SBL276	12,500	1,412	250	2.80				

Coupling Selection Chart for 60 Hz Nema Motor Frames Based on Buna-N (Rubber) Spider ★†

Shaft Dia.	Nema Frame	Coupling Size	Max. HP @ RPM					
			1140		1725		3450	
			MS	ML	MS	ML	MS	ML
0.375	42	050	0.5	0.5	1	0.75	2	1.5
0.500	48	050	0.5	0.5	1	0.75	2	1.5
0.625	56,56 H	050	0.5	0.5	1	0.75	2	1.5
0.750	66	070	1	0.75	1.5	1	3	2
0.875	56HZ, 143T, 145T	075	2	1	3	2	7.5	3
	182, 184	090	3	2	5	3	10	7.5
1.375	182T, 184T, 213	095	3	3	5	5	10	10
	215	099	7.5	5	10	7.5	25	15

Shaft Dia.	Nema Frame	Coupling Size	Max. HP @ RPM					
			1140		1725		3450	
			MS	ML	MS	ML	MS	ML
1.875	213T, 215T, 245U, 256U	100	7.5	7.5	10	10	25	20
2.125	254T, 256T, 248U, 286U	110	15	10	25	20	50	40
2.375	284T, 286T, 324U, 326U, 326TS	150	30	20	40	30	75	60
2.125	324T, 326T, 364U, 365U	190	40	25	60	40	125	75
2.375	364T, 365T	225	50	40	75	60	150	100

Coupling Sizes are based on the rated torque, max. bore and a have a service factor of 1.0.
 ★ When using Hytrel or Bronze spider multiply above horsepower ratings by 3.
 † When using Urethane spider multiply above horsepower ratings by 1.5.



Jaw Couplings Imperial Bores

Bore	Keyway	ML035	ML050	ML070	ML075	ML090	ML095	ML099	ML100	ML110	ML150	ML190	ML225	ML276
Reboreable														
Reboreable														
1/8	No KW	ML035 1/8												
3/16	No KW	ML035 3/16												
1/4	No KW	ML035 1/4												
1/4	No KW	ML035 5/16	ML050 1/4	ML070 1/4	ML075 1/4									
5/16	No KW	ML035 5/16	ML050 5/16	ML070 5/16	ML075 5/16									
3/8	No KW	ML035 3/8	ML050 3/8	ML070 3/8	ML075 3/8	ML090 3/8								
3/8	No KW		ML050 3/8 W/KW	ML070 3/8 W/KW	ML075 3/8 W/KW	ML090 3/8 W/KW								
3/8	No KW		ML050 3/8 W/KW	ML070 3/8 W/KW	ML075 3/8 W/KW	ML090 3/8 W/KW								
7/16	No KW		ML050 7/16	ML070 7/16	ML075 7/16	ML090 7/16	ML095 7/16	ML099 7/16 W/KW	ML100 7/16					
7/16	No KW													
1 1/2	No KW		ML050 1/2	ML070 1/2	ML075 1/2	ML090 1/2	ML095 1/2	ML099 1/2	ML100 1/2	ML110 1/2				
1 1/2	No KW		ML050 1/2 W/KW	ML070 1/2 W/KW	ML075 1/2 W/KW	ML090 1/2 W/KW	ML095 1/2 W/KW	ML099 1/2 W/KW	ML100 1/2 W/KW					
9/16	No KW		ML050 9/16 W/KW	ML070 9/16	ML075 9/16	ML090 9/16	ML095 9/16	ML099 9/16	ML100 9/16					
9/16	No KW		ML050 9/16	ML070 9/16	ML075 9/16	ML090 9/16	ML095 9/16	ML099 9/16	ML100 9/16					
5/8	No KW		ML050 5/8	ML070 5/8	ML075 5/8	ML090 5/8	ML095 5/8	ML099 5/8	ML100 5/8	ML110 5/8	ML150 5/8 NKW			
5/8	No KW													
5/8	No KW													
5/8	No KW													
1 1/16	No KW													
3/4	No KW													
3/4	No KW													
13/16	No KW													
7/8	No KW													
7/8	No KW													
15/16	No KW													
1														
1 1/16														
1 1/8														
1 3/16														
1 1/4														
1 1/4														
1 5/16														
1 3/8														
1 3/8														
1 7/16														
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2 7/16														
2 1/2														
2 5/8														
2 3/4														
2 7/8														

Jaw Couplings Metric and Spline Bores



Metric Bore Chart

Bore	Keyway	ML035	ML050	ML070	ML075	ML090	ML095	ML099	ML100	ML110	ML150	ML190	ML225	ML276
4MM	No KW	ML035 4MM												
5MM	No KW	ML035 5MM												
6MM	No KW	ML035 6MM												
7MM	No KW		ML050 7MM	ML070 7MM NKW										
8MM	No KW	ML035 8MM	ML050 8MM NKW	ML070 8MM NKW		ML090 8MM NKW								
9MM	No KW													
10MM	No KW		ML050 9MM	ML070 9MM	ML075 9MM									
11MM	No KW		ML050 10MM NKW	ML070 10MM NKW	ML075 10MM NKW									
12MM	No KW		ML050 10MM	ML070 10MM	ML075 10MM	ML090 10MM								
14MM	No KW		ML050 11MM	ML070 11MM	ML075 11MM	ML090 12MM NKW	ML095 11MM		ML100 12MM					
14MM	No KW		ML050 12MM	ML070 12MM	ML075 12MM	ML090 14MM NKW	ML095 12MM							
14MM	No KW		ML050 14MM NKW	ML070 14MM NKW	ML075 14MM NKW	ML090 14MM	ML095 14MM	ML099 14MM	ML100 14MM					
15MM	No KW		ML050 14MM	ML070 14MM	ML075 14MM	ML090 15MM	ML095 15MM	ML099 15MM NKW	ML100 15MM NKW					
15MM	No KW		ML050 15MM	ML070 15MM	ML075 15MM	ML090 15MM	ML095 15MM	ML099 15MM	ML100 15MM					
16MM	No KW		ML050 16MM	ML070 16MM	ML075 16MM	ML090 16MM	ML095 16MM	ML099 16MM	ML100 16MM	ML110 16MM	ML150 16MM			
17MM	No KW			ML070 17MM	ML075 17MM	ML090 18MM	ML095 17MM	ML099 18MM	ML100 17MM	ML110 17MM	ML150 17MM			
18MM	No KW			ML070 18MM	ML075 18MM	ML090 19MM NKW	ML095 18MM	ML099 18MM	ML100 18MM	ML110 18MM				
19MM	No KW			ML070 19MM	ML075 19MM	ML090 19MM	ML095 19MM	ML099 19MM	ML100 19MM	ML110 19MM	ML150 19MM	ML190 19MM		
20MM	No KW				ML075 20MM	ML090 20MM	ML095 20MM	ML099 20MM	ML100 20MM	ML110 20MM	ML150 20MM	ML190 20MM		
22MM	No KW				ML075 22MM	ML090 22MM	ML095 22MM	ML099 22MM	ML100 22MM	ML110 22MM	ML150 22MM			
24MM	No KW					ML090 24MM	ML095 24MM	ML099 24MM	ML100 24MM	ML110 24MM	ML150 24MM	ML190 24MM		
25MM	No KW					ML090 25MM	ML095 25MM	ML099 25MM	ML100 25MM	ML110 25MM	ML150 25MM			
28MM	No KW						ML095 28MM	ML099 28MM	ML100 28MM	ML110 28MM	ML150 28MM	ML190 28MM		
30MM	No KW							ML099 30MM	ML100 30MM	ML110 30MM	ML150 30MM	ML190 30MM	ML225 30MM	ML276 32MM NKW
32MM	No KW								ML100 32MM	ML110 32MM	ML150 32MM	ML190 32MM	ML225 32MM	ML276 32MM
34MM	No KW								ML100 34MM					
35MM	No KW										ML150 35MM NKW	ML190 35MM NKW	ML225 35MM NKW	
35MM	No KW								ML100 35MM	ML110 35MM	ML150 35MM	ML190 35MM	ML225 35MM	
38MM	No KW										ML150 38MM	ML190 38MM	ML225 38MM	ML276 38MM
40MM	No KW										ML150 42MM	ML190 42MM	ML225 42MM	ML276 42MM
45MM	No KW										ML150 45MM	ML190 45MM	ML225 45MM	ML276 45MM
48MM	No KW										ML150 48MM NKW	ML190 48MM	ML225 48MM	ML276 48MM
48MM	No KW										ML150 48MM	ML190 48MM	ML225 48MM	ML276 48MM
50MM	No KW										ML190 50MM NKW	ML225 50MM NKW	ML276 50MM NKW	
50MM	No KW										ML190 50MM	ML225 50MM	ML276 50MM	
55MM	No KW										ML190 55MM NKW	ML225 55MM NKW	ML276 55MM NKW	
55MM	No KW										ML190 55MM	ML225 55MM	ML276 55MM	
60MM	No KW											ML190 55MM	ML225 55MM	ML276 60MM NKW
60MM	No KW											ML190 55MM	ML225 55MM	ML276 60MM
65MM	No KW												ML225 60MM	ML276 65MM NKW
65MM	No KW												ML225 65MM	ML276 65MM
70MM	No KW													ML276 70MM

Spline Bore Chart

Major Dia.	Teeth	Pitch	ML090	ML095	ML099	ML100	ML110	ML150	ML190	ML225	ML276
5/8	9	16/32	ML090SPL 5/8	ML095SPL 5/8	ML099SPL 5/8	ML100SPL 5/8					
3/4	11	16/32	ML090SPL 3/4	ML095SPL 3/4	ML099SPL 3/4	ML100SPL 3/4	ML110SPL 3/4	ML150SPL 3/4	ML190SPL 3/4		
7/8	13	16/32	ML090SPL 7/8	ML095SPL 7/8	ML099SPL 7/8	ML100SPL 7/8	ML110SPL 7/8	ML150SPL 7/8	ML190SPL 7/8		
1	15	16/32			ML099SPL 1	ML100SPL 1	ML110SPL 1	ML150SPL 1	ML190SPL 1	ML225SPL 1	
1 1/4	14	12/24					ML110SPL 1 1/4	ML150SPL 1 1/4	ML190SPL 1 1/4	ML225SPL 1 1/4	ML276SPL 1 1/4
1 3/8	21	16/32					ML110SPL 1 3/8	ML150SPL 1 3/8	ML190SPL 1 3/8	ML225SPL 1 3/8	
1 1/2	23	16/32								ML225SPL 1 1/2	
1 3/4	27	16/32					ML110SPL 1 3/4	ML150SPL 1 3/4	ML190SPL 1 3/4	ML225SPL 1 3/4	