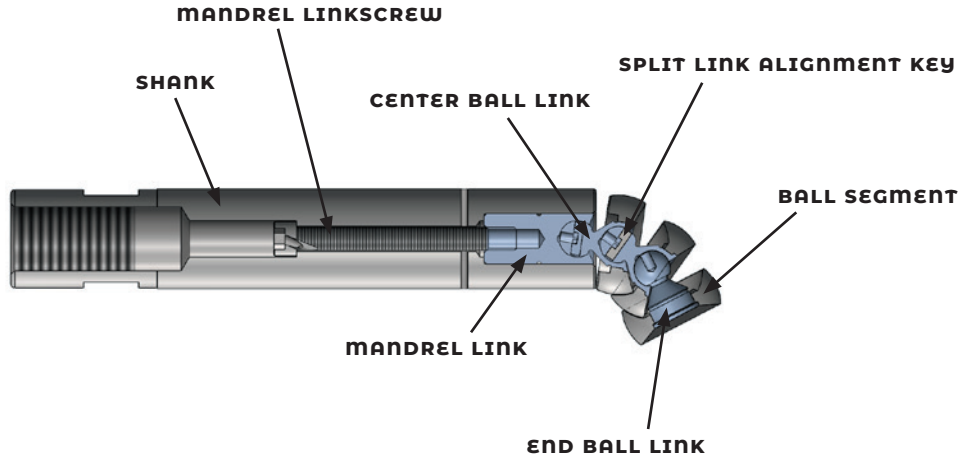


## MANDRELS AND LINKAGE

Select Pines mandrels, shanks, and ball segments up to 3.0" OD are in stock and ready for immediate shipment. Mandrel links, center ball links, and end links up to 13 MX are also in stock and ready for immediate shipment. Just say "#46 Center Ball Link", and we'll ship it right out.



TUBE OUTSIDE DIAMETER RANGE	MANDREL LINK	CENTER BALL LINK	END BALL LINK
.025 - .374"	#31	#41	#51
.375 - .499"	#32	#42	#52
.5 - .624"	#33	#43	#53
.625 - .749"	#34	#44	#54
.75 - .936"	#35	#45	#55
.937 - 1.24"	#36	#46	#56
1.25 - 1.449"	#37	#47	#57
1.5 - 1.749"	#38	#48	#58
1.75 - 2.124"	#39	#49	#59
2.125 - 2.624"	#310	#410	#510
2.625 - 3.374"	#311	#411	#511
3.375 - 4.624"	#312	#412	#512
4.625 - 6.0"	#313	#413	#513

### STOCKED MANDREL COMPONENTS

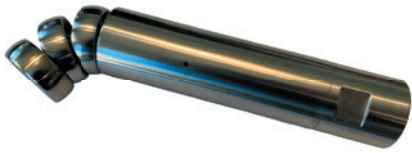


**AB18 STOCKED MANDRELS**

TUBE O.D.	WALL THICKNESSES				
0.375	0.028	0.035			
0.500	0.028	0.035	0.049	0.065	
0.625	0.028	0.035	0.049		
0.750	0.028	0.035	0.049	0.065	
0.875	0.028	0.035	0.049	0.065	
1.000	0.028	0.035	0.049	0.065	0.083
1.125		0.035	0.049	0.065	
1.250	0.028	0.035	0.049	0.065	
1.375			0.049		
1.500	0.028	0.035	0.049	0.065	
1.750	0.028	0.035	0.049	0.065	
2.000	0.028	0.035	0.049	0.065	
2.500				0.065	
3.000				0.065	



# STOCKED MANDREL COMPONENTS



## TOOL STEEL STOCKED MANDRELS

TUBE O.D.	WALL THICKNESSES					
0.375	0.028	0.035				
0.500	0.028	0.035	0.049	0.065		
0.625	0.028	0.035	0.049			
0.750	0.028	0.035	0.049	0.065		
0.875	0.028	0.035	0.049	0.065		
1.000	0.028	0.035	0.049	0.065	0.083	
1.125		0.035	0.049	0.065		
1.250	0.028	0.035	0.049	0.065		
1.375			0.049	0.065		
1.500	0.028	0.035	0.049	0.065		
1.750	0.028	0.035	0.049	0.065		
2.000	0.028	0.035	0.049	0.065	0.083	0.120
2.250			0.049			
2.500		0.035	0.049	0.065	0.083	
3.000				0.065		



## AB18 THINWALL STOCKED MANDRELS

TUBE O.D.	WALL THICKNESSES			
2.000				0.035
2.500	0.020	0.028	0.035	
3.000				0.035

## TOOL STEEL THINWALL STOCKED MANDRELS

TUBE O.D.	WALL THICKNESSES			
2.000				0.035
2.500				0.035
3.000				0.035