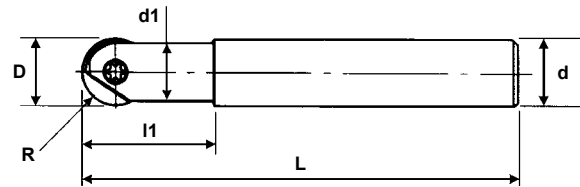


**INCH**

# Mirror Ball

## STEEL SHANK

**BNM Type - Straight Style**

### Specifications

CATALOG NUMBER	STK	DIMENSIONS							INSERT INCH (METRIC)	PARTS	
		D	R	L	d1	l1	d	$\alpha$		Screw	Wrench
BNMS-120026S-S050	•	.500	.250	3.26	.393	1.02	.500	-	BME-0500 (BNM-120)	FSW-3509H	T-10
BNMM-120032S-S050	•	.500	.250	5.13	.393	1.26	.500	-			
BNMM-120053S-S050	•	.500	.250	4.33	.393	2.08	.500	-			
BNML-120046S-S050	•	.500	.250	5.88	.393	1.81	.500	-			
BNMS-160032S-S062	•	.625	.312	3.62	.551	1.26	.625	-	BME-0625 (BNM-160)	FSW-4013H	T-15
BNMM-160063S-S062	•	.625	.312	4.84	.551	2.48	.625	-			
BNMS-200038S-S075	•	.750	.375	4.09	.669	1.49	.750	-	BME-0750 (BNM-200)	FSW-5016H	A-20
BNMM-200044S-S075	•	.750	.375	6.28	.669	1.73	.750	-			
BNMM-200075S-S075	•	.750	.375	5.55	.669	2.95	.750	-			
BNML-200060S-S075	•	.750	.375	6.88	.669	2.36	.750	-			
BNMS-250045S-S100	•	1.00	.500	4.76	.826	1.77	1.00	-	BME-1000 (BNM-250)	FSW-6020	T-30
BNMM-250070S-S100	•	1.00	.500	7.50	.826	2.76	1.00	-			
BNMM-250090S-S100	•	1.00	.500	6.53	.826	3.54	1.00	-			
BNML-250080S-S100	•	1.00	.500	9.06	.826	3.15	1.00	-			
BNMS-300053S-S125	•	1.25	.625	5.23	1.02	2.08	1.25	-	BME-1250 (BNM-300 or BNM-320)	FSW-8025	A-40
BNMM-300106S-S125	•	1.25	.625	7.32	1.02	4.17	1.25	-			

**Note: All cutters are supplied without inserts or wrenches.**

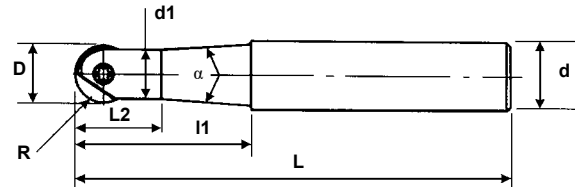


# Mirror Ball

**INCH**

## STEEL SHANK

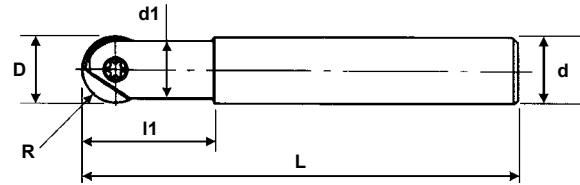
### BNM Type - Taper Style



### Specifications

CATALOG NUMBER	STK	DIMENSIONS								INSERT INCH (METRIC)	PARTS	
		D	R	L	d1	l1	L2	d	$\alpha$		Screw	Wrench
BNMS-060035T-S037	•	.250	.125	3.62	.212	1.37	.590	.375	12°	BME-0250 (BNM-060) (BNM-070)	FSW-2005H	T-06
BNMS-080035T-S050	•	.312	.156	3.62	.283	1.37	.728	.500	21°17'	BME-0312 (BNM-080)	FSW-2506H	T-07
BNMM-080053T-S050	•	.312	.156	4.33	.283	2.08	.728	.500	8°			
BNML-080075T-S050	•	.312	.156	5.19	.283	2.95	.728	.500	3°40'			
BNMS-100035T-S050	•	.375	.187	3.62	.355	1.37	.827	.500	19°3'	BME-0375 (BNM-100) (BNM-110)	FSW-3007H	T-08
BNMM-100053T-S050	•	.375	.187	4.33	.355	2.08	.827	.500	7°			
BNML-100075T-S050	•	.375	.187	5.19	.355	2.95	.827	.500	3°40'			
BNMM-120053T-S050	•	.500	.250	4.33	.393	2.08	.866	.500	3°	BME-0500 (BNM-120)	FSW-3509H	T-10
BNML-120085T-S062	•	.500	.250	5.70	.393	3.34	.866	.625	3°			
BNMM-160063T-S062	•	.625	.312	4.84	.551	2.48	1.10	.625	2°48'	BME-0625 (BNM-160)	FSW-4013H	T-15
BNML-160100T-S075	•	.625	.312	6.53	.551	3.93	1.10	.750	3°			
BNMM-200075T-S075	•	.750	.375	5.55	.669	2.95	1.34	.750	2°	BME-0750 (BNM-200)	FSW-5016H	A-20
BNML-200115T-S100	•	.750	.375	7.51	.669	4.52	1.34	1.00	4°			
BNMM-250090T-S100	•	1.00	.500	6.53	.826	3.54	1.61	1.00	4°40'	BME-1000 (BNM-250)	FSW-6020	T-30
BNML-250135T-S125	•	1.00	.500	8.46	.826	5.31	1.61	1.25	3°			
BNMM-300106T-S125	•	1.25	.625	7.32	1.02	4.17	1.93	1.25	5°30'	BME-1250 (BNM-300) (BNM-320)	FSW-8025	A-40
BNML-300160T-S125	•	1.25	.625	9.44	1.02	6.29	1.93	1.25	2°20'			

Note: All cutters are supplied without inserts or wrenches.

**METRIC****Mirror Ball****STEEL SHANK****BNM Type - Straight Style****Specifications**

CATALOG NUMBER	STK	DIMENSIONS								INSERT METRIC (INCH)	PARTS	
		D	R	L	d1	l1	L2	d	a		Screw	Wrench
BNMS-120026S-S12	•	12	6	83	10	26	-	12	-	BNM-120 (BME-0500)	FSW-3509H	T-10
BNMM-120053S-S12	•	12	6	110	10	53	-	12	-			
BNMS-160032S-S16	•	16	8	92	14	32	-	16	-	BNM-160 (BME-0625)	FSW-4013H	T-15
BNMM-160063S-S16	•	16	8	123	14	63	-	16	-			
BNMS-200038S-S20	•	20	10	104	17	38	-	20	-	BNM-200 (BME-0750)	FSW-5016H	A-20
BNMM-200075S-S20	•	20	10	141	17	75	-	20	-			
BNMS-250045S-S25	•	25	12.5	121	21	45	-	25	-	BNM-250 (BME-1000)	FSW-6020	T-30
BNMM-250090S-S25	•	25	12.5	166	21	90	-	25	-			
BNMS-300053S-S32	•	30	15	133	26	53	-	32	-	BNM-300 or BNM-320 (BME-1250)	FSW-8025	A-40
BNMM-300106S-S32	•	30	15	186	26	106	-	32	-			

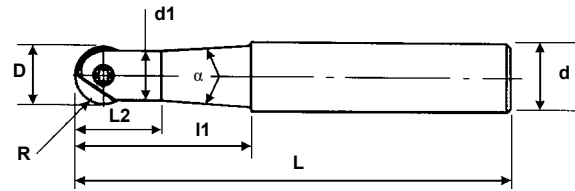
**Note: All cutters are supplied without inserts or wrenches.**



# Mirror Ball

**METRIC**

## STEEL SHANK

**BNM Type - Taper Style**


### Specifications

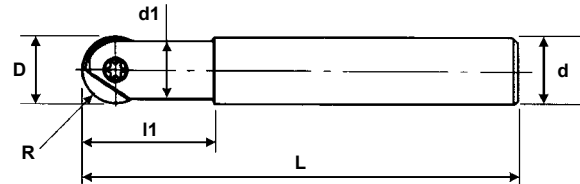
CATALOG NUMBER	STK	DIMENSIONS								INSERT METRIC (INCH)	PARTS	
		D	R	L	d1	l1	L2	d	$\alpha$		Screw	Wrench
BNMS-060030T-S10	•	6	3	80	5.4	30	15	10	8°15'	BNM-060 BNM-070 (BME-0250)	FSW-2005H	T-06
BNMS-080035T-S12	•	8	4	92	7.2	35	19	12	7°45'	BNM-080 (BME-0312)	FSW-2506H	T-07
BNMM-080053T-S12	•	8	4	110	7.2	53	19	12	3°30'			
BNML-080075T-S12	•	8	4	132	7.2	75	19	12	1°30'			
BNMS-100035T-S12	•	10	5	92	9	35	21	12	5°45'	BNM-100 BNM-110 (BME-0375)	FSW-3007H	T-08
BNMM-100053T-S12	•	10	5	110	9	53	21	12	2°30'			
BNML-100075T-S12	•	10	5	132	9	75	21	12	1°			
BNMM-120053T-S12	•	12	6	110	10	53	22	12	1°30'	BNM-120 (BME-0500)	FSW-3509H	T-10
BNML-120085T-S16	•	12	6	145	10	85	22	16	1°30'			
BNMM-160063T-S16	•	16	8	123	14	63	28	16	1°30'	BNM-160 (BME-0625)	FSW-4013H	T-15
BNML-160100T-S20	•	16	8	166	14	100	28	20	1°30'			
BNM-200050T-S25LS	•	20	10	170	17	50	34	25	12°	BNM-200 (BME-0750)	FSW-5016H	A-20
BNMM-200075T-S20	•	20	10	141	17	75	34	20	2°			
BNML-200115T-S25	•	20	10	191	17	115	34	25	1°50'			
BNM-250060T-S32LS	•	25	12.5	200	21	60	41	32	14°	BNM-250 (BME-1000)	FSW-6020	T-30
BNMM-250090T-S25	•	25	12.5	166	21	90	41	25	2°20'			
BNML-250135T-S32	•	25	12.5	215	21	135	41	32	1°30'			
BNM-300080T-S32LS	•	30	15	220	26	80	49	32	4°	BNM-300 or BNM-320 (BME-1250)	FSW-8025	A-40
BNMM-300106T-S32	•	30	15	186	26	106	49	32	3°			
BNML-300160T-S32	•	30	15	240	26	160	49	32	1°10'			

Note: All cutters are supplied without inserts or wrenches.

**INCH**

# Mirror Ball

## CARBIDE SHANK

**BNM-C Type - Straight Style**

### Specifications

CATALOG NUMBER	STK	DIMENSIONS							INSERT INCH (METRIC)	PARTS	
		D	R	L	d1	l1	d	$\alpha$		Screw	Wrench
BNMS-060016S-S025C	•	.250	.125	3.00	.212	.625	.250	-	BME-0250 (BNM-060) (BNM-070)	FSW-2005H	T-06
BNMS-060038S-S025C	•	.250	.125	3.75	.212	1.50	.250	-			
BNMM-060050S-S025C	•	.250	.125	4.25	.212	2.00	.250	-			
BNML-060076S-S025C	•	.250	.125	5.25	.212	3.00	.250	-			
BNMS-080038S-S031C	•	.312	.156	3.75	.283	1.50	.312	-	BME-0312 (BNM-080)	FSW-2506H	T-07
BNMM-080057S-S031C	•	.312	.156	4.50	.283	2.25	.312	-			
BNML-080089S-S031C	•	.312	.156	5.75	.283	3.50	.312	-			
BNMS-100038S-S037C	•	.375	.187	3.75	.354	1.50	.375	-	BME-0375 (BNM-100) (BNM-110)	FSW-3007H	T-08
BNMM-100057S-S037C	•	.375	.187	4.50	.354	2.25	.375	-			
BNML-100089S-S037C	•	.375	.187	5.75	.354	3.50	.375	-			
BNMS-120029S-S050C	•	.500	.250	3.38	.393	1.14	.500	-	BME-0500 (BNM-120)	FSW-3509H	T-10
BNMM-120063S-S050C	•	.500	.250	4.75	.393	2.50	.500	-			
BNML-120101S-S050C	•	.500	.250	6.35	.393	4.00	.500	-			
BNMS-160034S-S062C	•	.625	.312	3.70	.551	1.33	.625	-	BME-0625 (BNM-160)	FSW-4013H	T-15
BNMM-160063S-S062C	•	.625	.312	4.84	.551	2.48	.625	-			
BNML-160114S-S062C	•	.625	.312	7.10	.551	4.50	.625	-			
BNMS-200038S-S075C	•	.750	.375	4.09	.669	1.49	.750	-	BME-0750 (BNM-200)	FSW-5016H	A-20
BNMM-200075S-S075C	•	.750	.375	5.55	.669	2.95	.750	-			
BNML-200127S-S075C	•	.750	.375	8.00	.669	5.00	.750	-			
BNMM-250090S-100C	•	1.00	.500	6.53	.826	3.54	1.00	-	BME-1000 (BNM-250)	FSW-6020	T-30
BNMM-250114S-S100C	•	1.00	.500	7.50	.826	4.50	1.00	-			
BNML-250152S-S100C	•	1.00	.500	10.00	.826	6.00	1.00	-			

**Note: All cutters are supplied without inserts or wrenches.**

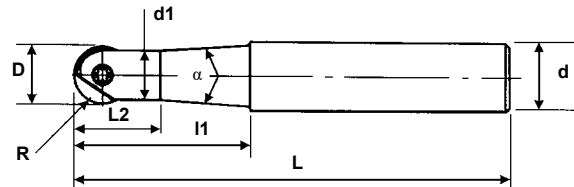


# Mirror Ball

**INCH**

## CARBIDE SHANK

### BNM-C Type - Taper Style



### Specifications

CATALOG NUMBER	STK	DIMENSIONS								INSERT INCH (METRIC)	PARTS	
		D	R	L	d1	l1	L2	d	$\alpha$		Screw	Wrench
BNMS-060032T-S037C	•	.250	.125	3.50	.212	1.26	.492	.375	10°	BME-0250 (BNM-060) (BNM-070)	FSW-2005H	T-06
BNMM-060050T-S037C	•	.250	.125	4.21	.212	1.96	.492	.375	5°			
BNML-060072T-S037C	•	.250	.125	5.07	.212	2.83	.88	.375	3°			
BNMS-080035T-S050C	•	.312	.156	3.62	.283	1.37	.787	.500	10°	BME-0312 (BNM-080)	FSW-2506H	T-07
BNMM-080053T-S050C	•	.312	.156	4.33	.283	2.08	.787	.500	8°			
BNML-080075T-S050C	•	.312	.156	5.19	.283	2.95	.787	.500	5°			
BNMS-100035T-S050C	•	.375	.187	3.62	.355	1.37	.886	.500	10°	BME-0375 (BNM-100) (BNM-110)	FSW-3007H	T-08
BNMM-100053T-S050C	•	.375	.187	4.33	.355	2.08	.886	.500	6°			
BNML-100075T-S050C	•	.375	.187	5.19	.355	2.95	.886	.500	3°			
BNMM-120053T-S050C	•	.500	.250	4.33	.393	2.08	1.02	.500	3°	BME-0500 (BNM-120)	FSW-3509H	T-10
BNML-120085T-S062C	•	.500	.250	5.70	.393	3.34	1.02	.625	4°			
BNML-160100T-S075C	•	.625	.312	6.53	.551	3.93	1.22	.750	2°	BME-0625 (BNM-160)	FSW-4013H	T-15
BNML-200115T-S100C	•	.750	.375	7.52	.669	4.52	1.41	1.00	5°	BME-0750 (BNM-200)	FSW-5016H	A-20

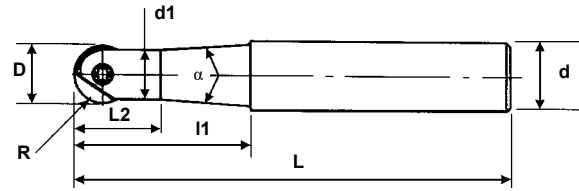
Note: All cutters are supplied without inserts or wrenches.

**METRIC**

# Mirror Ball

## CARBIDE SHANK

### BNM-C Type - Taper Style



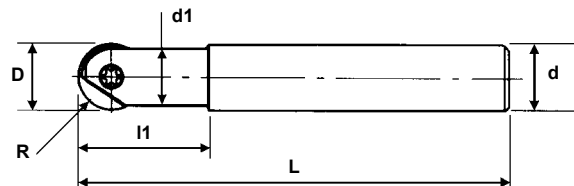
### Specifications

CATALOG NUMBER	STK	DIMENSIONS								INSERT METRIC (INCH)	PARTS	
		D	R	L	d1	l1	L2	d	$\alpha$		Screw	Wrench
BNMS-060030T-S10C	•	6	3	80	5.4	30	15	10	6°	BNM-060 BNM-070 (BME-0250)	FSW-2005H	T-06
BNML-080075T-S12C	•	8	4	132	7.2	75	20	12	2°	BNM-080 (BME-0312)	FSW-2506H	T-07
BNML-100075T-S12C	•	10	5	132	9	75	23	12	1°30'	BNM-100 BNM-110 (BME-0375)	FSW-3007H	T-08
BNML-120085T-S16C	•	12	6	145	10	85	27	16	2°30'	BNM-120 (BME-0500)	FSW-3509H	T-10
BNMM-160063T-S20C	•	16	8	123	14	63	30.5	20	4°	BNM-160 (BME-0625)	FSW-4013H	T-15
BNML-160100T-S20C	•	16	8	166	14	100	30.5	20	1°15'	BNM-160 (BME-0625)	FSW-4013H	T-15
BNML-200115T-S25C	•	20	10	191	17	115	36	25	2°	BNM-200 (BME-0750)	FSW-5016H	A-20
BNML-300160T-S32C	•	30	15	240	26	160	48	32	1°	BNM-300 or BNM-320 (BME-1250)	FSW-8025	A-40

Note: All cutters are supplied without inserts or wrenches.

## CARBIDE SHANK

### BNM-C Type - Straight Style



### Specifications

CATALOG NUMBER	STK	DIMENSIONS								INSERT METRIC (INCH)	PARTS	
		D	R	L	d1	l1	L2	d	$\alpha$		Screw	Wrench
BNMS-060017S-S06C	•	6	3	60	5.4	17	-	6	-	BNM-060 BNM-070 (BME-0250)	FSW-2005H	T-06
BNMM-060035S-S06C	•	6	3	92	5.4	35	-	6	-			
BNML-060017S-S06C	•	6	3	120	5.4	17	-	6	-			
BNMS-080025S-S08C	•	8	4	90	7.2	25	-	8	-	BNM-080 (BME-0312)	FSW-2506H	T-07
BNMM-080035S-S08C	•	8	4	92	7.2	35	-	8	-			
BNML-080075S-S08C	•	8	4	140	7.2	75	-	8	-			
BNML-080095S-S08C	•	8	4	160	7.2	95	-	8	-	BNM-100 BNM-110 (BME-0375)	FSW-3007H	T-08
BNMS-100030S-S10C	•	10	5	100	9	30	-	10	-			
BNMM-100043S-S10C	•	10	5	100	9	43	-	10	-			
BNML-100075S-S10C	•	10	5	140	9	75	-	10	-			
BNML-100080S-S10C	•	10	5	220	9	80	-	10	-			
BNML-100095S-S10C	•	10	5	160	9	95	-	10	-			
BNML-100140S-S10C	•	10	5	220	9	140	-	10	-			

Note: All cutters are supplied without inserts or wrenches.

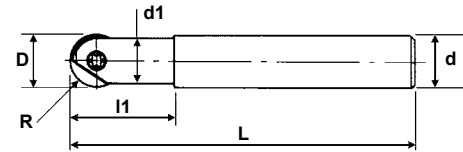
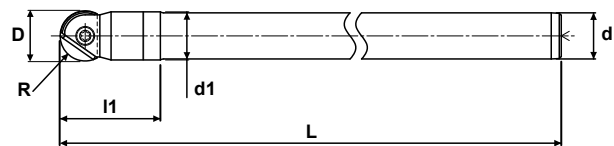


# Mirror Ball

**METRIC**

## CARBIDE SHANK

### BNM-C Type - Straight Style


**Fig. 1**

**Fig. 2**


### Specifications

CATALOG NUMBER	STK	DIMENSIONS						FIG.	INSERT METRIC (INCH)	PARTS	
		D	R	L	d1	l1	d			Screw	Wrench
BNMS-120028S-S12C	•	12	6	83	11	28	12	1	BNM-120 (BME-0500)	FSW-3509H	T-10
BNMM-120053S-S12C	•	12	6	110	11	53	12	1			
BNML-120095S-S12C	•	12	6	160	11	95	12	1			
BNML-120100S-S12C	•	12	6	220	11	100	12	1			
BNML-120130S-S12C	•	12	6	200	11	130	12	1			
BNML-120150S-S12C	•	12	6	220	11	150	12	1			
BNMS-160033S-S16C	•	16	8	92	15	33	16	1	BNM-160 (BME-0625)	FSW-4013H	T-15
BNML-160070S-S16C	•	16	8	140	15	70	16	1			
BNML-160090S-S16C	•	16	8	160	15	90	16	1			
BNML-160100S-S16C	•	16	8	220	15	100	16	1			
BNML-160110S-S16C	•	16	8	180	15	110	16	1			
BNML-160150S-S16C	•	16	8	220	15	150	16	1			
BNMU-160220-S15C	•	16	8	220	15	-	15	2			
BNMS-200039S-S20C	•	20	10	104	19	39	20	1	BNM-200 (BME-0750)	FSW-5016H	A-20
BNMM-200075S-S20C	•	20	10	141	19	75	20	1			
BNML-200100S-S20C	•	20	10	220	19	100	20	1			
BNML-200105S-S20C	•	20	10	180	19	105	20	1			
BNML-200125S-S20C	•	20	10	200	19	125	20	1			
BNML-200170S-S20C	•	20	10	250	19	170	20	1			
BNML-200220S-S20C	•	20	10	300	19	220	20	1			
BNMU-200270-S18C	•	20	10	270	19	40	18	2			
BNMM-250090S-S25C	•	25	12.5	166	24	90	25	1	BNM-250 (BME-1000)	FSW-6020	T-30
BNML-250100S-S25C	•	25	12.5	220	24	100	25	1			
BNML-250140S-S25C	•	25	12.5	220	24	140	25	1			
BNML-250170S-S25C	•	25	12.5	250	24	170	25	1			
BNMM-300120S-S32C	•	30	15	200	29	120	32	1	BNM-300 or BNM-320 (BME-1250)	FSW-8025	A-40
BNML-300100S-S32C	•	30	15	220	29	100	32	1			
BNML-300140S-S32C	•	30	15	220	29	140	32	1			
BNML-300170S-S32C	•	30	15	250	29	170	32	1			
BNML-300220S-S32C	•	30	15	300	29	220	32	1			

Note: All cutters are supplied without inserts or wrenches.