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UBC

DRIVE AND STEER AXLES SEALS AND BEARINGS

INTERNATIONAL – FRONT AXLE

AXLE CODE	INNER BEARING	OUTER BEARING	SEAL		
			CLASSIC	PLUS	EXTREME
FA – 98	38821/38895	3120/3196	380.8016		
FA – 100	39520/39581	3525/3585	35066	35068	
FA - 215	HM212049/HM212011	3782/3720	35066	35068	
FA – 232	6420/6461A	552A / 555S 3920/3979	43764	43763	
FA – 236	HM212049/HM212011	3782/3720	35066	35068	
FA – 339	H715345/H715311	28682/28622	45103		

INTERNATIONAL – SINGLE DRIVE AXLE

RA – 25	3920/3984	29520/39585	370191A		
RA – 30	33462/33281	39520/39585	370189A		
RA39.42.44	47620/47678	35920/39585	38780		
RA – 55. 57	592A/594A	580/572	45160		
RA – 60	47620/47686	39520/39590	38780		
RA – 65	592A/598A	572/575	43860		
RA – 66	592A/598A	572/575	47697	47695	47697EXTREME
RA – 132	592A/594A	572/580	47697	47695	47697EXTREME
RA – 140	47620/47686	39520/39590	38780		
RA – 186	47620/47686	39520/39590	38780		
RA – 197	592A/594A	572/580	45160		
RA – 199	47620/47686	39520/39590	45160		

INTERNATIONAL – TANDEM AXLE

AXLE CODE	INNER BEARING	OUTER BEARING	SEAL		
			CLASSIC	PLUS	EXTREME
RA – 328	47620/47686	39520/39590	38780		
RA – 329. S38H	592A/ 598A(3.625) 594A(3.75)	572/580	47697		
RA – 333	592A/ 598A(3.625) 594A(3.75)	572/575	43860		
RA – 351	47620/47686	39520/39590	38780		
RA – 435 / SP40	592A/ 598A(3.625) 594A(3.75)	572/580	47697	47695	47697EXTREME
RA – 436	592A/ 598A(3.625) 594A(3.75)	572/580	47697	47695	47697EXTREME
RA – 472	592A/594A	572/580	47697	47695	47697EXTREME

WHITE – FRONT & DRIVE AXLE

F3W120	HM212049/HM212011	3782/3720	320.2039 SEAL, 382.8039 KIT		
F3W1200	HM212049/HM212011	3782/3720	35066	35058	
WHITE DRIVE	672 / 681A (683XA ON SOME)	572/580	47699		

MACK – FRONT & DRIVE AXLE

FAW 538C 538W	HM212049/HM212011	45220/45280	35066	35058	
FAW616, 617	6420/6461A	552A/555S	43764	43763	
SINGLE DRIVE RAD23C	592A/598A	HM617010/HM617049	47697	47695	47697EXTREME
SS34C-W 34000 LB	572/582	563/567	45099	45097	
SSB34C-W 38000 LB	592A/598A	HM617010/HM617019	47697	47695	47697EXTREME
SS441C 44000LB	HM516410/HM516449	47620/47679	42672	42677	
SW50C SW58C 65000 LB	775/780	772/776			

TRAILER AXLE BEARINGS & SEALS

MAKE	AXLE	SEAGULL SEALS	INNER BEARING	OUTER BEARING
AUSTRALIAN TANKER	ATN	46305 / 46300	HM218248/HM281210	HM212049/HM212011
ROCKWELL	RN - TN - ATN - 15"	46305 / 46300	HM218248/HM218210	HM212049/HM212011
ROCKWELL	TL – ATL	43752	665A/653	HM212049/HM212011
FRUEHAUF	ROUND, 1 BEAM	42623 / 42622	593/592A	HH506348/HH506310
FRUEHAUF	PRO – PAR	42623 / 42622	HM518445/HM518410	HM518445/HM518410
FREIGHTER	MK4 – MK5	AP4507	32217	32215
FREIGHTER	ROCKWELL RT-TN-ATN	46305 / 46300	HM218249/HM218210	HM212049/HM212011
EATON	JE 50 IL 07L	---	HM218248/HM218210	HM212049/HM212011
RUBERY OWEN	EARLY SPIDER	40136	663/653	HM212049/HM212011
RUBERY OWEN	LATE SPIDER	43752	665A/653	HM212049/HM212011
STD FORGE	20" – 15"	40136	663/653	HM212049/HM212011
DANA	20" – 15"	43752	665A/653	HM212049/HM212011
HAYES DANA	LYONHAUL	46305 / 46300	HM218248/HM218210	HM212049/HM212011
MC GRATH	EARLY	40136	663/653	HM212049/HM212011
MC GRATH	LATE	43752	665A/653	HM212049/HM212011
HUALMARK	REYCO INGERSOLL	40136	663/653	HM212049/HM212011
HAULMARK	LATE DANA (STD)	46305 / 46300	HM218248/HM218210	HM212049/HM212011
BPW-GREASE	EARLY GEN EHZ 9000	---	33217	33213
BPW-GREASE	LATE GENERATION H91 – H10 – R10	---	33118	33213
BPW-OIL	LATE GENERATION H91 – H10 – R10	---	33118	33213
BPW-GREASE	BPW L/ WEIGHT 9000 & ECO	---	33116	32310

UBC – TRUCK

SEAL BY DIMENSION BY APPLICATION

SEAL	DIMENSIONS	TYPE	APPLICATION
34384		SEAGULL CR PLUS RUBBER TYPE	Mack, Freightliner
34386	3.438X4.770X0.700	SEAGULL CR PLUS RUBBER TYPE	Mack, Freightliner
34387	3.438X4.762X0.859	SEAGULL CR CLASSIC METAL TYPE	Mack, Freightliner
35058		SEAGULL CR CLASSIC METAL TYPE	Steer Axle, 9.000~12.000lbs. Dana Spicer, Eaton, Rockwell, Ford, Freightliner&Sterling, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
35059	3.500X4.854X0.580	SEAGULL CR PLUS RUBBER TYPE	Steer Axle, 9.000~12.000lbs. Dana Spicer, Eaton, Rockwell, Ford, Freightliner&Sterling, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
35066	3.500X4.847X0.904	SEAGULL CR CLASSIC METAL TYPE	Steer Axle, 9.000~12.000lbs. Dana Spicer, Eaton, Rockwell, Ford, Freightliner&Sterling, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
35103		SEAGULL CR CLASSIC METAL TYPE	Steer Axle, 9.000~12.000lbs. Dana Spicer, Eaton, Rockwell, Ford, Freightliner&Sterling, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
38750	3.875X5.506X0.937	SEAGULL CR CLASSIC METAL TYPE	GM Kodial 17.000 lbs. Eaton 19050-S / 19910 1996.
38780	3.875X5.696X0.937	SEAGULL CR CLASSIC METAL TYPE	Drive Axle, 23.000~34.000 lbs. Tendem Dana Spicer Eaton, Navistar, White.
38783		SEAGULL CR CLASSIC METAL TYPE	Drive Axle, 23.000~34.000 lbs. Tendem Dana Spicer Eaton, Navistar, White.

40136	4.000X5.759X1.078	SEAGULL CR CLASSIC METAL TYPE	mack
42622	4.250X6.025X0.581	SEAGULL CR PLUS RUBBER TYPE	Drive Axle 22500 lbs, Dana Spicer P, Eaton P, Delphas P, Fruehauf Pro-Par, Rockwell TP.
42623	4.250X6.014X0.984	SEAGULL CR CLASSIC METAL TYPE	Drive Axle 22500 lbs, Dana Spicer P, Eaton P, Delphas P, Fruehauf Pro-Par, Rockwell TP.
42624	4.250X6.048X0.984	SEAGULL CR CLASSIC METAL TYPE	Drive Axle 22500 lbs, Dana Spicer P, Eaton P, Delphas P, Fruehauf Pro-Par, Rockwell TP.
42627		SEAGULL CR PLUS RUBBER TYPE	Drive Axle 22500 lbs, Dana Spicer P, Eaton P, Delphas P, Fruehauf Pro-Par, Rockwell TP.
42672	4.250X6.259X1.250	SEAGULL CR CLASSIC METAL TYPE	Drive Axle, 44.000 lbs. Tandem, Mack.
45103	4.500X5.756X1.016	SEAGULL CR CLASSIC METAL TYPE	Mack, freightliner
45160	4.500X6.259X1.047	SEAGULL CR CLASSIC METAL TYPE	Dana Spicer, Eaton, Navistar, White.
46300		SEAGULL CR PLUS RUBBER TYPE	Drive Axle, Rockwell STD. GM C-60, Eaton, Shuler.
46304	4.625X6.014X0.912	SEAGULL CR PLUS RUBBER TYPE	Drive Axle, Rockwell STD. GM C-60, Eaton, Shuler.
46305	4.625X6.006X1.063	SEAGULL CR CLASSIC METAL TYPE	Drive Axle, Rockwell STD. GM C-60, Eaton, Shuler.
46308		SEAGULL CR CLASSIC METAL TYPE	Drive Axle, Rockwell STD. GM C-60, Eaton, Shuler.
46394		SEAGULL CR CLASSIC METAL TYPE	
47692		SEAGULL CR PLUS RUBBER TYPE	Drive Axle, 38.000~46.000 lbs. Tandem Dana Spicer, Eaton, Rockwell, Ford, Freightliner, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
47693		SEAGULL CR CLASSIC METAL TYPE	Drive Axle, 38.000~46.000 lbs. Tandem Dana Spicer, Eaton, Rockwell, Ford, Freightliner, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.

47695	4.767X6.326X1.420	SEAGULL CR PLUS RUBBER TYPE	Drive Axle, 38.000~46.000 lbs. Tandem Dana Spicer, Eaton, Rockwell, Ford, Freightliner, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
47697	4.766X6.316X1.125	SEAGULL CR CLASSIC METAL TYPE	Drive Axle, 38.000~46.000 lbs. Tandem Dana Spicer, Eaton, Rockwell, Ford, Freightliner, Mack, Kenworth, Navistar, Peterbilt, Volvo, Westem Star.
48000	4.766X6.259X1.047	SEAGULL CR CLASSIC METAL TYPE	Drive Axle, 38.000 lbs. Tandem Dana Spicer, Eaton, Rockwell, Mack.
48884	4.875X6.508X1.063	SEAGULL CR CLASSIC METAL TYPE	Mack, freightliner

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WHEEL BEARING KITS

KIT NO	CONTENTS	APPLICATIONS
TRUCK 1	HM218248/10, HM212049/11, SEAL 46305	TRAILER AXLES
TRUCK 2	2 X HM518445/10, SEAL 42623	TRAILER AXLES
TRUCK 3	594A/592A, 580/572, SEAL 47697	DRIVE AXLES
TRUCK 4	HM212049/11, 3782/3720, SEAL 35066	STEER AXLES
TRUCK 5	33118, 33213, SEAL 145X170X13HT	TRAILER AXLES

UBC

TRUCK AND TRAILER TAPER

50KW01/3720	665A	30208	32021	33108	33281/33462
360A/362A	759/752	30209	32022	33109	37425/37625
368A/362A	2580/2523	30307	32215	33115	39585/39520
395A/394A	3384/3320	30309	32216	33116	47687/47620
462/453X	3780/3720	30310	32217	33118	47890/47820
497/493	3782/3720	30311	32218	33122	72200C/72487
558/552A	02474/02420	30312	32307	33207	72212C/72487
572	18590/18520	30313	32309	33208	HM212011
580	28580/28521	32212	32310	33210	HM212049
582	28584/28521	32213	32312	33211	HM218210
592A	28680/28622	32215	32313	33213	HM218248
594A	29586/29520	32216	33010	33215	H414249/10
598A	29586/29522	32217	33012	33217	HM518410
641/632	29685/29620	32019	33020	33220	HM518445
663/653	30207	32020	33021	33275/33462	TRA181504

UBC = SET

SET	UBC NO	SET	UBC NO	SET	UBC NO
SET1	LM11749/10	SET64	HM903249/10	SET403	594A/592A
SET2	LM11949/10	SET65	HM86647/10	SET404	598A/592A
SET3	M12649/10	SET67	HM88649/10	SET405	663/653
SET4	L44649/10	SET69	LM501349/14	SET406	3782/3720
SET5	LM48548/10	SET70	LM29749/10	SET407	29622/28682
SET6	LM67048/10	SET78	55200C/55437	SET408	39590/39520
SET8	L45449/10	SET81	HM88542/10	SET409	45220/45280
SET10	U399	SET82	LM104949/10	SET410	45220/45284
SET11	JL69349/10	SET96	25877A/25821	SET411	47686/47620
SET12	LM12749/10	SET100	HM89446/10	SET412	HM212047/11
SET13	L68149/10	SET104	L44642/10	SET413	HM212049/11
SET14	L44643/10	SET107	JLM104948/10	SET414	HM218248/10
SET15	07100S/07196	SET118	JLM506849/10	SET415	HM518445/10
SET16	LM12749/11	SET219	M88046/10	SET416	45220/45291
SET18	LM102949/11	SET222	HM88649/10	SET417	47820/47890
SET20	U399A	SET242	M88043/10	SET418	H715334/11
SET21	1988/1922	SET268	LM29749/11	SET419	H715343/11
SET27	LM67048/10BCE	SET280	U298	SET420	H715345/11
SET37	LM603049/11	SET284	U298H	SET421	HM516449A/10
SET38	LM104949/11	SET308	M84548/10	SET422	HM516449C/10
SET43	15123/15245	SET309	M86649/10	SET423	6420/6461A
SET45	LM501349/10	SET312	HM89449/10	SET424	552A/555S
SET47	LM102949/10	SET328	M802048/10	SET425	563/567
SET56	LM29748/10	SET401	580/572	SET426	47620/47679
SET63	M88048/10	SET402	582/572		

UBC – SEAGULL

EQUIVALENTS LIST

SEAGULL CLASSIC (TOOL FIT)	SEAGULL PLUS XL (HAND FIT)	SEAGULL EXTREME	SEAGULL NATIONAL	NATIONAL	STEMCO	SCOTSEAL CLASSIC	SCOTSEAL PLUS XL	SCOTSEAL LONGLIFE
1211		47697 EXTREME	370003A	370003A 380003A	309-0973 392-9131 393-0173 393-0273	1211KIT	47692 47695	---
1215		47697 EXTREME	370003A	370003A 380003A	309-0973 392-9131 393-0173 393-0273	1215KIT	47692 47695	---
1307			370047A	370047A	309-0935 392-9035	1307KIT	34384 34386	---
1308	38776		370023A	370023A 380023A	309-0912 309-0915 392-9099 393-0112 393-0212	1308KIT	38776 38779	---
				9773R	---	26373 26374		---
---	29480 (VITON)	---	370211A	370211A	383-0176	29480	---	---
34387	34384 34386	---	370047A	370047A	309-0935 392-9035	34387	34384 34386	---

35066	35058 35059	35066 EXTREME	370001A	370001A 380001A	308-0836 382-8036 383-0136 383-0236	35066 35103	35058 35059	35103
36285	---	---		370012A	380-8034	36285	---	---
38709	---	---		370033A	390-9010	38709 39988	39977 39979	---
38750	---	---	370024A	370024A	309-0915 392-9099 393-0115	38750	38748	---
38780	38776	38780 EXTREME	370023A	370023A 380023A	309-0912 392-9099 393-0112 393-0212	38780	38776 38779	38783
40136	---	---	370036A	370036A 380036A	307-0713 372-7098 373-0113 373-0213	40136	40129 40133	40147
42623	42622 42627	---	370065A 376590A	370065A 380065A 376590A	307-0723 373-7099 373-0123 373-0223	42623	42622 42627	42631
42624				370107A	372-7091 373-0191	42624	---	---
42672	---	---	370031A	370031A 380031A	309-0904 392-9112 393-0104 393-0204	42672	42671 42673	---
43764			370048A	370048A 380048A	308-0864 382-8064 383-0164 383-0264	43764	---	

			370019A	370019A	309-0965 392-9096	43860	43861	
45103	---	---		370131A 380131A	308-0856 382-8056 383-0156	45103	45095 45102	---
45160	---	---	370021A	370021A	309-0864 392-9088	45160	45157 45158	---
46305	46300 46304	46305 EXTREME	370025A	370025A 380025A	307-0743 372-7097 373-0143 373-0243	46305	46300	46308
46308	46300 46304	46305 EXTREME	370025A	370025A 380025A	307-0743 372-7097 373-0143 373-0243	46308	46304	
47697	47695	47697 EXTREME	370003A 370086A	370003A 380003A 370086A	309-0973 392-9131 393-0173 393-0273	47697	47695 47691 47692	47693
				370006A	309-0970 392-9087	47699	---	
48000	---	---	370005A	370005A	309-0960 392-9132	48000	48001 48002	---
48884	---	---		370121A	392-9001 392-9062	48884	---	---
			370069A	370069A	309-0948 392-9089 393-0148	52658	---	---
			370120A	370120A	390-9053 392-9053	55177	---	---

Technical Points on Seagull Truck Hub Seals

- All Seagull Truck Hub seals are produced with the superior **HNBR** (Hydrogenated Nitrile)
- All seals produced in OEM style but with **HNBR** lip materials
- Seagull “Classic” and “Plus” styles available
- All Truck hub seals supplied shrink wrapped and boxed in Seagull packaging
- Classic style Metal OD painted in special green “key lock” sealant/retainer
- Temperature range **-40** degrees Celsius to **+149** degree Celsius
- Exclusion Excellent
- Abrasion Resistance Excellent
- Suitable for use Oil / Grease
- Extended life Yes – Hydrogenated Nitrile material extended life
- Synthetic Fluid Compatibility Excellent
- Installation Tool Fit on “Classic” Style / hand fit for “Plus” style
- Surface Speed 5000 F.P.M Max (Standard NBR is rated at 2000 F.P.M Max)
- Pressure 2 psi
- Spindle Finish 100 microinches Max
- Spindle Hardness Rockwell C28
- Spindle Diameter Tolerances ± 0.003 ” up to 4.000”
- Spindle Diameter Tolerances ± 0.004 ” 4.001 to 6.000”
- Spindle Diameter Tolerances ± 0.005 ” 6.001 to 10.000”
- Bore Run out 0.015” (TIR) Max
- Spindle to Bore Misalignment 0.020” (TIR) Max
- Seal O.D. Tolerances ± 0.004 ”
- Bore Tolerances ± 0.0015 ” from 3.001 to 7.000”
- Bore Tolerances ± 0.002 ” 7.001 to 12.000”

Popular Hub Seals:

•Front P/N	35066
•Drive P/N	47697
•Trailer TN P/N	46305
•Trailer TP P/N	42623
•Trailer 20,000 # Axle	40136

Seagull “Classic”

This seal is a one piece design consisting of a **HNBR** sealing element that is assembled between a metal outer and inner case. This design has three **HNBR** sealing lips. Spring loaded primary sealing lip that is Pre lubricated, a dirt exclusion lip, and an outer lip that acts as a preliminary dirt excluder. The seal is press fit into the hub bore using installation tools. The Seagull “Classic” maintains a metal to metal contact between the seal O.D. and the hub bore surface as well as a metal to metal contact between the sealing element I.D and the spindle.

Seagull “Plus”

This seal is a rubber encapsulated type, one piece design. The Seagull Plus consists of four **HNBR** sealing lips, a spring loaded primary sealing lip with a special design that is factory pre lubricated, a radial and axial dirt lip, plus an outer lip that acts as a preliminary dirt excluder. The Seagull “Plus” requires no special installation tools and maintains a rubber to metal contact between the seal O.D. and the hub bore surface as well as a rubber to metal contact between the sealing element I.D and the spindle.



INCHES – MILLIMETERS



INCHES		0	1	2	3	4	5	6	7	8	9	10
FRACTION	DECIMAL	MILLIMETERS										
0	0.000000	0.000	25.400	50.800	76.200	101.600	127.000	152.400	177.800	203.200	228.600	254.000
1/64	0.015625	0.397	25.797	51.197	76.597	101.997	127.397	152.797	178.197	203.597	228.997	254.397
1/32	0.031250	0.794	26.194	51.594	76.994	102.394	127.794	153.194	178.594	203.994	229.394	254.794
3/64	0.046875	1.191	26.591	51.991	77.391	102.791	128.191	153.591	178.991	204.391	229.791	255.191
1/16	0.062500	1.588	26.988	52.388	77.788	103.188	128.588	153.988	179.388	204.788	230.188	255.588
5/64	0.078125	1.984	27.384	52.784	78.184	103.584	128.984	154.384	179.784	205.184	230.584	255.984
3/32	0.093750	2.381	27.781	53.181	78.581	103.981	129.381	154.781	180.181	205.581	230.981	256.381
7/64	0.109375	2.778	28.178	53.578	78.978	104.378	129.778	155.178	180.578	205.978	231.378	256.778
1/8	0.125000	3.175	28.575	53.975	79.375	104.775	130.175	155.575	180.975	206.375	231.775	257.175
9/64	0.140625	3.572	28.973	54.372	79.772	105.172	130.572	155.972	181.372	206.772	232.172	257.572
5/32	0.156250	3.969	29.369	54.769	80.169	105.569	130.969	156.369	181.769	207.169	232.569	257.969
11/64	0.171875	4.366	29.766	55.166	80.566	105.966	131.366	156.766	182.166	207.566	232.966	258.366
3/16	0.187500	4.762	30.163	55.563	80.963	106.363	131.763	157.163	182.563	207.963	233.363	258.763
13/64	0.203125	5.159	30.559	55.559	81.359	106.759	132.159	157.559	182.959	208.359	233.759	259.159
7/32	0.218750	5.556	30.956	56.356	81.756	107.156	132.556	157.956	183.356	208.756	234.156	259.556
15/64	0.234375	5.953	31.353	56.753	82.153	107.553	132.953	158.353	183.753	209.153	234.553	259.953
1/4	0.250000	6.350	31.750	57.150	82.550	107.950	133.350	158.750	184.150	209.550	234.950	260.360
17/64	0.265625	6.747	32.147	57.547	82.947	108.347	133.747	159.147	184.547	209.947	235.347	260.747
9/32	0.281250	7.144	32.544	57.944	83.344	108.744	134.144	159.544	184.944	210.344	235.744	261.144
19/64	0.296875	7.541	32.941	58.341	83.741	109.141	134.541	159.941	185.341	210.741	236.141	261.541
5/16	0.312500	7.938	33.338	58.738	84.138	109.538	134.938	160.338	185.738	211.138	236.538	261.938
21/64	0.328125	8.334	33.734	59.134	84.534	109.934	135.334	160.734	186.134	211.534	236.934	262.334
11/32	0.343750	8.731	34.131	59.531	84.931	110.331	135.731	161.131	186.531	211.931	237.331	262.731
23/64	0.359375	9.128	34.528	59.928	85.328	110.728	136.128	161.528	186.928	212.328	237.728	263.138
3/8	0.375000	9.525	34.925	60.325	85.725	111.125	136.525	161.925	187.325	212.725	238.125	263.525
25/64	0.390625	9.922	35.322	60.722	86.122	111.522	136.922	162.322	187.722	213.122	238.522	263.922
13/32	0.406250	10.319	35.719	61.119	86.519	111.919	137.319	162.719	188.119	213.519	238.919	264.319
27/64	0.421875	10.716	36.116	61.516	86.916	112.316	137.716	163.116	188.516	213.916	239.316	264.716
7/16	0.437500	11.113	36.513	61.913	87.313	112.713	138.113	163.513	188.913	214.313	239.713	265.113
29/64	0.453125	11.509	36.909	62.309	87.709	113.109	138.509	163.909	189.309	214.709	240.109	265.509
15/32	0.468750	11.906	37.306	62.706	88.106	113.506	138.906	164.306	189.706	215.106	240.506	265.906
31/32	0.484375	12.303	37.703	63.103	88.503	113.903	139.303	164.703	190.103	215.503	240.903	266.303
1/2	0.500000	12.700	38.100	63.500	88.900	114.300	139.700	165.100	190.500	215.900	241.300	266.700
33/64	0.515625	13.097	38.497	63.897	89.297	114.697	140.097	165.495	190.897	216.297	241.697	267.097
17/32	0.531250	13.494	38.894	64.294	89.694	115.094	140.494	165.894	191.294	216.694	242.094	267.494
35/64	0.546875	13.891	39.291	64.691	90.091	115.491	140.891	166.291	191.691	217.091	242.491	267.891
9/16	0.562500	14.288	39.688	65.088	90.488	115.888	141.288	166.688	192.088	217.488	242.888	268.288
37/64	0.578125	14.684	40.084	65.484	90.884	116.284	141.684	167.084	192.484	217.884	243.284	268.684
19/32	0.593750	15.081	40.481	65.881	91.281	116.681	142.081	167.481	192.881	218.281	243.681	269.081
39/64	0.609375	15.478	40.878	66.278	91.678	117.078	142.478	167.878	193.278	218.678	244.078	269.478
5/8	0.625000	15.875	41.275	66.675	92.075	117.475	142.875	168.275	193.675	219.075	244.475	269.875
41/64	0.640625	16.272	41.672	67.072	92.472	117.872	143.272	168.672	194.072	219.472	244.872	270.272
21/32	0.656250	16.669	42.069	67.469	92.869	118.269	143.669	169.069	194.469	219.869	245.269	270.669
43/64	0.671875	17.066	42.466	67.866	93.266	118.666	144.066	169.466	194.866	220.266	245.666	271.066
11/16	0.687500	17.463	42.863	68.263	93.663	119.063	144.463	169.863	195.263	220.663	246.063	271.463
45/64	0.703125	17.859	43.259	68.659	94.059	119.459	144.859	170.259	195.659	221.059	246.459	271.859
23/32	0.718750	18.256	43.656	69.056	94.456	119.856	145.256	170.656	196.056	221.456	246.856	272.256
47/64	0.734375	18.653	44.053	69.453	94.853	120.253	145.653	171.053	196.453	221.853	247.253	272.653
3/4	0.750000	19.050	44.450	69.850	95.250	120.650	146.050	171.450	196.850	222.250	247.650	273.050
49/64	0.765625	19.447	44.847	70.247	95.647	121.047	146.447	171.847	197.247	222.647	248.047	273.447
25/32	0.781250	19.844	45.244	70.644	96.044	121.444	146.844	172.244	197.644	223.044	248.444	273.844
51/64	0.796875	20.241	45.641	71.041	96.441	121.841	147.241	172.641	198.041	223.441	248.841	274.241
13/16	0.812500	20.638	46.038	71.438	96.838	122.238	147.638	173.038	198.438	223.838	249.238	274.638
53/64	0.828125	21.034	46.434	71.834	97.234	122.634	148.034	173.434	198.834	224.234	249.634	275.034
27/32	0.843750	21.431	46.831	72.231	97.631	123.031	148.431	173.831	199.231	224.631	250.031	275.431
55/64	0.859375	21.828	47.228	72.628	98.028	123.428	148.828	174.228	199.628	225.028	250.428	275.828
7/8	0.875000	22.225	47.625	73.025	98.425	123.825	149.225	174.625	200.025	225.425	250.825	276.225
57/64	0.890625	22.622	48.022	73.422	98.822	124.222	149.622	175.022	200.422	225.822	251.222	276.622
29/32	0.906250	23.019	48.419	73.819	99.219	124.619	150.019	175.419	200.819	226.219	251.619	277.019
59/64	0.921875	23.416	48.816	74.216	99.616	125.016	150.416	175.816	201.216	226.616	252.016	277.416
15/16	0.937500	23.813	49.213	74.613	100.013	125.413	150.813	176.213	201.613	227.013	252.413	277.813
61/64	0.953125	24.209	49.609	75.009	100.409	125.809	151.209	176.609	202.009	227.409	252.809	278.209
31/32	0.968750	24.606	50.006	75.406	100.806	126.206	151.606	177.006	202.406	227.806	253.206	278.606
63/64	0.984375	25.003	50.403	75.803	101.203	126.603	152.003	177.403	202.803	228.203	253.603	279.003



MILLIMETERS - - INCHES



MM	0	10	20	30	40	50	60	70	80	90
0	0.00000	0.39370	0.78740	1.18110	1.57480	1.96850	2.36220	2.75591	3.14961	3.54331
1	0.03937	0.43307	0.82677	1.22047	1.61417	2.00787	2.40157	2.79528	3.18898	3.58268
2	0.07874	0.47244	0.86614	1.25984	1.65354	2.04724	2.44094	2.83465	3.22835	3.62205
3	0.11811	0.51181	0.90551	1.29921	1.69291	2.08661	2.48031	2.87402	3.26772	3.66142
4	0.15748	0.55118	0.94488	1.33858	1.73228	2.12598	2.51969	2.91339	3.30709	3.70079
5	0.19685	0.59055	0.98425	1.37795	1.77165	2.16535	2.55906	2.95276	3.34646	3.74016
6	0.23622	0.62992	1.02362	1.41732	1.81102	2.20472	2.59843	2.99213	3.38583	3.77953
7	0.27559	0.66929	1.06299	1.45669	1.85039	2.24409	2.63780	3.03150	3.42520	3.81890
8	0.31496	0.70866	1.10236	1.49606	1.88976	2.28346	2.67717	3.07087	3.46457	3.85827
9	0.35433	0.74803	1.14173	1.53543	1.92913	2.32283	2.71653	3.11024	3.50394	3.89764

MM	INCH	MM	INCH	MM	INCH
0.001	0.000039	0.01	0.000393	0.1	0.003937
0.002	0.000079	0.02	0.000787	0.2	0.007874
0.003	0.000118	0.03	0.001811	0.3	0.011811
0.004	0.000157	0.04	0.001575	0.4	0.015748
0.005	0.000197	0.05	0.001969	0.5	0.019685
0.006	0.000236	0.06	0.002362	0.6	0.023622
0.007	0.000276	0.07	0.002756	0.7	0.027559
0.008	0.000315	0.08	0.003150	0.8	0.031496
0.009	0.000354	0.09	0.003543	0.9	0.035433

MM	100	150	200	250	300	350
0	3.93701	5.90551	7.87402	9.84252	11.8110	13.7795
5	4.13386	6.10236	8.07087	10.0394	12.0079	13.9764
10	4.33071	6.29921	8.26772	10.2362	12.2047	14.1732
15	4.52756	6.49606	8.46457	10.4331	12.4016	14.3701
20	4.72441	6.69291	8.66142	10.6299	12.5984	14.5669
25	4.92126	6.88976	8.85827	10.8268	12.7953	14.7638
30	5.11811	7.09661	9.05512	11.0236	12.9921	14.9606
35	5.31496	7.28346	9.25197	11.2205	13.1890	15.1575
40	5.51181	7.48031	9.44882	11.4137	13.3858	15.3543
45	5.70866	7.67716	9.64567	11.6142	13.5827	15.5512

