

Service Manual

MONTERO

1983

FOREWORD

This Service Manual has been prepared with the latest service information available at the time of publication. It is subdivided into various group categories and each section contains diagnosis, disassembly, repair, and installation procedures along with complete specifications and tightening references. Use of this manual will aid in properly performing any servicing necessary to maintain or restore the high levels of performance and reliability designed into these outstanding vehicles.



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GROUP INDEX

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INTRODUCTION

This publication contains the essential removal, installation, adjustment and maintenance procedures for servicing all Body Styles. This information is current as of time of publication.

INDEX

The preceding page contains a table of contents which lists the group number, group title and symbol of each group. The symbol is also located at the left or right top of each page.

GROUP INDEX

The first page in each group has an index to the subjects included in that group.

PAGE NUMBERS

All page numbers consist of two sets of digits separated by a dash. The digits preceding the dash identify the number of the group. The digits following the dash represent the consecutive page number within the group. The page numbers can be found on the lower left or right of each page.

TEXT

1. This manual contains essential procedures for removal, disassembly, inspection, reassembly and installation. For reassembly and installation, reverse the order of disassembly and removal procedures respectively, paying attention to the key points.
2. Unless otherwise specified, each service procedure covers all models. Procedures covering specific models are identified by the model codes, destination or similar designation. A description of these designations is covered in this unit under "VEHICLE IDENTIFICATION".

ILLUSTRATIONS

Illustrations are placed abreast the text. If two or more texts are paired with one illustration, the illustration number at lower right corner of the illustration is given in () at the end of the more pertinent text for reference.

DEFINITION OF TERMS

Standard Dimensions or Values

Design dimensions or values or finished dimensions after adjustment of part.

Service Limit

The allowable limitation of wear, bends, deformation or other damage which restricts the use of parts due to poor performance or insufficient strength.

Repair Limit

The limitation of wear, deterioration or functional decline of parts at which correction or adjustment is required to maintain their performance in use.

Section title

Symbol

VICE-DRIVE SHAFT

11Y104

grease

l then grease

11S626

a new

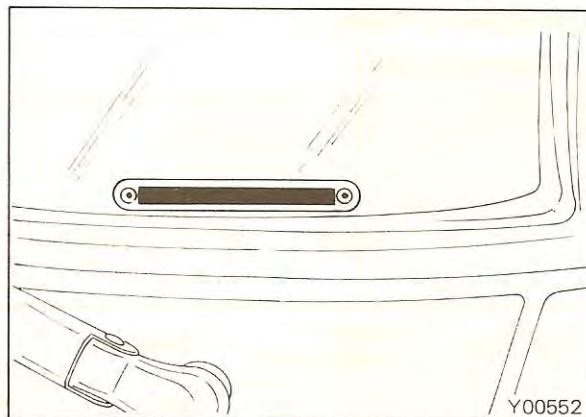
2-47 Page number

VEHICLE IDENTIFICATION



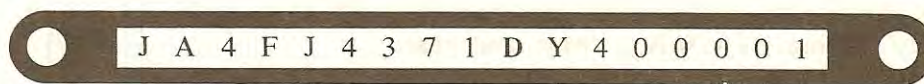
VEHICLE IDENTIFICATION NUMBER PLATE LOCATION

The vehicle identification number (V.I.N.) plate is located on the left top side of the instrument panel and it is visible through the windshield.



VEHICLE IDENTIFICATION NUMBER CODE CHART

All vehicle identification numbers contain 17 digits. The vehicle number is a code which tells sales channel, vehicle line, trim code, body type, engine displacement, etc.



1st digit	2nd digit	3rd digit	4th digit	5th digit	6th digit	7th digit	8th digit	9th digit	10th digit	11th digit	12th digit	13th thru 17th digit
Manufacturing country	Sales channel	Vehicle type		Vehicle line	Trim code	Body type	Engine displacement	Check digit	Model year	Assembly plant	Transmission code	Sequence number
J- Japan	A- Mitsubishi	4- Multi-purpose vehicle (MPV)	F- 4001 lbs. or more with hydraulic brakes	J- MONTERO	4- High	3- 2-door metal top	7- 2.6 liters (155.9 C.I.D.)	0 1 2 3 . . . 9 X	D- 1983 year	Y- Ohye	4- 5-speed 49 states	00001 to 99999

NOTE Digit in position 9 is used for V.I.N. verification.

VEHICLE IDENTIFICATION NUMBER LIST

V. I. N. (except sequence number)	Brand (Package)	Destination	Engine displacement	Model code
JA4FJ437□DY4	MONTERO	Federal	2.555 liters (155.9 C. I. D.)	L042GVNJLF



VEHICLE IDENTIFICATION

CHASSIS NUMBER

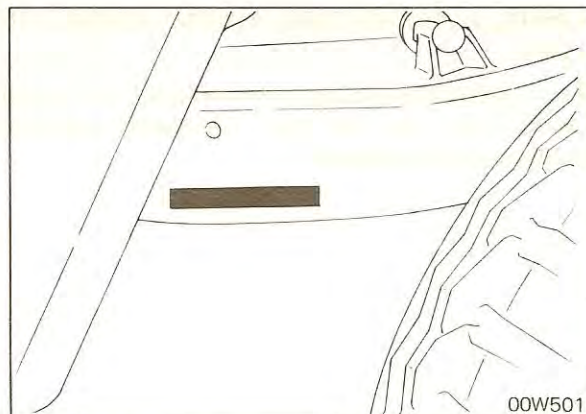
Stamping Location

The chassis number is stamped on the side of the frame near the right rear shock absorber.

Chassis Number Code Chart

L 0 4 2 G V D Y 4 0 0 0 0 1

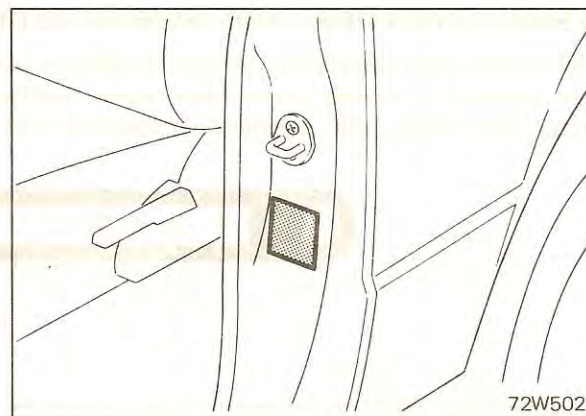
Vehicle line	Engine displacement	Body type	Refer to 10th thru 17th digits of V.I.N. plate
L04-MONTERO	2-2.555 liters (155.9 C.I.D.)	GV-2-door metal top	



VEHICLE SAFETY CERTIFICATION LABEL

The vehicle safety certification label is attached to face of left door pillar. (72W502)

This label indicates the month and year of manufacture, Gross Vehicle Weight Rating (G.V.W.R.), front and rear Gross Axle Weight Rating (G.A.W.R.), and Vehicle Identification Number (V.I.N.).



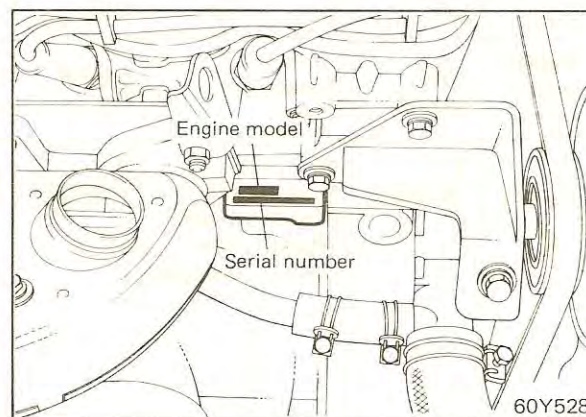
ENGINE MODEL STAMPING

The engine model number is stamped at the right front side on the top edge of the cylinder block as shown in the following:

Engine model	Engine displacement
G54B	2.555 liters (155.9 C.I.D.)

The engine serial number is stamped near the engine model number, and the serial number cycles, as shown below.

Engine serial number	Number cycling
AA0201 to YY9999	AA0201 - - - - -> AA9999
	AB0001 - - - - -> AY9999
	BA0001 - - - - -> YY9999



VEHICLE IDENTIFICATION



ENGINE AND TRANSMISSION MODEL

Vehicle model	Engine model	Transmission model
L042GVNJLF	G54B	KM145-O-THQ

BODY COLOR CODE

Exterior code	Body color
Two-tone	
C88C90X13	Black/Brown (Metallic)
R79R78X13	Black/Red
W44W42X13	Black/White
X04X21H80	Velvet black/Silver (Metallic)



HOISTING

Post Type

Special care should be taken when raising the vehicle on a frame contact type hoist. The hoist must be equipped with the proper adapters in order to support the vehicle at the proper locations. (See next page)

Conventional hydraulic hoists may be used after determining that the adapter plates will make firm contact with the side frame.

Floor Jack

A regular floor jack may be used under the front cross-member or rear axle housing.

Caution

1. A floor jack must never be used on any part of the underbody.
2. Do not attempt to raise one entire side of the vehicle by placing a jack midway between front and rear wheels. This practice may result in permanent damage to the body.

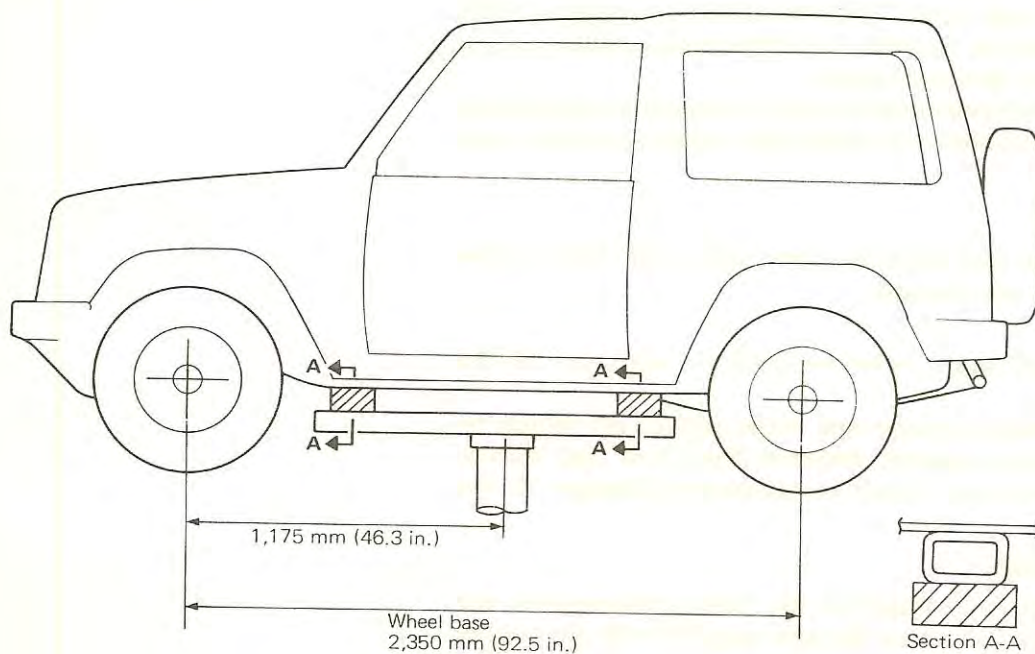
Emergency Jacking

Jack receptacles are located at the front crossmember and rear axle housing to accept the jack supplied with the vehicle for emergency road service. Always block the opposite wheels and jack only on a level surface.



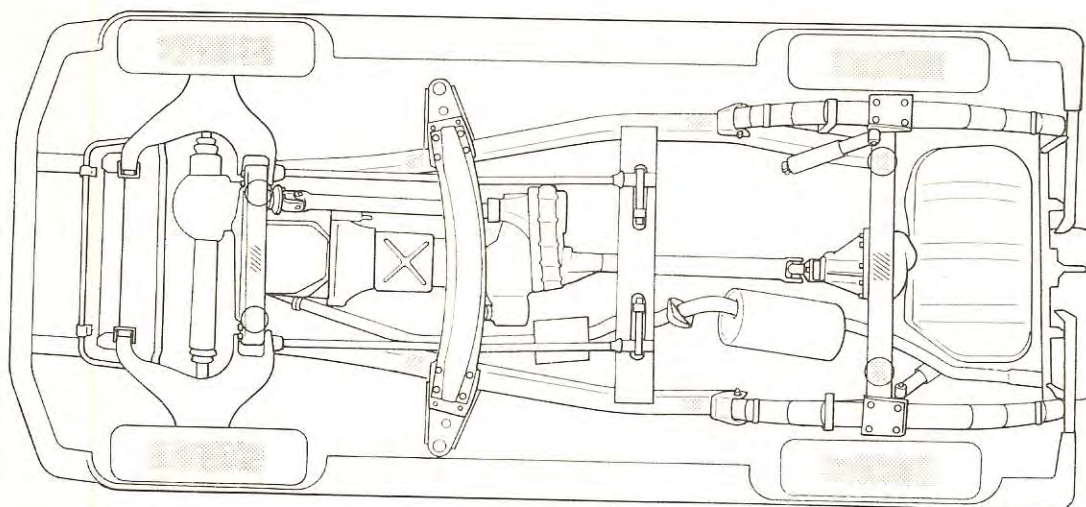
TOWING AND HOISTING




Frame Contact Support Locations



00W553

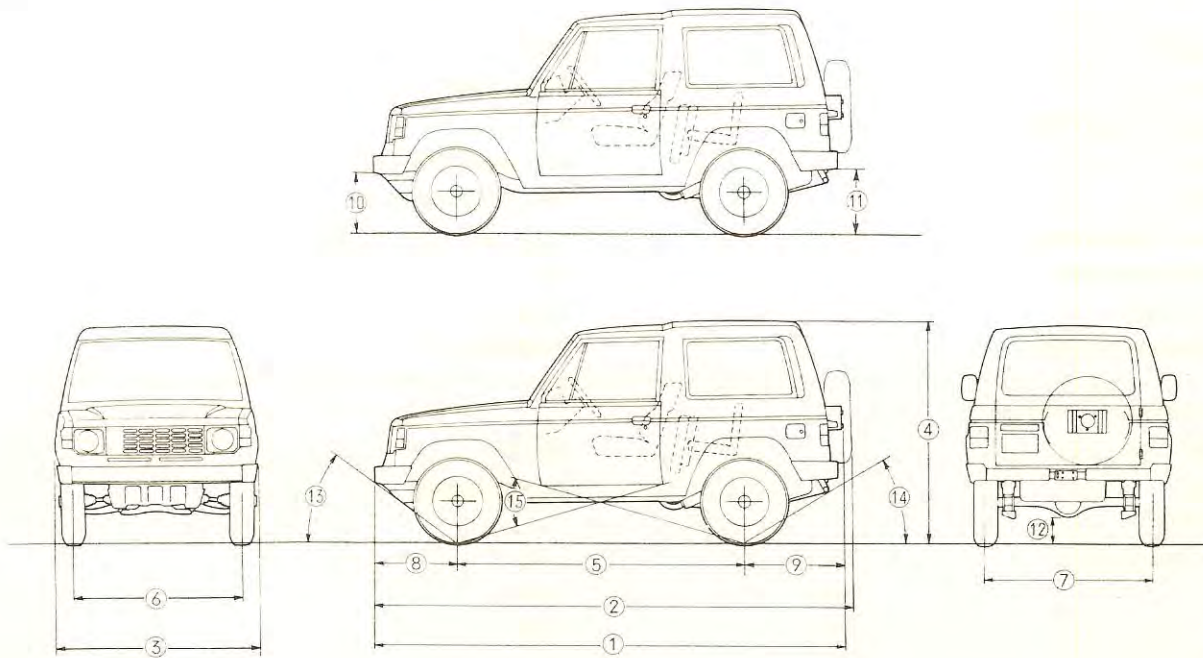
Lifting and Jacking Support Locations



-  Twin post hoist
-  Floor jack
-  Frame contact or jack (jack supplied with the vehicle) on hoist

00W554

GENERAL DATA AND SPECIFICATIONS



00W556

Vehicle dimensions		mm (in.)	
Overall length	Without spare tire	①	3,930 (154.7)
	With spare tire	②	3,995 (157.3)
Overall width		③	1,680 (66.1)
Overall height		④	1,800 (70.9)
Wheelbase		⑤	2,350 (92.5)
Tread	Front	⑥	1,400 (55.1)
	Rear	⑦	1,375 (54.1)
Overhang	Front	⑧	745 (29.3)
	Rear	⑨	900 (35.4)
Height at curb weight (wt.)			
	Front bumper to ground	⑩	480 (18.9)
	Rear bumper to ground	⑪	440 (17.3)
	Minimum running ground clearance	⑫	210 (8.3)
	Angle of approach	⑬	38°
	Angle of departure	⑭	30°
	Ramp breakover angle	⑮	21°

Vehicle weights		kg (lbs.)
	Curb weight	1,433 (3,160)
	Gross vehicle weight rating	1,910 (4,210)
Gross axle weight rating	Front	1,000 (2,205)
	Rear	1,450 (3,197)

Seating capacity 4



GENERAL DATA AND SPECIFICATIONS

Engine

Model No.	G54B
Type	In-line OHC
Number of cylinders	4
Bore	91.1 mm (3.59 in.)
Stroke	98.0 mm (3.86 in.)
Piston displacement	2,555 cm ³ (155.9 CID)
Compression ratio	8.2
Firing order	1-3-4-2
Basic ignition timing	7° BTDC ± 2°

Transmission & transfer case

Model No.	KM145
Type	5-speed manual
Gear ratio	
Transmission	
1st	3.740
2nd	2.136
3rd	1.360
4th	1.000
5th	0.856
Reverse	3.578
Transfer case	
High	1.000
Low	1.944
Final ring gear ratio	4.625

Clutch

Type	Dry single disc & diaphragm spring
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Chassis

Tire size	215SR15
Front suspension	
Type	Wishbone compression type
Spring constant (Wheel position)	22 N/mm (123 lbs./in.)
Rear suspension	
Type	Asymmetrical semi-elliptic leaf spring
Spring constant	
At load of 1,000-2,500 N (220-551 lbs.)	24 N/mm (134 lbs./in.)
At load of 4,670-8,870 N (1,030-1,955 lbs.)	56 N/mm (314 lbs./in.)
Brakes	
Type	
Front	Disc
Rear	Drum
	(Leading and trailing)
Power steering	
Gear type	Integral type (Recirculating ball nut)
Gear ratio	16.4
Fuel tank capacity	60 liters (15.9 U.S. gal./13.2 Imp.gal.)

CONVERSION TABLE



CAPACITY CONVERSION TABLE

U.S. gal.	Imperial gal.	U.S. gal.	Imperial gal.	U.S. gal.	Imperial gal.
1/4	1/5	7	5-3/4	15	12-1/2
1/2	3/8	7-1/4	6	15-1/2	13
3/4	5/8	7-1/2	6-1/4	16	13-1/4
		7-3/4	6-1/2	16-1/2	13-3/4
1	3/4			16-3/4	14
1-1/4	1	8	6-3/4		
1-1/2	1-1/4	8-1/4	6-3/4	17	14-1/4
1-3/4	1-1/2	8-1/2	7	17-1/2	14-1/2
		8-3/4	7-1/4	18	15
2	1-3/4	9	7-1/2	18-1/2	15-1/2
2-1/4	1-3/4	9-1/4	7-3/4	19	15-3/4
2-1/2	2	9-1/2	8	19-1/2	16-1/4
2-3/4	2-1/4	9-3/4	8	20	16-3/4
				20-1/2	17
3	2-1/2	10	8-1/4		
3-1/4	2-3/4	10-1/4	8-1/2	21	17-1/2
3-1/2	3	10-1/2	8-3/4	21-1/2	18
3-3/4	3	10-3/4	9	22	18-1/4
				22-1/2	18-3/4
4	3-1/4	11	9-1/4	23	19-1/4
4-1/4	3-1/2	11-1/4	9-1/4	23-1/2	19-1/2
4-1/2	3-3/4	11-1/2	9-1/2	24	20
4-3/4	4	11-3/4	9-3/4	24-1/2	20-1/2
5	4-1/4	12	10	25	20-3/4
5-1/4	4-1/4	12-1/4	10-1/4	25-1/2	21-1/4
5-1/2	4-1/2	12-1/2	10-1/2	26	21-3/4
5-3/4	4-3/4	12-3/4	10-1/2	26-1/2	22
				27	22-1/2
6	5	13	10-3/4	27-1/2	23
6-1/4	5-1/4	13-1/2	11-1/4	28	23-1/4
6-1/2	5-1/2	14	11-3/4	29	24-1/4
6-3/4	5-1/2	14-1/2	12	30	25

CAPACITY CONVERSION U.S. GALLONS TO LITERS

Gallons	0	1	2	3	4	5	6	7	8	9
	Liters									
—	—	3.7854	7.5708	11.3560	15.1420	18.9270	22.7120	26.4980	30.2830	34.0690
10	37.854	41.640	45.425	49.210	52.996	56.781	60.567	64.352	68.137	71.923
20	75.708	79.494	83.279	87.064	90.850	94.635	98.421	102.210	105.990	109.781
30	113.56	117.35	121.13	124.92	128.70	132.49	136.27	140.06	143.85	147.63
40	151.42	155.20	158.99	162.77	166.56	170.34	174.13	177.91	181.70	185.49
50	189.27	193.06	196.84	200.63	204.41	208.20	211.98	215.77	219.55	223.34
60	227.12	230.91	234.70	238.48	242.27	246.05	249.84	253.62	257.41	261.19
70	264.98	268.76	272.55	276.33	280.12	283.91	287.69	291.48	295.26	299.05
80	302.83	306.62	310.40	314.19	317.97	321.76	325.55	329.33	333.12	336.90
90	340.69	344.47	348.26	352.04	355.83	359.61	363.40	367.18	370.97	374.76



CONVERSION TABLE

DIMENSION AND TEMPERATURE CONVERSION CHART

Inches		Millimeters		Inches to millimeters		Millimeters to inches		Fahrenheit & Celsius			
(fraction)	(decimals)			Inches	mm	mm	Inches	°F	°C	°C	°F
	1/64	.015625	.3969	.0001	.00254	0.001	.000039	-20	-28.9	-30	-22
	1/32	.03125	.7937	.0002	.00508	0.002	.000079	-15	-26.1	-28	-18.4
1/16	3/64	.046875	1.1906	.0003	.00762	0.003	.000118	-10	-23.3	-26	-14.8
		.0625	1.5875	.0004	.01016	0.004	.000157	-5	-20.6	-24	-11.2
	5/64	.078125	1.9844	.0005	.01270	0.005	.000197	0	-17.8	-22	-7.6
3/32		.09375	2.3812	.0006	.01524	0.006	.000236	1	-17.2	-20	-4
	7/64	.109375	2.7781	.0007	.01778	0.007	.000276	2	-16.7	-18	-0.4
1/8		.125	3.1750	.0008	.02032	0.008	.000315	3	-16.1	-16	3.2
	9/64	.140625	3.5719	.0009	.02286	0.009	.000354	4	-15.6	-14	6.8
5/32		.15625	3.9687	.001	.0254	0.01	.00039	5	-15.0	-12	10.4
	11/64	.171875	4.3656	.002	.0508	0.02	.00079	10	-12.2	-10	14
3/16		.1875	4.7625	.003	.0762	0.03	.00118	15	-9.4	-8	17.6
	13/64	.203125	5.1594	.004	.1016	0.04	.00157	20	-6.7	-6	21.2
7/32		.21875	5.5562	.005	.1270	0.05	.00197	25	-3.9	-4	24.8
	15/64	.234375	5.9531	.006	.1524	0.06	.00236	30	-1.1	-2	28.4
1/4		.25	6.3500	.007	.1778	0.07	.00276	35	1.7	0	32
	17/64	.265625	6.7469	.008	.2032	0.08	.00315	40	4.4	2	35.6
9/32		.28125	7.1437	.009	.2286	0.09	.00354	45	7.2	4	39.2
	19/64	.296875	7.5406	.01	.254	0.1	.00394	50	10.0	6	42.8
5/16		.3125	7.9375	.02	.508	0.2	.00787	55	12.8	8	46.4
	21/64	.328125	8.3344	.03	.762	0.3	.01181	60	15.6	10	50
11/32		.34375	8.7312	.04	1.016	0.4	.01575	65	18.3	12	53.6
	23/64	.359375	9.1281	.05	1.270	0.5	.01969	70	21.1	14	57.2
3/8		.375	9.5250	.06	1.524	0.6	.02362	75	23.9	16	60.8
	25/64	.390625	9.9219	.07	1.778	0.7	.02756	80	26.7	18	64.4
13/32		.40625	10.3187	.08	2.032	0.8	.03150	85	29.4	20	68
	27/64	.421875	10.7156	.09	2.286	0.9	.03543	90	32.2	22	71.6
7/16		.4375	11.1125	.1	2.54	1	.03937	95	35.0	24	75.2
	29/64	.453125	11.5094	.2	5.08	2	.07874	100	37.8	26	78.8
15/32		.46875	11.9062	.3	7.62	3	.11811	105	40.6	28	82.4
	31/64	.484375	12.3031	.4	10.16	4	.15748	110	43.3	30	86
1/2		.5	12.7000	.5	12.70	5	.19685	115	46.1	32	89.6
	33/64	.515625	13.0969	.6	15.24	6	.23622	120	48.9	34	93.2
17/32		.53125	13.4937	.7	17.78	7	.27559	125	51.7	36	96.8
	35/64	.546875	13.8906	.8	20.32	8	.31496	130	54.4	38	100.4
9/16		.5625	14.2875	.9	22.86	9	.35433	135	57.2	40	104
	37/64	.578125	14.6844	1	25.4	10	.39370	140	60.0	42	107.6
19/32		.59375	15.0812	2	50.8	11	.43307	145	62.8	44	112.2
	39/64	.609375	15.4781	3	76.2	12	.47244	150	65.6	46	114.8
5/8		.625	15.8750	4	101.6	13	.51181	155	68.3	48	118.4
	41/64	.640625	16.2719	5	127.0	14	.55118	160	71.1	50	122
21/32		.65625	16.6687	6	152.4	15	.59055	165	73.9	52	125.6
	43/64	.671875	17.0656	7	177.8	16	.62992	170	76.7	54	129.2
11/16		.6875	17.4625	8	203.2	17	.66929	175	79.4	56	132.8
	45/64	.703125	17.8594	9	228.6	18	.70866	180	82.2	58	136.4
23/32		.71875	18.2562	10	254.0	19	.74803	185	85.0	60	140
	47/64	.734375	18.6531	11	279.4	20	.78740	190	87.8	62	143.6
3/4		.75	19.0500	12	304.8	21	.82677	195	90.6	64	147.2
	49/64	.765625	19.4469	13	330.2	22	.86614	200	93.3	66	150.8
25/32		.78125	19.8437	14	355.6	23	.90551	205	96.1	68	154.4
	51/64	.796875	20.2406	15	381.0	24	.94488	210	98.9	70	158
13/16		.8125	20.6375	16	406.4	25	.98425	212	100.0	75	167
	53/64	.828125	21.0344	17	431.8	26	1.02362	215	101.7	80	176
27/32		.84375	21.4312	18	457.2	27	1.06299	220	104.4	85	185
	55/64	.859375	21.8281	19	482.6	28	1.10236	225	107.2	90	194
7/8		.875	22.2250	20	508.0	29	1.14173	230	110.0	95	203
	57/64	.890625	22.6219	21	533.4	30	1.18110	235	112.8	100	212
29/32		.90625	23.0187	22	558.8	31	1.22047	240	115.6	105	221
	59/64	.921875	23.4156	23	584.2	32	1.25984	245	118.3	110	230
15/16		.9375	23.8125	24	609.6	33	1.29921	250	121.1	115	239
	61/64	.953125	24.2094	25	635.0	34	1.33858	255	123.9	120	248
31/32		.96875	24.6062	26	660.4	35	1.37795	260	126.6	125	257
	63/64	.984375	25.0031	27	690.6	36	1.41732	265	129.4	130	266

CONVERSION TABLE



ENGLISH AND SI METRIC MEASURE

Cubic Centimeters to Inches:

When changing cubic centimeters to cubic inches, multiply cubic centimeters times .061 to obtain cubic inches, (C.C. \times .061 = Cubic Inches).

Cubic Inches to Centimeters:

When changing cubic inches to cubic centimeters, multiply cubic inches times 16.39 to obtain cubic centimeters, (Cubic Inches \times 16.39 = C.C.).

Liters to Cubic Inches:

When changing liters to cubic inches, multiply liters times 61.02 to obtain cubic inches, (Liters \times 61.02 = Cubic Inches).

Cubic Inches to Liters:

When changing cubic inches to liters, multiply cubic inches times .01639 to obtain liters, (Cubic Inches \times .01639 = Liters).

Cubic Centimeters to Liters:

When changing cubic centimeters to liters, divide by 1,000 simply by moving the decimal point three figures to the left.

Liters to Cubic Centimeters:

When changing liters to cubic centimeters, move the decimal point three figures to the right.

Miles to Kilometers:

When changing miles to kilometers, multiply miles times 1.609 to obtain kilometers, (Miles \times 1.609 = Kilometers).

Kilometers to Miles:

When changing kilometers to miles, multiply kilometers times .6214 to obtain miles, (Kilometers \times .6214 = Miles).

Pounds to Kilograms:

When changing pounds to kilograms, multiply pounds times .4536 to obtain kilograms, (Pounds \times .4536 = Kilograms).

Kilograms to Pounds:

When changing kilograms to pounds, multiply kilograms times 2.2046 to obtain pounds, (Kilograms \times 2.2046 = Pounds).

Pounds to Newtons:

When changing pounds to newtons, multiply pounds times 4.4482 to obtain newtons, (Pounds \times 4.4482 = Newtons).

Newtons to Pounds:

When changing newtons to pounds, multiply newtons times .2248 to obtain pounds, (Newtons \times .2248 = Pounds).

Foot-pounds to Newton-meters:

When changing foot-pounds to newton-meters, multiply foot-pound times 1.3558 to newton-meters, (Foot-pound \times 1.3558 = Newton-meters).

Newton-meters to Foot-pounds:

When changing newton-meters to foot-pounds, multiply newton-meters times .7376 to foot-pounds, (Newton-meters \times .7376 = Foot-pounds).

Pounds Per Square Inch(psi) to Kilopascals:

When changing pounds per square inch(psi) to kilopascals, multiply pounds per square inch times 6.895 to kilopascals, (Pounds Per Square Inch(psi) \times 6.895 = Kilopascals.).

Kilopascals to Pounds Per Square Inch(psi):

When changing kilopascals to pounds per square inch(psi), multiply kilopascals times .1450 to pounds per square inch(psi), (Kilopascals \times .1450 = Pounds Per Square Inch(psi)).



TIGHTENING TORQUE

Description	Torque Nm (ft. lbs.)				Remarks
Thread for general purposes (size x pitch) (mm)	Head mark 4		Head mark 7		
6 x 1.0	3.0 to 3.9	(2.2 to 2.9)	4.9 to 7.8	(3.6 to 5.8)	
8 x 1.25	7.9 to 12	(5.8 to 8.7)	13 to 19	(9.4 to 14)	
10 x 1.25	16 to 23	(12 to 17)	27 to 39	(20 to 29)	
12 x 1.25	29 to 43	(21 to 32)	47 to 72	(35 to 53)	
14 x 1.5	48 to 70	(35 to 52)	77 to 110	(57 to 85)	
16 x 1.5	67 to 100	(51 to 77)	130 to 160	(90 to 120)	
18 x 1.5	100 to 150	(74 to 110)	180 to 230	(130 to 170)	
20 x 1.5	150 to 190	(110 to 140)	160 to 320	(190 to 240)	
22 x 1.5	200 to 260	(150 to 190)	340 to 430	(250 to 320)	
24 x 1.5	260 to 320	(190 to 240)	420 to 550	(310 to 410)	
Taper thread for pipes (size)					
PT 1/8	7.9 to 12		(5.8 to 8.7)		Internal thread: Aluminum
	16 to 19		(12 to 14)		Internal thread: Cast iron
PT 1/4	19 to 30		(14 to 22)		Internal thread: Aluminum
	34 to 45		(25 to 33)		Internal thread: Cast iron
PT 3/8	39 to 54		(29 to 40)		Internal thread: Aluminum
	58 to 73		(43 to 54)		Internal thread: Cast iron
Taper thread for dry sealed pipes (size)					
NPTF 1/16	4.9 to 7.8		(3.6 to 5.8)		Internal thread: Aluminum
	7.9 to 12		(5.8 to 8.7)		Internal thread: Cast iron
NPTF 1/8	7.9 to 12		(5.8 to 8.7)		Internal thread: Aluminum
	16 to 19		(12 to 14)		Internal thread: Cast iron
NPTF 1/4	19 to 30		(14 to 22)		Internal thread: Aluminum
	34 to 45		(25 to 33)		Internal thread: Cast iron