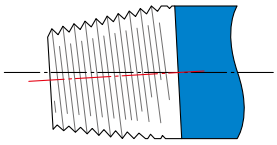
TECHNICAL INFORMATION

Asada

Causes & solutions of defective threads

Some of these defective threads may happen while threading

1 Single–sided threads



Sign

Un–centered and one side uncompleted thread.

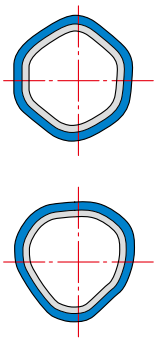
Cause

Un–right-angled cutting surface cut by like a grinding machines.

Solution

Make cut surface right angle using band saw

2 Mult–angled threads



Sign

Cutting surface of pipe is deformed to multi-angle.

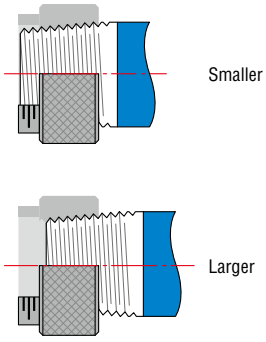
Cause

Slanted or ridged cut surface, past life of dies, insufficient or wrong quality of oil.

Soulution

Make cut surface right angle using band saw. Check condition of dies or oil.

3 Defective diameter of threads



Sign

Effective diameter of thread is larger or smaller than standard.

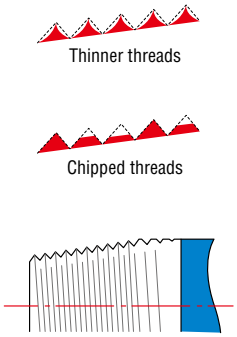
Cause

Wrong adjustment to the position of threading diameter of die–head

Solution

Check the diameter with threading gauge before threading in order to adjust the position of threading diameter of die–head.

4 Deformation of threads



Sign

Thinner threads and Chipped threads.

Cause

Welded, worn or chipped dies, un–centered chucking, undesirable threading oil.

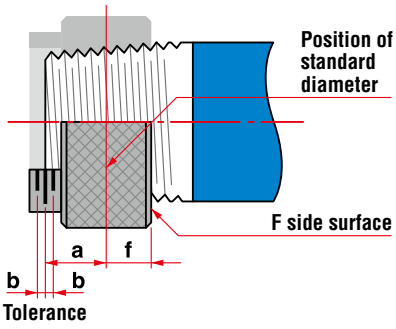
Solution

Replace dies, oil and adjust, maintenance and check the machine.

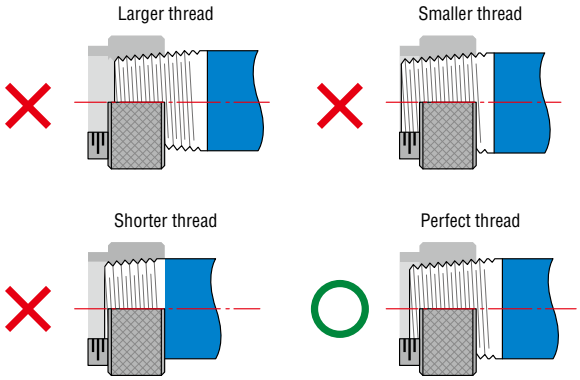
How to check threads by Taper Tread Gause

It should be inspected before starting operation or having dies replaced to make sure that perfect threads are made. Please, manually put gauge on thread to the end and judge its perfection or imporfection by the position of pipe edge.

Taper Gauge of JIS B0203



a : Standard length from the edge of pipe
b : Acceptable space from the edge of pipe
f : The length of thr effective part of thread that exceeds the position of standard diameter



The lenght of the effective part of thread, under condition of correct threading diameter is 0 or 2 tips from the F side surface.

※There is difference in the length of the effective part of thread among companies so that it is advised to let 2tips

Correct usage of power supply

Use correct voltage and enough capacity

1 In case of using generator

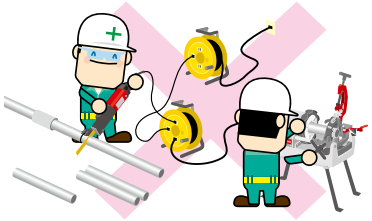
It is advised to use powerful generator of 2KVA, 2.5KVA, 3KVA or upper.

In particularly, using generator of over 3KVA for Beaver 50 & 80.

2 In case of using extension cord

Using thin extension cord causes voltage drop.

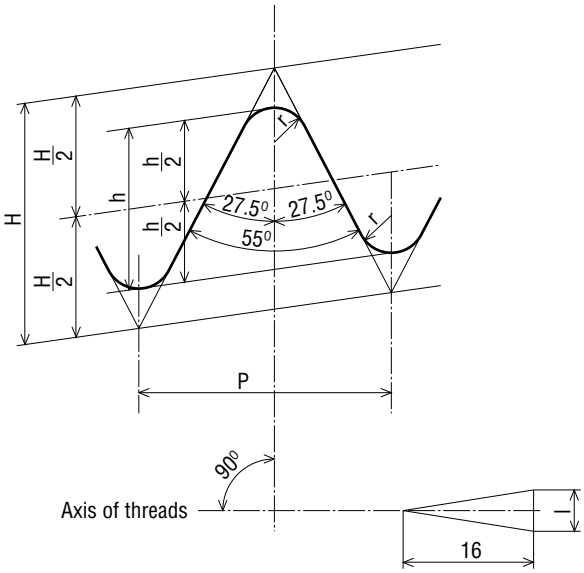
It is advised to use extension cor do of 2.0mm^2 or 3.5mm^2 thick of 3 core cabtyre cord to keep the voltage drop smaller.



Taper pipe threads (JIS B0203 : 1999) (BSPT)

Basic Thread Profile, Basic Dimensions and Tolerances

Basic profile applied for taper external and taper internal threads



Thick solid line shows the basic thread profile.

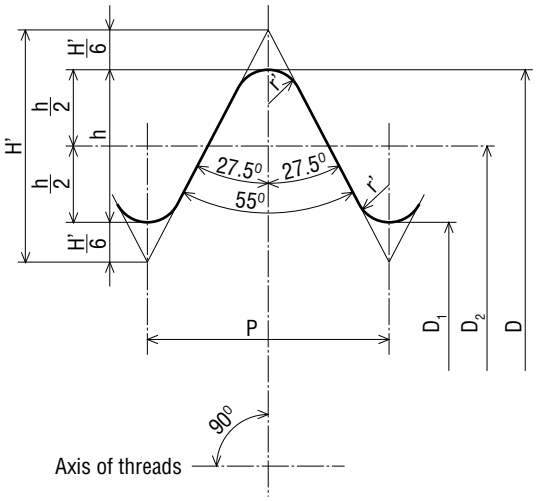
$P = \frac{25.4}{n}$

H=0.960 237 P

h=0.640 327 P

r=0.137 278 P

Basic profile applied fo rparallel internal threads



Thick solid line shows the basic thread profile.

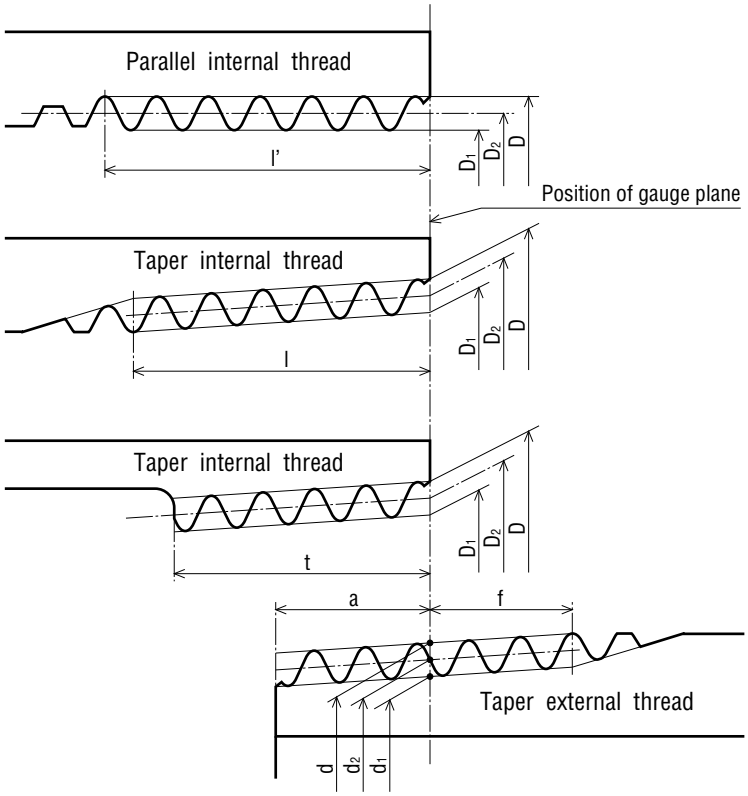
$P = \frac{25.4}{n}$

H=0.960 491 P

h=0.640 327 P

r=0.137 329 P

Fitting between taper external thread and taper internal or parallel internal thread



Asada

Taper pipe threads (JIS B0203) (BSPT)

Unit mm

Designation of thread size (※1)	Thread				Gauge Diameter			Position of Gauge plane			Tolerance on D, D2, and D1 of prallel internal thread	Lenght of effective thread (min.)				Size of carbon steel pipe for ordinary piping (reference)	
	Numbers of thread (in 25.4mm)	Pitch	Height of thread	Radius	External thread			External thread		Internal thread		External thread	Internal thread				
					Major dia.	Pitch dia.	Minor dia.	From pipe end		At pipe end		From position of gauge plane to larger dia. end	When there is incomplete thread part		When there is no incomplete thread part		
					Internal thread			Gauge Length	Axial tolerance	Axial tolerance			Taper internal thread	Parallel internal thread	Taper Internal thread, parallel internal thread		
					Major dia.	Pitch dia.	Minor dia.						From position of gauge plane to smaller dia. end	From end of pipe or coupler	From position of gauge or from end of pipe or coupler	Outside diameter	Thickness
	n	*P* (Informative)	*h*	*r* or *r'*	*D*	*D2*	*D1*	*a*	*±b*	*±c*		*f*	*l*	*l* (Informative)	*t*		
R1/16	28	0.9071	0.581	0.12	7.723	7.142	6.561	3.97	0.91	1.13	0.071	2.5	6.2	7.4	4.4	——	——
R1/8	28	0.9071	0.581	0.12	9.728	9.147	8.566	3.97	0.91	1.13	0.071	2.5	6.2	7.4	4.4	10.5	2.0
R1/4	19	1.3368	0.856	0.18	13.157	12.301	11.445	6.01	1.34	1.67	0.104	3.7	9.4	11.0	6.7	13.8	2.3
R3/8	19	1.3368	0.856	0.18	16.662	15.806	14.950	6.35	1.34	1.67	0.104	3.7	9.7	11.4	7.0	17.3	2.3
R1/2	14	1.8143	1.162	0.25	20.955	19.793	18.631	8.16	1.81	2.27	0.142	5.0	12.7	15.0	9.1	21.7	2.8
R3/4	14	1.8143	1.162	0.25	26.441	25.279	24.117	9.53	1.81	2.27	0.142	5.0	14.1	16.3	10.2	27.2	2.8
R1	11	2.3091	1.479	0.32	33.249	31.770	30.291	10.39	2.31	2.89	0.181	6.4	16.2	19.1	11.6	34.0	3.2
R11/4	11	2.3091	1.479	0.32	41.910	40.431	38.952	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	42.7	3.5
R11/2	11	2.3091	1.479	0.32	47.803	46.324	44.845	12.70	2.31	2.89	0.181	6.4	18.5	21.4	13.4	48.6	3.5
R2	11	2.3091	1.479	0.32	59.614	58.135	56.656	15.88	2.31	2.89	0.181	7.5	22.8	25.7	16.9	60.5	3.8
R21/2	11	2.3091	1.479	0.32	75.184	73.705	72.226	17.46	3.46	3.46	0.216	9.2	26.7	30.1	18.6	76.3	4.2
R3	11	2.3091	1.479	0.32	87.884	86.405	84.926	20.64	3.46	3.46	0.216	9.2	29.8	33.3	21.1	89.1	4.2
R4	11	2.3091	1.479	0.32	113.030	111.551	110.072	25.40	3.46	3.46	0.216	10.4	35.8	39.3	25.9	114.3	4.5
R5	11	2.3091	1.479	0.32	138.430	136.951	135.472	28.58	3.46	3.46	0.216	11.5	40.1	43.5	29.3	139.8	4.5
R6	11	2.3091	1.479	0.32	163.830	162.351	160.872	28.58	3.46	3.46	0.216	11.5	40.1	43.5	29.3	165.2	5.0

(※1) This designation is for taper external threads, and for taper internal threads and parallel internal threads, the notation R shall be substituted by Rc or Rp.

Remarks 1. The symbols for pipe threads (R, Rp and Rc) can be omitted if necessary.

2. Thread shall be measured at perpendicular to the axis and pitch shall be measured in parallel with the axis.

3. The length of useful thread is the length of completely screwed parts, except the last several threads which may be truncated at the crest by its intersction with the cylindrical surface of the pipe or coupler.

4. The chamfered end of the pipe or coupler, is included in the length of usuful thread part.

Steel Pipe (JIS G3452・3454)

Type of steel pipe		Steel Galvanized Pipe (SGP)		Steel Tube Pipe General (STPG)						
Nominal Size		O/D (mm)	Thickness (mm)	O/D (mm)	Schedule 10	20	30	40	60	80
(A)	(B)									
6	1/8	10.5	2.0	10.5				1.7	2.2	2.4
8	1/4	13.8	2.3	13.8				2.2	2.4	3.0
10	3/8	17.3	2.3	17.3				2.3	2.8	3.2
15	1/2	21.7	2.8	21.7				2.8	3.2	3.7
20	3/4	27.2	2.8	27.2				2.9	3.4	3.9
25	1	34.0	3.2	34.0				3.4	3.9	4.5
32	1 1/4	42.7	3.5	42.7				3.6	4.5	4.9
40	1 1/2	48.6	3.5	48.6				3.7	4.5	5.1
50	2	60.5	3.8	60.5		3.2		3.9	4.9	5.5
65	2 1/2	76.3	4.2	76.3		4.5		5.2	6.0	7.0
80	3	89.1	4.2	89.1		4.5		5.5	6.6	7.6
90	3 1/2	101.6	4.2	101.6		4.5		5.7	7.0	8.1
100	4	114.3	4.5	114.3		4.9		6.0	7.1	8.6
125	5	139.8	4.5	139.8		5.1		6.6	8.1	9.5
150	6	165.2	5.0	165.2		5.5		7.1	9.3	11.0
175	7	190.7	5.3	—		—		—	—	—
200	8	216.3	5.8	216.3		6.4	7.0	8.2	10.3	12.7
225	9	241.8	6.2	—		—	—	—	—	—
250	10	267.4	6.6	267.4		6.4	7.8	9.3	12.7	15.1
300	12	318.5	6.9	318.5		6.4	8.4	10.3	14.3	17.4
350	14	355.6	7.9	355.6	6.4	7.9	9.5	11.1	15.1	19.0
400	16	406.4	7.9	406.4	6.4	7.9	9.5	12.7	16.7	21.4
450	18	457.2	7.9	457.2	6.4	7.9	11.1	14.3	19.0	23.8
500	20	508.0	7.9	508.0	6.4	9.5	12.7	15.1	20.6	26.2
550	22	—	—	558.8	6.4	9.5	12.7	15.9	—	—
600	24	—	—	609.6	6.4	9.5	14.3	—	—	—
650	26	—	—	660.4	7.9	12.7	—	—	—	—

Stainless Steel Pipe (JIS G3459)

Nominal Size		O/D (mm)	Nominal thickness													
			Schedule 5S			Schedule 10S			Schedule 20S			Schedule 40			Schedule 80		
			Thickness (mm)	Weight (kg/m) Type		Thickness (mm)	Weight (kg/m) Type		Thickness (mm)	Weight (kg/m) Type		Thickness (mm)	Weight (kg/m) Type		Thickness (mm)	Weight (kg/m) Type	
A	B			304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H		304 304H 304L 321 321H	309 309S 310 310S 316 316H 316L 317 317L 347 347H
6	1/8	10.5	1.0	0.237	0.238	1.2	0.278	0.280	1.5	0.336	0.338	1.7	0.373	0.375	2.4	0.484	0.487
8	1/4	13.8	1.2	0.377	0.379	1.65	0.499	0.503	2.0	0.588	0.592	2.2	0.636	0.640	3.0	0.807	0.812
10	3/8	17.3	1.2	0.481	0.484	1.65	0.643	0.647	2.0	0.762	0.767	2.3	0.859	0.865	3.2	1.12	1.13
15	1/2	21.7	1.65	0.824	0.829	2.1	1.03	1.03	2.5	1.20	1.20	2.8	1.32	1.33	3.7	1.66	1.67
20	3/4	27.2	1.65	1.05	1.06	2.1	1.31	1.32	2.5	1.54	1.55	2.9	1.76	1.77	3.9	2.26	2.28
25	1	34.0	1.65	1.33	1.34	2.8	2.18	2.19	3.0	2.32	2.33	3.4	2.59	2.61	4.5	3.31	3.33
32	1 1/4	42.7	1.65	1.69	1.70	2.8	2.78	2.80	3.0	2.97	2.99	3.6	3.51	3.53	4.9	4.61	4.64
40	1 1/2	48.6	1.65	1.93	1.94	2.8	3.19	3.21	3.0	3.41	3.43	3.7	4.14	4.16	5.1	5.53	5.56
50	2	60.5	1.65	2.42	2.43	2.8	4.02	4.06	3.5	4.97	5.00	3.9	5.50	5.53	5.5	7.54	7.58
65	2 1/2	76.3	2.1	3.88	3.91	3.0	5.48	5.51	3.5	6.35	6.39	5.2	9.21	9.27	7.0	12.1	12.2
80	3	89.1	2.1	4.55	4.58	3.0	6.43	6.48	4.0	8.48	8.53	5.5	11.5	11.5	7.6	15.4	15.5
90	3 1/2	101.6	2.1	5.20	5.24	3.0	7.37	7.42	4.0	9.72	9.79	5.7	13.6	13.7	8.1	18.9	19.0
100	4	114.3	2.1	5.87	5.91	3.0	8.32	8.37	4.0	11.0	11.1	6.0	16.2	16.3	8.6	22.6	22.8
125	5	139.8	2.8	9.56	9.62	3.4	11.6	11.6	5.0	16.3	16.9	6.6	21.9	22.0	9.5	30.8	31.0
150	6	165.2	2.8	11.3	11.4	3.4	13.7	13.8	5.0	20.0	20.1	7.1	28.0	28.1	11.0	42.3	42.5
200	8	216.3	2.8	14.9	15.0	4.0	21.2	21.3	6.5	34.0	34.2	8.2	42.5	42.8	12.7	64.4	64.8
250	10	267.4	3.4	22.4	22.5	4.0	26.2	26.4	6.5	42.2	42.5	9.3	59.8	50.2	15.1	94.9	95.5
300	12	318.5	4.0	31.3	31.5	4.5	35.2	35.4	6.5	50.5	50.8	10.3	79.1	79.6	17.4	131	131
350	14	355.6	—	—	—	—	—	—	—	—	—	11.1	95.3	95.9	19.0	159	160
400	16	406.4	—	—	—	—	—	—	—	—	—	12.7	125	125	21.4	205	207
450	18	457.2	—	—	—	—	—	—	—	—	—	14.3	158	159	23.8	257	259
500	20	508.0	—	—	—	—	—	—	—	—	—	15.1	185	187	26.2	314	316
550	22	558.8	—	—	—	—	—	—	—	—	—	15.9	215	216	28.6	378	380
600	24	609.6	—	—	—	—	—	—	—	—	—	17.5	258	260	31.0	447	450
650	26	660.4	—	—	—	—	—	—	—	—	—	18.9	302	304	34.0	531	534