

GAGE FROM CHINA



TPCO



**中国石化
SINOPEC**

Xi'an Techray Precision Machinery Co.,Ltd is the top-level manufacturer of Tubing and Casing Thread Inspection Gages in China. Products inspect all required thread elements – Thread Lead, Thread Height, Thread Addendum, Thread Taper, Crest Diameter, Ovality, Thread Form– all with the precise accuracy required in today's demanding industry. TECHRAY thread inspection gages include not only API-5CT connections but also Premium connections which were widely used by **TPCO, BAOSTEEL, HENGYANG VALIN, SINOPEC, CNPC, CNOOC**, and many other Casing & Tubing manufacturers in China.

As the Sole Oversea Agent, **RICHSEN** is committed to providing Integral solutions for Thread Inspection of Casing/Tubing production to customers all over the world.

All Gages be calibrated by **TGRC.CNPC**. <http://tgrc.cnpc.com.cn>

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01-Lead Gage 螺距测量

The lead gage inspects both internal and external thread leads using contact points that seat in the threads of a part. 适用于测量各种油套管，管线管，钻具及特殊扣螺纹螺距偏差

→ELG(External Lead Gage) 外螺纹螺距测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ELG01	1"~20" TBG, UPTBG, CSG, BCSG	±0.2mm x 0.01mm
ELG02	TBG, UPTBG, CSG, NC, REG, FH, IF	±0.01in x 0.0005"

→ITH(Internal Lead Gage) 内螺纹螺距测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ILG01	1"~20" TBG, UPTBG, CSG, BCSG	±0.2mm x 0.01mm
ILG02	TBG, PTBG, CSG, NC, REG, FH, IF	±0.01in x 0.0005"

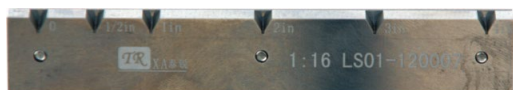
01-Lead Gage 螺距测量

The lead gage inspects both internal and external thread leads using contact points that seat in the threads of a part. 适用于测量各种油套管，管线管，钻具及特殊扣螺纹螺距偏差

→Lead Gage Setting Standards 螺距标准样板

lead gage setting standards are manufactured in accordance with API Specification 5B.

Lead gage standards are used to set the gage prior to the inspection.



LS01



LS04

Model 型号	Applicable Connection 适用管型螺纹	Range 量程范围
LS01	1:16, 8rd/in, 10rd/in	4"
LS02	1:6, 4rd/in	4"
LS03	1:4, 4rd/in 5rd/in	4"
LS04	1:16, 5rd/in($\leq 13\text{-}3/8\text{'BCSG}$)	4"
LS05	1:12, 5rd/in($\geq 16\text{'BCSG}$)	4"

Note: Non standard Lead Gage Setting standards can be customized according to demand

→PL(Contact Point for Lead Gage)螺距测量仪触头

The contact points produced by our factory are made of **chrome plated high-speed steel** or **tungsten carbide alloy**. Please specify when ordering. 本厂生产的触头分高工钢镀铬触头和碳化钨合金触头 2 种，订货时需加以说明

Model 型号	Point Diameter		Thread Per Inch	Applicable Products
	US Units	Imperial Units		
PL01	0.2357	5.987	3	SL-H90
PL02	0.202	5.131	3.5	H-90
PL03	0.144	3.658	4	API Rotary shoulder Drill Pipe
PL04	0.115	2.921	5	API Rotary shoulder Drill Pipe
PL05	0.096	2.438	6	API Rotary shoulder Drill Pipe
PL06	0.072	1.829	8	API Casing, Tubing, Line pipe
PL07	0.062	1.575	5	Buttress Casing
PL08	0.057	1.448	10	API Casing, Tubing, Line pipe
PL09	0.05	1.27	11.5	API Line Pipe

Note: Non-Standard contact point can be customized according to customer request.

备注：可按照用户要求生产各类非标触头

02-Thread Height Gage 螺纹高度测量仪 (齿高)

Used for inspecting Thread Height of Tubing,Casing, Pipe Line and Drill pipe
适用于测量各种油套管, 管线管, 钻具及特殊扣螺纹高度偏差

→ETH(External Thread Height Gage) 外螺纹高度测量仪



ETH01



ETH02

Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ETH01	TBG, UPTBG, CSG, NC, REG, FH, IF	0-5mm X 0.01mm
ETH02	4-1/2" BCSG~13-3/8" BCSG E/I thread	0-5mm X 0.01mm
ETH03	16" BCSG~20" BCSG E/I thread	0-5mm X 0.01mm
ETH04	TBG, UPTBG, CSG, NC, REG, FH, IF	0.25in X 0.0005in
ETH05	4-1/2" BCSG~13-3/8" BCSG E/I thread	0.25in X 0.0005in
ETH06	16" BCSG~20" BCSG E/I thread	0.25in X 0.0005in

→ITH(Internal Thread Height Gage) 内螺纹高度测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ITH01	1"~4-1/2" TBG, UPTBG ≤4-1/2"CSG	0-5mm X 0.01mm
ITH02	≤4-1/2"CSG	0-5mm X 0.01mm
ITH03	1"~4-1/2" TBG, UPTBG ≤4-1/2"CSG	0.25in X 0.0005in
ITH04	≤4-1/2"CSG	0.25in X 0.0005in

02-Thread Height Gage 螺纹高度测量仪 (齿高)

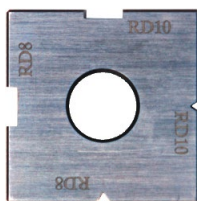
Used for inspecting Thread Height of Tubing,Casing, Pipe Line and Drill pipe
适用于测量各种油套管，管线管，钻具及特殊扣螺纹高度偏差

→ Thread Height Gage Standards 螺纹高度标准样板

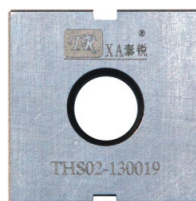
Used for presetting the thread height gage. 适用于校准对应螺纹高度测量仪的零位，保证螺纹高度测量数据的准确性



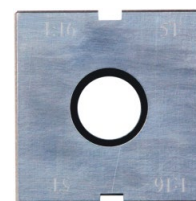
*THS01



*THS01



*THS02



*THS02

Model 型号	Applicable Connection 适用管型螺纹	Stock 库存
THS01	1:16, 8rd/in, 10rd/in	Available
THS02	1:16, 5rd/in(< 16"BCSG)	Available
THS03	1:12, 5rd/in(16"~20" BCSG)	Available
THS04	4rd/in V-0.038R	Available
THS05	5rd/in V-0.040	Available
THS06	4rd/in V-0.050	Available

→ PH(Contact Point for Thread Height Gage) 螺纹高度测量仪触头

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Model 型号	Point Diameter		Thread Per Inch	Applicable Products
	US Units	Imperial Units		
PH01	0.072	1.829	3&3.5&4&6	Rotary shoulder DP V-0.038R V-0.055
PH02	0.044	1.118	4	Rotary shoulder DP V-0.050R V-0.076
PH03	0.034	0.864	5	Rotary shoulder DP V-0.040
PH04	0.072	1.829	5	Buttress Casing
PH05	50°		8 & 10	API Casing,Tubing,Line pipe

Note: Non-Standard contact point can be customized according to customer request.

备注: 可按照用户要求生产各类非标触头

03-Thread Addendum Gage 螺纹顶高测量仪 (顶高)

Used for inspecting Thread Addendum of Tubing,Casing (Round Thread)

适用于测量各种油套管螺纹顶高高度偏差

→EAG(External Addendum Gage) 外螺纹顶高测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
EAG01	1: 16 8RD	0-5mm X 0.01mm
EAG02	1:16 10RD	0-5mm X 0.01mm

→IAG(Internal Addendum Gage) 内螺纹顶高测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
IAG01	1: 16 8RD	0-5mm X 0.01mm
IAG02	1:16 10RD	0-5mm X 0.01mm

03-Thread Addendum Gage 螺纹顶高测量仪 (顶高)

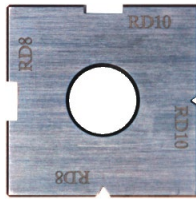
Used for inspecting Thread Addendum of Tubing,Casing
适用于测量各种油套管螺纹顶高高度偏差

→Thread Addendum Standards 螺纹齿顶高标准样板

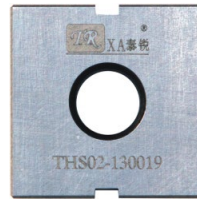
Used for presetting the thread Addendum gage. 适用于校准对齿顶高测量仪的零位，保证螺纹齿顶高测量数据的准确性



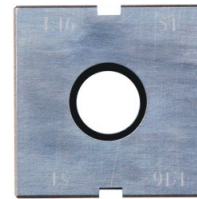
*TAS01



*TAS02



*THS02



*THS02

Model 型号	Applicable Connection 适用管型螺纹	Stock 库存
TAS01	1:16, 8rd/in, 10rd/in	Available
TAS02	1:16, 10rd/in(< 16"BCSG)	Available

→PA(Contact Point for Thread Addendum Gage) 螺纹齿顶高测量仪触头

The contact points produced by our factory are made of **chrome plated high-speed steel** or **tungsten carbide alloy**. Please specify when ordering. 本厂生产的触头分高工钢镀铬触头和碳化钨合金触头 2 种，订货时需加以说明

Model 型号	Point Diameter		Thread Per Inch	Applicable Products
	US Units	Imperial Units		
PA01	0.072	1.829	3&3.5&4&6	Rotary shoulder DP V-0.038R V-0.055
PA02	0.044	1.118	4	Rotary shoulder DP V-0.050R V-0.076
PA03	0.034	0.864	5	Rotary shoulder DP V-0.040
PA04	0.072	1.829	5	Buttress Casing
PA05	50°		8 & 10	API Casing,Tubing,Line pipe

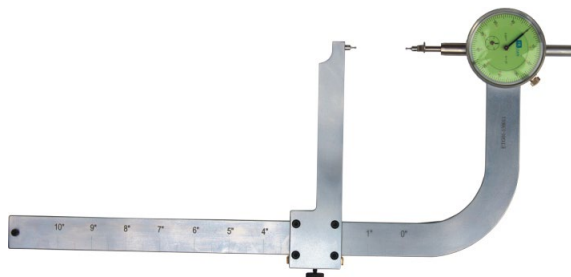
Note: Non-Standard contact point can be customized according to customer request.

备注：可按照用户要求生产各类非标触头

04-Thread Taper Gage 螺纹锥度测量仪

Used for inspecting External/Internal thread taper of Tbuing, Casing, Pipe line and drill pipes 适用于测量各类油管,套管,管线管,钻具及特殊螺纹接头锥度

→ETG(External Taper Gage) 外螺纹锥度测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ETG01	All size TBG, UPTBG, 1"~7" CSG, BCSG	1/2" X 0.001"
ETG02	7"~13-3/8" CSG, BCSG	1/2" X 0.001"
ETG03	16"~20" CSG, BCSG	1/2" X 0.001"
ETG04	All size TBG, UPTBG, 1"~7" CSG, BCSG	1/2" X 0.0005"
ETG05	7"~13-3/8" CSG, BCSG	1/2" X 0.0005"
ETG06	16"~20" CSG, BCSG	1/2" X 0.0005"

→ITG(Internal Taper Gage) 内螺纹锥度测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ITG01	All size TBG, UPTBG, 4-1/2" CSG, BCSG	1" X 0.001"
ITG02	5-1/2"~20" CSG, BCSG	1/2" X 0.001"
ITG03	All size TBG, UPTBG, 4-1/2" CSG, BCSG	1" X 0.0005"
ITG04	5-1/2"~20" CSG, BCSG	1/2" X 0.0005"

04-Thread Taper Gage 螺纹锥度测量仪

Used for inspecting External/Internal thread taper of Tbuing, Casing, Pipe line and drill pipes 适用于测量各类油管,套管,管线管,钻具及特殊螺纹接头锥度

→PT(Contact Point for Taper Gage)锥度测量仪触头

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Model 型号	Point Diameter		Thread Per Inch	Applicable Products
	US Units	Imperial Units		
PT01	0.2357	5.987	3	SL-H90
PT02	0.202	5.131	3.5	H-90
PT03	0.144	3.658	4	API Rotary shoulder Drill Pipe
PT04	0.115	2.921	5	API Rotary shoulder Drill Pipe
PT05	0.096	2.438	6	API Rotary shoulder Drill Pipe
PT06	0.09	2.286	5	Buttress Casing
PT07	0.072	1.829	8	API Casing, Tubing, Line pipe
PT08	0.057	1.448	10	API Casing, Tubing, Line pipe
PT09	0.05	1.27	11.5	API Line Pipe

Note: Non-Standard contact point can be customized according to customer request.

备注：可按照用户要求生产各类非标触头

PICTURES OF CONTACT POINTS:



05-Crest Diameter and Ovality Gage(MRP) 螺纹牙顶径和椭圆度量规 (中径规)

Used for detecting variations in crest diameter(also called Pitch Diameter) by the use of a gage shoe that rests on the crest of the threads 适用于测量各类油管,套管,及特殊螺纹中径偏差

→ETPD(External Crest Diameter Gage) 外螺纹牙顶径和椭圆度测量仪 (中径规)



ETPD01



ETPD02

Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ETPD01	All connection 2-3/8"~7"	0.5" X 0.0005"
ETPD02	All connections 2-3/8"~13-3/8"	0.5" X 0.0005"
ETPD03	All connection 2-3/8"~20"	0.5" X 0.0005"

→ITPD(Internal Crest Diameter Gage) 内螺纹牙顶径和椭圆度测量仪 (中径规)



ITPD01



ITPD02

Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
ITPD01	All connection 1-1/2"~5-1/2"	0.25" X 0.0005"
ITPD02	All connections 3-1/2"~13-3/8"	0.5" X 0.0005"
ITPD03	All connection 3-1/2"~20"	0.5" X 0.0005"

05-Crest Diameter and Ovality Gage(MRP) 螺纹牙顶径和椭圆度量规 (中径规)

Used for detecting variations in crest diameter(also called Pitch Diameter) by the use of a gage shoe that rests on the crest of the threads 适用于测量各类油管,套管,及特殊螺纹中径偏差

→Crest Diameter Setting Standards Rod Type 中径规测量仪标准杆

Rod style setting standards are designed to preset all models of the Crest Diameter Gages for accurate inspection of API threaded connections



Model 型号	Name Example 命名规范	Applicable Specification 适用规格
PINAB + Connection	PINAB 2-3/8" TBG	4"
BOXAB + Connection	BOXAB 2-3/8" TBG	4"

Note: Applicable for 2-3/8"~20" Round thread and Buttress thread

注: 适合 2-3/8"~20" 圆螺纹及偏梯形螺纹

→Crest Diameter Setting Standards Blocky Type 中径规测量仪校对量块

Blocky style setting standards are designed to preset all models of the Crest Diameter Gages for accurate inspection of API threaded connections



Model 型号	Name Example 命名规范	Applicable Specification 适用规格
TR.FSTD -Connection-P	TR.FSTD-238NU-P	2-3/8" NU PIN
TR.FSTD -Connection-B	TR.FSTD-958B-B	9-5/8" BC BOX

06-BTC Thread Vanishing Point Gage 螺纹消失点量规

Used for inspecting Buttress Thread Vanishing Point Gage 适用于测量偏梯形螺纹消失点

→BTD(Buttress Thread Vanishing Point Gage)



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
BTD01	4-1/2"~20" BCSG	0-5mm X 0.01mm
BTD02	4-1/2"~20" BCSG	0.25" X 0.0005"

07-Thread Ridge Thickness Gage 螺纹齿厚测量仪

Used for inspecting ridge thickness of Buttress thread 适用于测量偏梯形螺纹齿厚

→TTMG(Thread Ridge Thickness Gage) 螺纹齿厚测量仪



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
TTMG01	4-1/2"~13-3/8" BCSG	N/A
TTMG02	16"~20" BCSG	N/A

→BTWS(Buttress Thread Ridge Thickness Setting Standard) 偏梯螺纹齿厚标准样板



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
BTWSI16	4-1/2"~13-3/8" BCSG	N/A
BTWSI12	16"~20" BCSG	N/A
BTWSE16	4-1/2"~13-3/8" BCSG	N/A
BTWSE12	16"~20" BCSG	N/A

08-Dent Measurement Gage 凹痕探测仪

Used for inspecting the depth of surface dent of pipe 适用于测量管道表面缺陷深度

→DMG(Dent Measurement Gage)



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
DMG	All pipes	0-5mm X 0.01mm

09-Coupling Alignment Gage 接箍同轴度量规

Used for inspecting Coupling Alignment 用于测量接箍同轴度

→CTCG(Coupling Alignment Gage) 接箍同轴度量规



Model 型号	Applicable Connection 适用管型螺纹	Measure Range 量程范围
CTCG	1"~20" All casing and tubing	±2mm

10-Thread Form Profiles 齿形样板 (梳齿规)

Used for the quick identification of product thread forms. 用于快速测量相应螺纹接头的螺纹形状

→TPG(Thread Profile Gage) 螺纹齿形样板 (梳齿规)

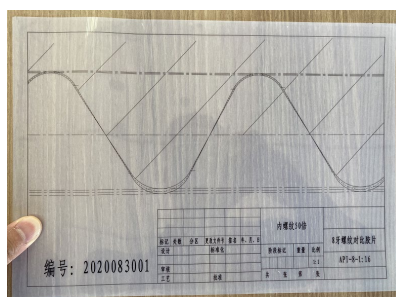
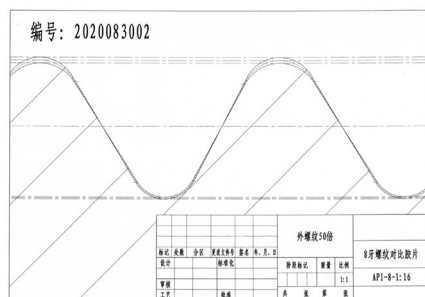


Model 型号	Applicable Specification 适用规格	Stock 库存状况
TPG01	1:16 8RD	Available Stock
TPG02	1:16 10RD	Available Stock
TPG03	1:16 5RD	Available Stock
TPG04	1:12 5RD	Available Stock

Note: Non-Standard Thread Form Profile can be customized according to customer request.

备注：可按照用户要求生产各类非标螺纹齿形样板

→TPG(Thread Comparison drawing) 牙型对比图



Model 型号	Applicable Specification 适用规格	Stock 库存状况
TPG01	1:16 8RD	Available Stock
TPG02	1:16 10RD	Available Stock
TPG03	1:16 5RD	Available Stock
TPG04	1:12 5RD	Available Stock

11-Premium Connection Inspection 特殊扣螺纹检测

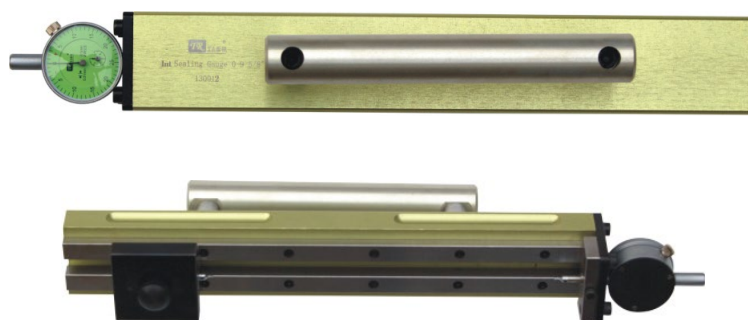
Used for inspecting Premium connection 适用于测量特殊扣

→ISG(Internal Sealing-Surface Gages) 内密封面直径测量仪

Used to Measure the Diameter of Internal Sealing Surface (Premium Connection) 用于测量特殊扣螺纹内密封面直径

→ESG(External Sealing-Surface Gages) 外密封面直径测量仪

Used to Measure the Diameter of External Sealing Surface (Premium Connection) 用于测量特殊扣螺纹外密封面直径



Model 型号	Description 产品描述	Applicable Size 适用尺寸	Range 量程范围
ISG011 ESG011	Fixed Height	2-3/8"~7"	0-5mm x 0.01mm
ISG012 ESG012	Adjustable Height	2-3/8"~7"	0-5mm x 0.01mm
ISG013 ESG013	Fixed Height	2-3/8"~7"	0.25" x 0.0005"
ISG014 ESG014	Adjustable Height	2-3/8"~7"	0.25" x 0.0005"
ISG021 ESG021	Fixed Height	2-3/8"~13-3/8"	0-5mm x 0.01mm
ISG022 ESG022	Adjustable Height	2-3/8"~13-3/8"	0-5mm x 0.01mm
ISG023 ESG023	Fixed Height	2-3/8"~13-3/8"	0.25" x 0.0005"
ISG024 ESG024	Adjustable Height	2-3/8"~13-3/8"	0.25" x 0.0005"
ISG031 ESG031	Fixed Height	2-3/8"~20"	0-5mm x 0.01mm
ISG032 ESG032	Adjustable Height	2-3/8"~20"	0-5mm x 0.01mm
ISG033 ESG033	Fixed Height	2-3/8"~20"	0.25" x 0.0005"
ISG034 ESG034	Adjustable Height	2-3/8"~20"	0.25" x 0.0005"

11-Premium Connection Inspection 特殊扣螺纹检测

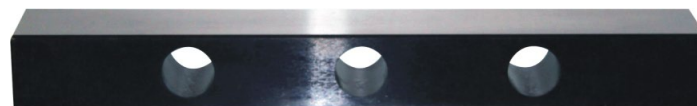
Used for inspecting Premium connection 适用于测量特殊扣

➔ISDS(Internal Sealing-Surface Diameter Setting Standard) 内密封面测量仪校对块



Model 型号	Applicable Connection 适用管型螺纹	Range 量程范围
ISDS + Size	Suitable for Specific Size of Connection	Single Size

➔ESDS(External Sealing-Surface Diameter Setting Standard) 外密封面测量仪校对块



Model 型号	Applicable Connection 适用管型螺纹	Range 量程范围
ESDS + Size	Suitable for Specific Size of Connection	Single Size

➔DDG(Digital Display Sealing-Surface Depth Gauge) 数显密封面深度量规



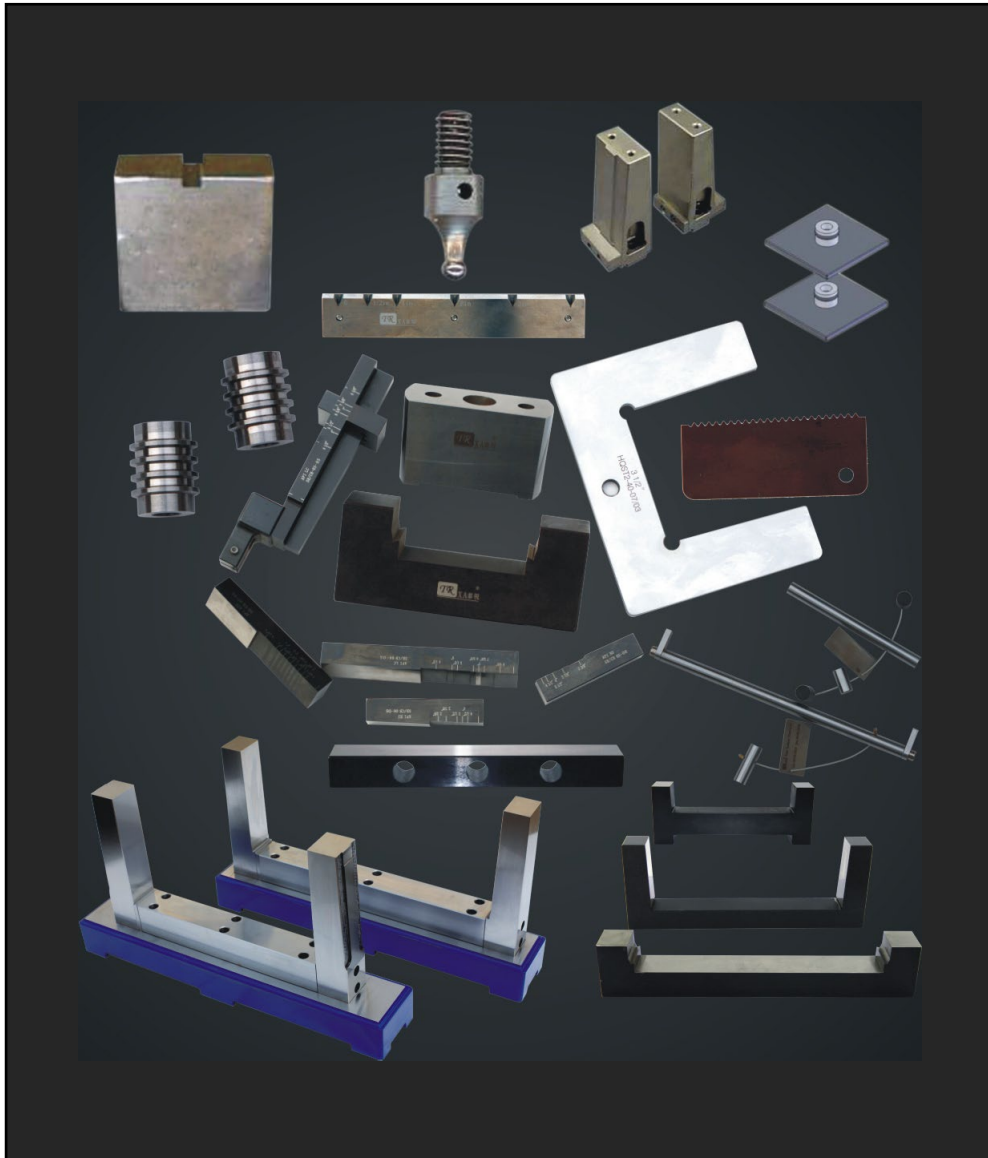
DDG08

Model 型号	Applicable Depth 适用深度	Display Precision 显示精度
DDG08	8"/200mm	0.0004"/0.01mm
DDG12	12"/300mm	0.0004"/0.01mm
DDG20	20"/500mm	0.0004"/0.01mm

11-Premium Connection Inspection 特殊扣螺纹检测

Used for inspecting Premium connection 适用于测量特殊扣

→ All setting standards for Premium Connection Gages



Special Remark:

We can customize many kinds of Threading Inspection instruments for **Premium Connection** according to customer's request

我们可以依据客户要求定制各种特殊扣螺纹检验量具

All Gages be calibrated by TGRC.CNPC. <http://tgrc.cnpc.com.cn>

The end

Thanks for your attention