

HELP YOU FIND THE BEST CHINESE INDUSTRIAL MANUFACTURER

Dissolvable Materials & Plugs



COMPANY INTRODUCTION



TINVO is founded in 2007, mainly deals in various types of rolling mill rolls, metallurgical steel blades, high precision machining parts, etc., TINVO is focusing on supply chain integration in industrial vertical fields like metallurgy, power, oil and gas industry, the core of TINVO strength is based on "Made in China", with the complete Chinese industrial capability, TINVO is providing one-stop Chinese and international brand supply chain services for global clients. It is committed to becoming "a Reliable & Preferred selecting platform based on Chinese industrial factories". At the same time, TINVO also provides enterprises with comprehensive foreign trade services, including industrial import and export, cross-border logistics, factory acceptable test and etc.



SOLUTION



ONE-STOP SOLUTION FOR OIL AND GAS INDUSTRY

EQUIPMENT

- 1: TINVO own products.
- 2: Extended products outsourcing in the same area of industries.
- 3: Provide adequate choices on manufacturers with best cost-performance.
- 4: Factory&production site inspection.
- 5: Help end-user find the original source of EPC items.

PRICE"ATION

- 1: TINVO gets favorable price with own background.
- 2: TINVO handles your inquiry and promise, replied within 8-24 working hours.
- 3: TINVO provides optional price choice.
- 4: TINVO discovers better sources to meet customer's target.

ONE-STOP SOLUTION FOR METALLURGY INDUSTRY



RISK CONTROL

- 1: TINVO is responsible for all problems of products with warantee&guarantee time.
- 2: TINVO provides tech collection evaluation before quotation for those items without details.
- 3: TINVO provides Factory&Production site inspection.

TECH SERVICE

- 1: Technical service (product site tech evaluation, project optimise design, product maintanance, etc.)
- 2: The users can demonstrate on a projector or computer, or print the presentation and make it into a film to be used in a wider field.

FACOTRY BASE



1. Scale strength:

- 120+ acres occupation
- Annual yield of 300,000 pcs of soluble magnesium alloy+ 6,000 tonnes of magnesium alloy
- Rare earth alloys→magnesium alloy materials→magnesium alloy products

2. Core technology:

- vacuum casting/sand casting/metal mould casting/low pressure casting/
- Process: casting → extrusion → moulding → precision machining whole process



3. Core products:

- Magnesium-based intermediate alloys
- Magnesium alloy cast rods/plates/extruded profiles/forging parts
- Oil and gas development with soluble magnesium alloy special products

4. Applications:

- Aerospace
- Oil and gas exploration
- High-end equipment manufacturing

MANUFACTURE FACILITY AND PROCESS



Mg Alloy Melting

★ magnesium alloy melting furnaces (2.5T) x12 5500T/year

★ 3600T extruder x1, 700T extruder x1, 5000T/year

Extrusion moulding

★Turning and milling machine x 32,

CNC Machining

★ 4-axis CNC center x8, 5-axis CNC center x9,
Yield 300Kilo pcs of dissolvable ball / dissolvable bridge
plugs and other products.

Surface Coating

★Micro-arc oxidation, passivation, electrophoresis,
electroplating, powder spraying, and other coatings,
heat treatment of the production line x2

CNC machining
scrap recycling

★ CNC machining waste material recycling production line x2

MANUFACTURE FACILITY



3600T extruding machine



Magnesium ally casting



MANUFACTURE FACILITY



CNC machining center



EDM



CNC milling and turning



Laser cutting



CNC bending

MANUFACTURE FACILITY



Heat treatment furnace

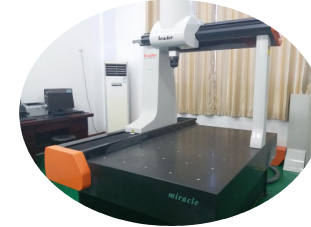


Surface treatment production line
*Micro-arc oxidation, passivation, electrophoresis, electroplating,
powder spraying, and other coatings*

CNC machining waste recycling line



TEST FACILITY AND LAB INSTRUMENT

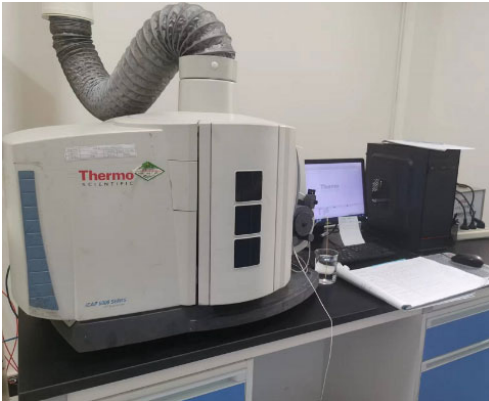


- ICP spectral detector
- Metallographic microscope
- Metallographic polishing instrument
- Coordinate measuring machine
- Constant temperature & humidity test chamber
- Salt spray tester
- Electronic universal testing machine

- Electronic Brinell hardness detector
- Fatigue testing machine
- Film Thickness Gauge
- High temperature and high-pressure test system
- Scanner
- Sulphurisation Meter



TEST FACILITY AND LAB INSTRUMENT



ICP spectral detector



Universal testing machine

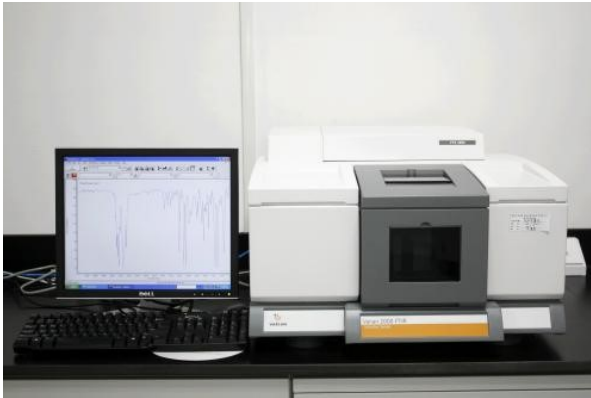


Coordinate measuring machine



Scanner

TEST FACILITY AND LAB INSTRUMENT



Sulphurisation



UV aging chamber



Aging instrument



HT & LT testing machine



infrared spectrometer



Low temperature
brittleness machine



O₃ aging chamber

PRODUCT



Ultra-high temperature soluble bridge plug



Mono slip soluble bridge plug



Full metal soluble bridge plug



Elastomer soluble bridge plug



Double slips soluble bridge plug



Ball-in-place soluble bridge plug



3.5" soluble bridge plug

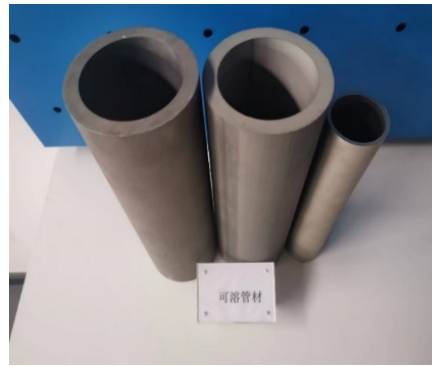


Dissolvable frac plug

PRODUCT



Soluble nail



Soluble pipe/hollow rod



Dissolvable magnesium rod



Magnesium extrusion rod



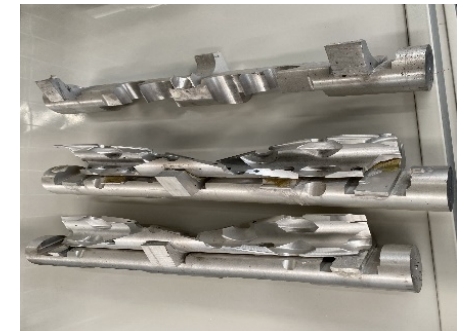
Acid soluble ball seat



Acid resistance soluble ball



Block ball for temporary



Magnesium machining parts

PRODUCT

Dissolvable Magnesium Material



Material model	Mechanical Property			hardness HB	Dissolution Rate	
	Tensile strength Mpa	Yield Strength MPa	Elongation %		Dissolution condition	Rate/{mg/(cm ² .h)}
006	≥360	≥260	≥3.0	≥90	93°C/3%KCl	50-80
006A	≥300	≥210	≥5.0	≥70	93°C/3%KCl	50-80
008	≥400	≥300	≥3.0	≥100	93°C/3%KCl	30-60
011	≥410	≥300	≥3.0	≥100	93°C/3%KCl	15-35
016	≥270	≥180	≥14.0	≥60	93°C/3%KCl	30-60
018	≥230	≥180	≥12.0	≥55	50°C/0.84KCl	35-55
019	≥220	≥170	≥14.0	≥55	50°C/0.84KCl	35-60
010	≥170	≥100	≥30.0	≥50	93°C/3%KCl	15-35
022	≥300	≥200	≥5.0	≥70	43°C/0.05%KCl	35-55
023	≥270	≥200	≥7.5	≥65	43°C/0.05%KCl	25-35
024	≥250	≥200	≥7.0	≥60	43°C/0.05%KCl	50-80
					30°C/0.84%KCl	70-100
015	≥270	≥210	≥5.0	≥60	30°C/0.84%KCl	80-130
					20°C/0.01%KCl	30-50
025	≥270	≥200	≥10.0	≥70	50°C/0.84%KCl	80-110
808	≥360	≥260	≥3.0	≥100	50°C/0.84%KCl	50-80
026	≥440	≥330	≥3.0	≥110	93°C/3%KCl	10-30
035	≥100	≥60	≥40.0	≥40	93°C/3%KCl	50-100
					50°C/0.84%KCl	20-40
055	≥210	≥160	≥12.0	≥55	93°C/3%KCl	100-150
MM3	≥310	≥230	≥12.0	≥70	93°C/3%KCl	2-10
MM4	≥310	≥230	≥6.0	≥70	93°C/3%KCl	1-5
MM6	≥270	≥220	≥9.0	≥70	50°C/0.84%KCl	70-110
MM7	≥280	≥220	≥5.0	≥70	50°C/0.84%KCl	80-130
MM8	≥270	≥220	≥10.0	≥65	93°C/3%KCl	90-160

PRODUCT

Dissolvable Magnesium Material



Note:

1. We can produce dissolvable bar as per customers' demand with specifications such as $\Phi 3$ 、5、6、9.5、10、16、20、25、28、38、46、51、55、60、65、70、78、80、84、90、93、96、100、103、105、110、113、115、117、120、125、128、130、134、150、160、170、180. (mm)
2. We can drill to produce pipes with an inner hole $\Phi 30$ 、31、38、40、45、50、60、70、77、90 (mm) and other specifications, length is 1 meter.
3. Pipes of other specifications can be extruded by customer's demand.



PRODUCT

Dissolvable Bridge Plug



PRODUCT

Dissolvable Bridge Plug



Mono Slip Dissolvable Bridge Plug

The design of the dissolvable bridge plug uses the conventional Baker10#/20# setting tool to set. The special adaptor is connected with the bridge plug, when the bridge plug is pumped to the predetermined setting position, the setting tool is set push the cylinder to push the bridge plug downward compression and setting, after the bridge plug is set, release the thread cutting, setting tools and set joint successfully released.

Casing OD (mm)	Casing ID (mm)	Plug Model	plug length (mm)	Internal diameter (mm)	Soluble ball (mm)	Setting force(T)	Working pressure differential(MPa)	Operating Temperature (°C)
3.5"(88.90)	76	Y257R-65	275	25	31.5	4-5	70	30-150
4.5"(114.3)	97.2-101.6	Y257R-89	290	30	40.5	10-14	70	30-150
5.0°(127)	102.7-105.6	Y257R-89	290	30	40.5	10-14	70	30-150
	108.6	Y257R-95	290	32	44.5	12-16	70	30-150
5.5"(139.7)	114.3-118.6	Y257R-103	290	45	52.5	12-16	70	30-150
	121.4-124.3	Y257R-109	290	50	62.5	12-16	70	30-150
6"(152.4)	130.0-133.0	Y257R-115	290	60	69.5	14-18	70	30-150

PRODUCT

Dissolvable Bridge Plug



Double Slip Dissolvable Bridge Plug

The design of the dissolvable bridge plug uses the conventional Baker10#/20# setting tool to set. The special adaptor is connected with the bridge plug, when the bridge plug is pumped to the predetermined setting position, the setting tool is set push the cylinder to push the bridge plug downward compression and setting, after the bridge plug is set, release the thread cutting, setting tools and set joint successfully released.

Casing OD (mm)	Casing ID (mm)	Plug Model	plug length (mm)	Internal diameter (mm)	Soluble ball (mm)	Setting force(T)	Working pressure differential(MPa)	Operating Temperature (°C)
4.5"(114.3)	97.2-101.6	Y457R-88	420	30	40.5	10-14	70	30-150
5.0"(127)	102.7-105.6	Y457R-88	420	30	40.5	10-14	70	30-150
	108.6	Y457R-95	430	32	44.5	12-16	70	30-150
5.5"(139.7)	114.3-118.6	Y457R-103	430	40	50.5	12-16	70	30-150
	121.4-124.3	Y457R-109	430	45	54.5	12-16	70	30-150

PRODUCT

Dissolvable Bridge Plug



Ball-in-place Dissolvable Bridge Plug

The design of the dissolvable bridge plug uses the conventional Baker10#/20# setting tool to set. The special adaptor is connected with the bridge plug, when the bridge plug is pumped to the predetermined setting position, the setting tool is set push the cylinder to push the bridge plug downward compression and setting, after the bridge plug is set, release the thread cutting, setting tools and set joint successfully released.



Casing OD (mm)	Casing ID (mm)	Plug Model	plug length (mm)	Internal diameter (mm)	Soluble ball (mm)	Setting force(T)	Working pressure differential(MPa)	Operating Temperature (°C)
4.5"(114.3)	97.2-101.6	Y257R-89	245	28	34.5	10-14	70	20-210
5.0"(127)	102.7-105.6	Y257R-89	245	28	34.5	10-14	70	20-210
	108.6	Y257R-95	245	30	37.5	12-16	70	20-210
5.5"(139.7)	114.3-118.6	Y257R-103	260	35	40.5	12-16	70	20-210
	121.4-124.3	Y257R-108	260	35	40.5	12-16	70	20-210

PRODUCT

Dissolvable Bridge Plug



Full Metal Dissolvable Bridge Plug

The design of the dissolvable bridge plug uses the conventional Baker10#/20# setting tool to set. The special adaptor is connected with the bridge plug, when the bridge plug is pumped to the predetermined setting position, the setting tool is set push the cylinder to push the bridge plug downward compression and setting, after the bridge plug is set, release the thread cutting, setting tools and set joint successfully released.

Casing OD (mm)	Casing ID (mm)	Plug Model	plug length (mm)	Internal diameter (mm)	Soluble ball (mm)	Setting force(T)	Working pressure differential(MPa)	Operating Temperature (°C)
3.5"(88.90)	76	Y257R-65	210	25	31.5	4-5	70	20-210
	97.2-99.6	Y257R-85	220	35	44.5	10-14	70	20-210
4.5"(114.3)	99.6-101.6	Y257R-89	220	40	51.5	10-14	70	20-210
	102.7	Y257R-89	220	40	51.5	10-14	70	20-210
5"(127)	104.8-105.6	Y257R-95	220	45	53.5	10-14	70	20-210
	108.6	Y257R-98	220	45	53.5	12-16	70	20-210
5.5"(139.7)	114.3-118.6	Y257R-103	230	50	61.5	12-16	70	20-210
	118.6-121.4	Y257R-106	230	55	66.5	12-16	70	20-210
	121.4-124.3	Y257R-109	230	60	71.5	12-16	70	20-210
6"(152.4)	130.0-133.0	Y257R-118	235	70	82.5	12-16	70	20-210

PRODUCT

Dissolvable Bridge Plug



Dream Dissolvable Bridge Plug

The design of the dissolvable bridge plug uses the conventional Baker10#/20# setting tool to set. The special adaptor is connected with the bridge plug, when the bridge plug is pumped to the predetermined setting position, the setting tool is set push the cylinder to push the bridge plug downward compression and setting, after the bridge plug is set, release the thread cutting, setting tools and set joint successfully released.

Casing OD (mm)	Casing ID (mm)	Plug Model	plug length (mm)	Internal diameter (mm)	Soluble ball (mm)	Setting force(T)	Working pressure differential(MPa)	Operating Temperature (°C)
4.5"(114.3)	97.2-101.6	Y257R-89	290	40	47.5	10-14	70	30-150
	102.7-105.6	Y257R-89	290	40	47.5	10-14	70	30-150
5.0"(127)	108.6	Y257R-95	290	50	60.5	12-16	70	30-150
5.5"(139.7)	114.3-118.6	Y257R-103	290	60	69.5	12-16	70	30-150
	121.4-124.3	Y257R-108	290	65	72.5	12-16	70	30-150

APPLICATION



Since 2015, the dissolvable bridge plugs of various specifications, such as 4.5-inch and 5.5-inch, have been used to carry out field tests in Changqing, Daqing, Tuha, Sichuan, Jilin and other oilfields, with a cumulative total of more than 30,000 segments used in the field of segmental fracturing. The test data verify that the technical performance of dissolvable bridge plugs has reached the design requirements and can meet the production requirements of segmental fracturing. Meanwhile, TINVO has established long-term cooperative relationship with CNPC, CNOOC, Sinopec, SJS, Jiangnan Oilfield Tools and other units and subsidiaries, and has supplied dissolvable bridge plugs, aluminum-magnesium alloy dissolvable rods and dissolvable frac ball to well-know petroleum companies and oil service companies worldwide.



HELP YOU FIND THE BEST CHINESE INDUSTRIAL MANUFACTURER



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