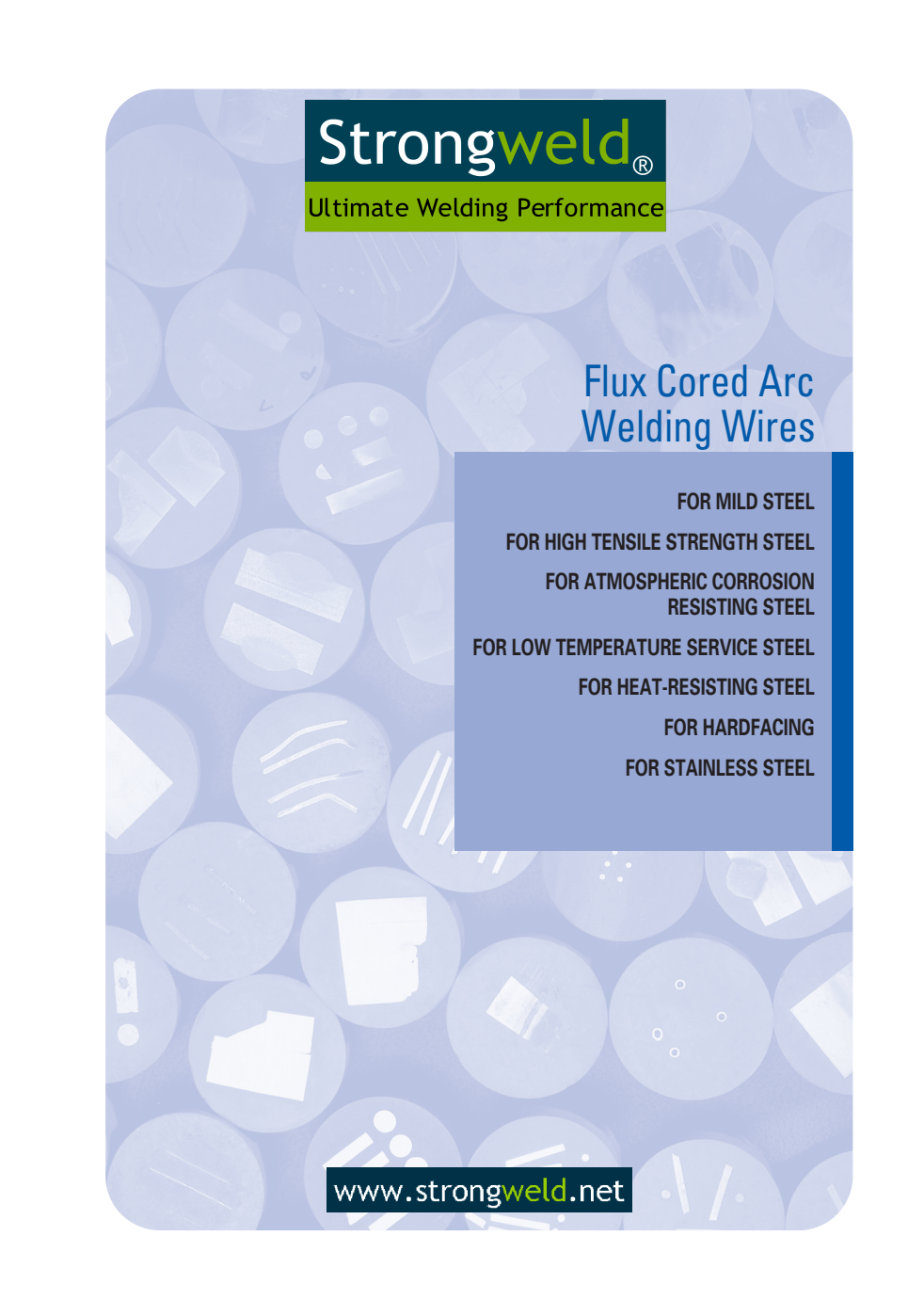




Strongweld®

Ultimate Welding Performance

Flux Cored Arc Welding Wires

FOR MILD STEEL

FOR HIGH TENSILE STRENGTH STEEL

**FOR ATMOSPHERIC CORROSION
RESISTING STEEL**

FOR LOW TEMPERATURE SERVICE STEEL

FOR HEAT-RESISTING STEEL

FOR HARDFACING

FOR STAINLESS STEEL

www.strongweld.net

Notes on usage

General information

- ① Since Flux cored wire is softer than solid MIG wire, do not excessively tighten the pressure roller in wire feeder.
- ② At flat butt welding, back-step process makes penetration stable. At horizontal position and over head position, straight sequence is good for getting flat bead appearance.
- ③ At horizontal fillet welding to primer-coating plate, blowhole defects such as pit, gas hole are apt to occur easily. Therefore, appropriate selection of wire and parameter setting for welding primer-coating plates are necessary.
- ④ When welding is done in excessive heat input and excessive welding currents, there are possibility to lower mechanical properties of a weld metal.
- ⑤ As cold cracks are caused by diffusible hydrogen, In general, it is necessary to remove it by selecting proper preheat and interpass temperature depending upon welding process. Normally as tensile strength becomes higher It is better to apply higher preheat and interpass temperature.
- ⑥ When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input according to the required impact value.
- ⑦ Since rust, oil and dirt are apt to make welding defects such as pit, blowhole, Please remove them from the groove by grinder for instance before welding.
- ⑧ In order to minimize cracking of hardsurfacing, the followings must be taken into account :
 - ① Preparation of base metal
 - ② Heat and temperature control
 - ③ Penetration
 - ④ Welding distortion
 - ⑤ Underlaying

Welding power source

Use a DC power source with constant voltage and the polarity DC-EP except several self shielded items.

Shielding gas

Use CO₂ for shielding gas for general applications. Ar+CO₂ mixtures with 20~50% CO₂ can also be used, but compared with CO₂, porosity(pit and blowhole) is apt to occur. in welding with an Ar+CO₂ mixture should be 5mm longer than in use of CO₂

Wire extension

Keep the wire extension at about 15mm for 0.9mm wire and 15~20mm for 1.2mm and 1.6mm wire. The use of a shorter wire extension may cause pit and wormhole. The wire extension in welding with an Ar+CO₂ mixture should be 5mm longer than in use of CO₂

Notes on usage

Protection against wind

When wind velocity at the vicinity of an arc is more than 1m/sec. Blowhole is apt to occur and dissolution of nitrogen into the weld metal may deteriorate slag removal and decrease the ferrite content of the weld metal in case of stainless flux cored wire, thereby causing hot cracking. To prevent these problems. use an adequate shielding gas flow rate and a windscreens.

Welding fumes

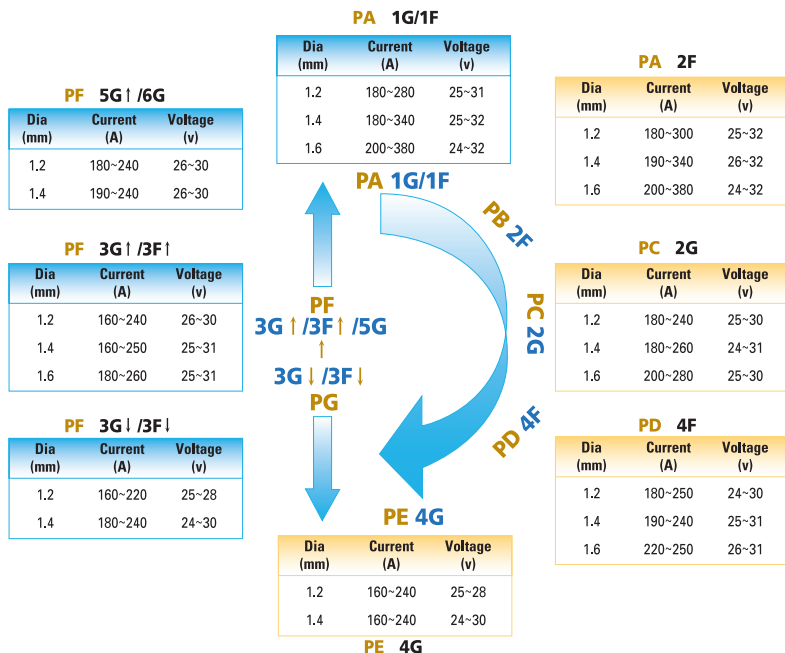
Flux cored wires generate much more welding fumes in terms of the amount of fumes at unit time in comparison with that of covered electrodes. To protect welders from harmful welding fumes, be sure to use a local ventilator and an appropriate respirator.

Storage of wire

Once Flux cored wire picked up moisture, it cannot be dried at high temperature, unlike covered electrode. If a wire was left in a wire feeder in a high-temperature high-humidity atmosphere in summer season, a wet environment in rainy season or a dewfall environment at night in winter was unpacked, the wire should be kept in an area of low humidity.

※ Temp. below 30℃ relative humidity below 60%

100%CO₂ shielding gas



Ar+CO₂ or Ar+O₂ shielding gas

- It is a general application that mixture gas normally use the lower 1~2 voltage than 100% CO₂ gas.
- 98%Ar-2%O₂ mixture most used thin plates shall be selected arc voltage about 22~26V.

The welding usage range of other big diameter products (Flat and H-fillet)

welding parameter	2.0	2.4	3.2
welding current	250~500	300~600	350~700
welding voltage	28~36	29~38	30~40

- Self-shielded FCW should be limited arc voltage about 23~27V that help crack resistance to control

K-61T

For 420MPa high tensile steel

Classifications

EN ISO 17632-B:2008	: T43 Z T1-1MA	KS D 7104	: YFW-A430R
AWS A5.20-07	: E61T-G	JIS Z 3313	: T43 T1-1MA

Description

- K-61T is designed for MAG welding of POS-AG steel and low silicon steel for all-position welding applications
- It is applicable to use 400MPa class tensile strength steel welding
- It is in control of low Si component, so suitable for making zinc primer coated tank
- Wire is a titania type flux cored wire that provides smooth arc, good slag removal and bead shape

Welding positions



Polarity & shielding gas

- Mix:Ar+20% CO₂ (15~25l/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
Mix	0.03	0.12	0.80	0.013	0.009

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0°C	Remarks
AWS A5.20	min. 330	430~600	min. 22		
EN ISO 17632-B	min. 330	430~600	min. 20		
Example	520	580	29	30	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- We recommend this wire to weld with proper welding conditions

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T46 0 RC/M 4 H10	KS D 7104	: YFW-C/A50DM
EN ISO 17632-B:2008	: T49 0 T15-0C/MA-U H10	JIS Z 3313	: T49J 0 T15-0 C/MA-U H10
AWS A5.20-07	: E70T-1C/-1M		

Description

- It is designed for welding of 490MPa high tensile steels with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has better excellent deposition rate and provides smooth arc, low spatter levels

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂, Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.03	0.50	1.45	0.014	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0℃	-20℃	
AWS A5.20	min. 390	490~670	min. 22		≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	520	580	29	70	55	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- It is possible to use the 100% CO₂ & mixed gas, but you can get more advantage of welding properties when weld with 100% CO₂ gas

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE, JIS

K-71T

For 490MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T46 0 P C 1 H10	KS D 7104	: YFW-C50DR
EN ISO 17632-B:2008	: T49 0 T1-1CA-U H10	JIS Z 3313	: T49J 0 T1-1CA-U H10
AWS A5.20-07	: E71T-1C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding
- It feature excellent mechanical properties, easy slag removal, low spatter generation, smooth bead shape, high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.04	0.55	1.25	0.015	0.011

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0°C	-20°C	
AWS A5.20	min. 390	430~600	min. 22		≥ 27	
EN ISO 17632-B	min. 390	430~600	min. 20	≥ 47		
Example	520	580	29	70	55	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	2YSAH10	SA2YM	II YMS	2YH15S	2YSH15	KSW52G	2YSGH10

* Others : CCS, RINA, CWB, CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T46 2 P C/M 1 H5	KS D 7104	: YFW-C/A502R
EN ISO 17632-B:2008	: T49 2 T1-1C/MA-U H5	JIS Z 3313	: T49 2 T1-1C/MA-U H10
AWS A5.20-07	: E71T-1C/-1M		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding general fabrications
- It provides low fume generation and has good impact strength at low temperatures
- It also provide excellent usability with stable arc, less spatter levels, smooth bead shape

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.03	0.38	1.35	0.015	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-30℃	
AWS A5.20	min. 390	490~670	min. 22	≥ 27		
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 47	
Example	520	570	28	80	50	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input
- When you use to Ar+CO₂ mixture gas, you should be lower 1~2 voltage than 100% CO₂ gas

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5	12.5	15, 20
Pailpack (kg)		100 ~ 300	

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	3SYAH10	3SYSH10	III YMS(H10)	3YH10S	3Y10SH5	KSW53GH10	3YSGH10

* Others : RINA, CWB, TUV, DB, CE, JIS, KS

K-71TM

For 490MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T46 2 P C/M 1 H5	KS D 7104	: YFW-A/C502R
EN ISO 17632-B:2008	: T49 3 T1-1C/MA H5	JIS Z 3313	: T49 2 T1-1 C/MA-U H10
AWS A5.20-07	: E71T-1C/-1M		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding
- The shielding gas should be used Ar+20~25%CO₂ for welding, low spatter generation, smooth bead shape, high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
Mix	0.03	0.59	1.44	0.013	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-30℃	
AWS A5.20	min. 390	490~670	min. 22	≥ 27		
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	550	610	30	65	50	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When you use the mixture gas, get a good weldability

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	LR	Others
Mix	3YSA	SA3YM	III YMS	3YS	RINA, CE, KS, JIS

Classifications

EN ISO 17632-A:2008	: T46 2 B M 4 H5	KS D 7104	: YFW-A502B
EN ISO 17632-B:2008	: T49 3 T5-0MA H5	JIS Z 3313	: T49 2 T5-0MA-U H5
AWS A5.20-07	: E70T-5M		

Description

- It is designed for welding of 490MPa high tensile steel with only Ar/CO₂ mixtures
- Wire is a fully basic type of flux cored wire for flat and horizontal position welding
- It has good CVN toughness at low temperatures and the weldability is excellent with lower crack susceptibility

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
Mix	0.04	0.34	1.30	0.015	0.011

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20℃ -30℃	Remarks
AWS A5.20	min. 390	490~670	min. 22	≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18	≥ 27	
Example	490	550	29	80 60	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- It is a general thing that basic type generates more fume, so you have to use the ventilation system in small space

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5	12.5	15, 20
Pailpack (kg)	100 ~ 300		

Approvals

CE, JIS

K-71TB

For 490MPa high tensile steel (Basic type)

Classifications

EN ISO 17632-A:2008	: T46 2 B C/M 1 H5	KS D 7104	: YFW-C/A502B
EN ISO 17632-B:2008	: T49 3 T5-1C/MA H5	JIS Z 3313	: T49 2 T5-1 C/MA-U H5
AWS A5.20-07	: E71T-5C/-5M		

Description

- It is designed for welding of 490MPa high tensile steel with only Ar/CO₂ mixtures
- It has excellent CVN impact properties at sub-zero temperatures.
- Wire is a fully basic type of flux cored wire for all-position welding
- It provide good arc stability, low spatter generation

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.02	0.60	1.60	0.015	0.011

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20°C	-30°C	
AWS A5.20	min. 390	490~670	min. 22		≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	550	610	30	65	55	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When you use the 100% CO₂ gas, get a good weldability

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE, JIS

Classifications

EN ISO 17632-A:2008	: T46 2 R C 4 H10	KS D 7104	: YFW-C50DR
EN ISO 17632-B:2008	: T49 2 T1-OCA-U H10	JIS Z 3313	: T49 2 T1-OCA-U H10
AWS A5.20-07	: E70T-1C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- It is the most suitable for fillet welding of inorganic zinc-primer coated steels often used in the machineries, steel fabrications and construction industries
- Wire is a titania type of flux cored wire for flat and horizontal position welding
- The arc characteristics are so smooth and stable, even the most novice welder can produce good welds. It has easy slag removal and bigger leg of fillet welding is ea

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.04	0.49	1.36	0.015	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃ -20℃	Remarks
AWS A5.20	min. 390	490~670	min. 22	≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18	≥ 47	
Example	500	600	27	100 68	CO ₂

Notes on usage and welding condition

Dia. (mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

- It will be get to the 7~8mm leg of fillet weld at the welding condition of 340A*34V*30CPM

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	3YSA	3S3YS	III YMS	3YS	3YS	KSW53G	RSW53G

* Others : RINA, CE, KS, JIS

KX-100

For 490MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T46 0 M C 4 H5	KS D 7104	: YFW-C50DM
EN ISO 17632-B:2008	: T49 2 T15-0CA H5	JIS Z 3313	: T49J 0 T15-0CA-U H5
AWS A5.18-07	: E70C-3C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Slag quantity is almost the same as a solid wire and multiple pass welding can be performed without removing slag
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- Deposition rate is up to about 20% higher than a solid wire's one

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.04	0.54	1.55	0.014	0.011

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0℃	-20℃	
AWS A5.18	min. 400	min. 480	min. 22		≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	510	550	29	85	60	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	2YSA	SA3YM	III YMS	3YS	3S3YS	KSW53G	3YSG

* Others : CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T46 0 R C 4 H10	KS D 7104	: YFW-C50DM
EN ISO 17632-B:2008	: T49 0 T15-OCA-U H10	JIS Z 3313	: T49J 0 T15-OCA-U H10
AWS A5.20-07	: E70T-1C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has good porosity resistance and is applicable for fillet welding of inorganic zinc-primer coated steel

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.04	0.41	1.25	0.014	0.011

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0℃ -20℃	Remarks
AWS A5.20	min. 390	490~670	min. 22	≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18	≥ 47	
Example	510	550	29	80 50	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

- Zinc primer coated steels should be enough drying when you use

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	2YSAH10	SA2YM	II YMS	3YS	2S2YS	KSW53G	3YSG

- * Others : CCS, CE, JIS, KS

KX-200H

For 490MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T46 2 R C 4 H10	KS D 7104	: YFW-C50DM
EN ISO 17632-B:2008	: T49 2 T15-OCA-U H10	JIS Z 3313	: T49 2 T15-OCA-U H10
AWS A5.20-07	: E70T-1C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has better CVN toughness at low temperatures when compared to the KX-200
- KX-200H is intended for semi-automatic, automatic, single- and multiple pass welding

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.04	0.56	1.61	0.013	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0°C	-20°C	
AWS A5.20	min. 390	490~670	min. 22		≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 47	
Example	517	610	28	100	70	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

- Zinc primer coated steels should be enough drying when you use

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)		5, 12.5, 15, 20	
Pailpack (kg)		100 ~ 300	

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	KR
CO ₂	3YSAH5 E70T-1	3YSH5	III YMS(H5)	3YH5	3YSH10	RSW53GHHH

* Others : CE, JIS, KS

KX-200UH

For 490MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T46 2 R C 4 H10	KS D 7104	: YFW-C504M
EN ISO 17632-B:2008	: T49 4 T15-0CA-U H10	JIS Z 3313	: T49 4 T15-0CA-U H10
AWS A5.20-07	: E70T-1C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has good porosity resistance and is applicable for fillet welding of inorganic zinc-primer coated steels and intended for semi-automatic, automatic, single- and multiple pass welding

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.04	0.45	1.40	0.013	0.011	0.42

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20°C	-40°C	Remarks
AWS A5.20	min. 390	490~670	min. 22	≥ 27		
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	540	610	28	100	65	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

KX-200H

For 490MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T46 2 R C 4 H10	KS D 7104	: YFW-C50DM
EN ISO 17632-B:2008	: T49 2 T15-OCA-U H10	JIS Z 3313	: T49 2 T15-OCA-U H10
AWS A5.20-07	: E70T-1C		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has better CVN toughness at low temperatures when compared to the KX-200
- KX-200H is intended for semi-automatic, automatic, single- and multiple pass welding

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.04	0.56	1.61	0.013	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0°C	-20°C	
AWS A5.20	min. 390	490~670	min. 22		≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 47	
Example	517	610	28	100	70	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

- Zinc primer coated steels should be enough drying when you use

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)		5, 12.5, 15, 20	
Pailpack (kg)		100 ~ 300	

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	KR
CO ₂	3YSAH5 E70T-1	3YSH5	III YMS(H5)	3YH5	3YSH10	RSW53GHHH

* Others : CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T46 2 M M 4 H5	KS D 7104	: YFW-A502M
EN ISO 17632-B:2008	: T49 3 T15-0MA H5	JIS Z 3313	: T49 3 T15-0MA H5
AWS A5.18-07	: E70C-6M		

Description

- It is designed for welding of 490MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has better CVN toughness at low temperatures when compared to the KX-706M
- It feature good penetration, high resistance to porosity, good wetting behaviour as well as low hydrogen contents
- KX-706M is intended for semi-automatic, automatic, single- and multiple pass welding

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
Mix	0.04	0.60	1.50	0.014	0.010

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20°C -30°C	Remarks
AWS A5.18	min. 400	min. 480	min. 22	≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18	≥ 27	
Example	480	540	29	70 55	Mix

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	160 ~ 340	200 ~ 380	240 ~ 420
(Amp.) HF (PC/2G)	(24 ~ 32)	(25 ~ 33)	(26 ~ 35)

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR
Mix	3YSA	3S3YS	III YMS	3YS	3YS

* Others : CE, RS, CWB, JIS, KS

K-55T

For 520MPa high tensile steel

Classifications

EN ISO 17632-A:2008 : T46 0 P C 1 H10 JIS Z 3313 : T55 2 T1-1CA H10
 EN ISO 17632-B:2008 : T55 2 T1-1CA H10

Description

- It is designed for welding of 520MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding
- It feature excellent mechanical properties, easy slag removal, low spatter generation, smooth bead shape and high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.04	0.54	1.50	0.013	0.011	0.40

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0℃	-20℃	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
JIS Z 3313	min. 460	550~740	min. 17		≥ 27	
Example	480	540	29	65	45	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200℃ in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

JIS, CE

Classifications

EN ISO 17632-A:2008	: T46 0 R C 4 H10	JIS Z 3313	: T55 2 T15-0CA H10
EN ISO 17632-B:2008	: T55 2 T15-0CA H10		

Description

- It is designed for welding of 520MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It has good porosity resistance and is applicable for fillet welding of inorganic zinc-primer coated steels

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.54	1.57	0.014	0.011	0.40

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				0℃	-20℃	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
JIS Z 3313	min. 460	550~740	min. 17		≥ 27	
Example	540	630	26	100	60	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200℃ in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

JIS, CE

K-81T

For 560MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T50 3 1Ni P C 1 H5	KS D 7104	: YFW-C602R
EN ISO 17632-B:2008	: T55 3 T1-1CA-N2 H5	JIS Z 3313	: T57 3 T1-1CA-N2 H5
AWS A5.29-07	: E81T1-Ni1C		

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding with 1.0% Ni component
- It provides a good wettability along with high impact values at low temperatures (-40°C)

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
CO ₂	0.02	0.51	1.28	0.014	0.011	1.04	0.20

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20°C	-30°C	
AWS A5.29	min. 470	550~690	min. 19		≥ 27	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
Example	580	630	28	75	50	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200°C in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	4YSAH5	4YSH5	I/YMS(H5)	4YH5S	4YSH5	KSW54GH5	RSW54GHHH

* Others : RINA, CWB, CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T50 4 1Ni P M 1 H10	KS D 7104	: YFW-A604R
EN ISO 17632-B:2008	: T55 4 T1-1MA-N2 H10	JIS Z 3313	: T57 4 T1-1MA-N2-U H10
AWS A5.29-07	: E81T1-Ni1M		

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding with 1.0% Ni component
- It provide good wet-in capabilities along with high impact values at low temperatures (-40℃)

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
Mix	0.03	0.35	1.17	0.013	0.010	0.92	0.20

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-40℃	
AWS A5.29	min. 470	550~690	min. 19		≥ 27	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
Example	560	650	28	120	100	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When you use to Ar+CO₂ mixture gas, you should be lower 1~2 voltage than 100% CO₂ gas

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-80ST

For 560MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T50 3 1Ni R C 4 H10	KS D 7104	: YFW-C602R
EN ISO 17632-B:2008	: T55 3 T1-0CA-N2 H10	JIS Z 3313	: T57 3 T1-0 C A-N2 H10
AWS A5.29-07	: E80T1-Ni1C		

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications (ASTM A537, JIS SM520/540/570)
- Wire is a titania type of flux cored wire for all-position welding with 1% Ni component
- It has very efficient welding due to higher deposition rate particularly and also has easy slag removal.
- Overall welding characteristics except tensile strength is very similar with the K-70ST

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.48	1.42	0.012	0.013	0.91

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-30℃	
AWS A5.29	min. 470	550~690	min. 19		≥ 27	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
Example	560	637	26	80	45	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input.

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

JIS, CE

Classifications

EN ISO 17632-A:2008	: T50 3 1Ni RC 4 H5	KS D 7104	: YFW-C602M
EN ISO 17632-B:2008	: T55 3 T1-OCA-N2 H5	JIS Z 3313	: T57 3 T1-OCA-N2 H10
AWS A5.29-07	: E80T1-Ni1C		

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- It provides excellent usability with stable arc, low spatter levels and deposition rate is much higher than a titania type

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
CO ₂	0.03	0.35	1.17	0.014	0.011	0.92	0.20

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20°C	-30°C	
AWS A5.29	min. 470	550~690	min. 19		≥ 27	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
Example	590	650	28	120	100	CO ₂

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420
(Amp.) HF (PC/2G)	180 ~ 300	180 ~ 350	220 ~ 400

- When heat input is excessive, the impact value tends to decrease. Therefore, perform welding with selecting proper heat input.

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

JIS, CE

K-82T

For 560MPa high tensile steel

Classifications

EN ISO 17632-A:2008	: T50 4 2Ni P C 1 H5	AWS A5.29-07	: E81T1-Ni2C
EN ISO 17632-B:2008	: T55 4 T1-1CA-N5-U H5	JIS Z 3313	: T57 4 T1-1CA-N5-U H5

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding with 2.0% Ni component
- It feature excellent mechanical properties, easy slag removal, low spatter generation, smooth bead shape and high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.35	1.17	0.012	0.010	2.02

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30℃	-40℃	
AWS A5.29	min. 470	550~690	min. 19	≥ 27		
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 47	
Example	584	673	24	120	50	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200℃ in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

Classifications

EN ISO 17632-A:2008	: T50 4 2Ni P M 1 H10	AWS A5.29-07	: E81T1-Ni2M
EN ISO 17632-B:2008	: T55 4 T1-1MA-N5-U H10	JIS Z 3313	: T57 4 T1-1MA-N5-U H10

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, shipbuilding, offshore structures, bridges and general fabrications
- Wire is a titania type of flux cored wire for all-position welding with 2.0% Ni component
- It features excellent mechanical properties, easy slag removal, low spatter generation, smooth bead shape and high X-ray safety

Welding positions**Polarity & shielding gas**

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
Mix	0.03	0.55	1.26	0.013	0.010	1.92

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30℃	-40℃	
AWS A5.29	min. 470	550~690	min. 19		≥ 27	
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
Example	573	655	24	113	75	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200℃ in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

KX-80D2M

For 560MPa high tensile steel (Non slag type MCW)

Classifications

AWS A5.28-07 : E80C-G

Description

- It is designed for welding of 560MPa high tensile steel with outstanding mechanical properties
- Typical applications include sending oil pipe, machineries, pressure vessels and creep resistance of high temperature
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- Slag quantity is almost the same as a solid wire and multiple pass welding can be performed without removing slag

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Mo
Mix	0.04	0.45	1.50	0.012	0.010	0.50

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -10°C	Remarks
AWS A5.28		min. 550	min. 22		
Example	620	680	27	45	Mix

Notes on usage and welding condition

	Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	140 ~ 300	160 ~ 360	180 ~ 420	
(Amp.) HF (PC/2G)	(24 ~ 32)	(25 ~ 33)	(26 ~ 35)	

Package

	Dia. (mm)	1.2	1.4	1.6
Spool (kg)		5, 12.5, 15, 20		
Pailpack (kg)		100 ~ 300		

Classifications

EN ISO 18276-B:2006	: T62 4 T1-1CAP-G H5	KS D 7104	: YFW-C604R
AWS A5.29-07	: E91T1-G H4	JIS Z 3313	: T62 4 T1-1CAP-N2-U H5

Description

- It is designed for welding of 620MPa high tensile steel for low temperature service
- Typical applications include many high-strength low alloy such as steel ASTM A302, A572, A575, A734
- Wire is a titania type of flux cored wire for all-position welding and it makes good low temperature toughness after PWHT at low temperatures down to -40°C
- It provides smooth bead shape, easy slag removal, low spatter generation

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.42	1.37	0.012	0.010	0.93

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-10°C	-40°C	
AWS A5.29	min. 540	620~760	min. 17			
EN ISO 18276-B	min. 530	620~820	min. 15		≥ 27	
Example (CO ₂)	650	720	23	135	100	As weld 620°Cx2Hr
	610	660	26	120	85	

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200°C in order to prevent crack at low temperatures

Package

Dia.	(mm)	1.2	1.4	1.6
Spool	(kg)	5, 12.5, 15, 20		
Pailpack	(kg)	100 ~ 300		

Approvals

JIS, CE

KX-100K3M

For 690MPa high tensile steel

Classifications

EN ISO 18276-A:2006 : T62 2 Mn2NiMo M M 4 H5 AWS A5.28-07 : E100C-K3M
 EN ISO 18276-B:2006 : T69 2 T15-OMP-N3M2 H5

Description

- It is designed for welding of 690MPa high tensile steel with outstanding mechanical properties
- Typical applications include pipe line, wear resistance steel such as API 5L, X70, X80, EN 10208-2 L480, L550, EN 10137-2 S550, S620
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- Slag quantity is almost the same as a solid wire and multiple pass welding can be performed without removing slag

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
Mix	0.03	0.45	1.70	0.014	0.010	1.50	0.40

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-5℃	-20℃	
AWS A5.28 Example	min. 610 685	min. 690 779	min. 16 18.4	88	76	Mix

Notes on usage and welding condition

Dia.(mm)	1.2	1.4	1.6
Current F (PA/1G)	160 ~ 340	200 ~ 380	240 ~ 420
(Amp.) HF (PC/2G)	(24 ~32)	(25 ~33)	(26 ~35)

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

Classifications

EN ISO 18276-A:2006	: T69 2 Mn2NiMo P C 1 H5	AWS A5.29-07	: E110T1-K3C
EN ISO 18276-B:2006	: T76 2 T1-1CA-N3M2 H5	JIS Z 3313	: T76 2 T1-1CA-N3M2 H5

Description

- It is designed for welding of 760MPa high tensile steel with outstanding mechanical properties
- Typical applications include high tensile steels that will be used a low temperature environment (ASTM A514; A517; A710, JIS G 3128 SHY, HY-80 Grade)
- Wire is a titania type of flux cored wire for all-position welding
- The weld metal contains about 2.0%Ni and has good impact value at low temperatures
- It is compared to a low alloy E11018M electrode, higher deposition rates

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
CO ₂	0.04	0.51	1.72	0.011	0.009	2.04	0.42

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20℃ -40℃	Remarks
AWS A5.29	min. 680	760~900	min. 15	≥ 27	
EN ISO 18276-B	min. 680	760~960	min. 13	≥ 27	
Example	751	834	21	100	75 CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200℃ in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS
CO ₂	E110T1-K3H5

* Others : CWB, CE

K-110TK3M

For 760MPa high tensile steel

Classifications

EN ISO 18276-A:2006	: T69 2 Mn2NiMo P M 1 H5	AWS A5.29-07	: E111T1-K3M
EN ISO 18276-B:2006	: T76 2 T1-1MA-N3M2 H5	JIS Z 3313	: T76 2 T1-1MA-N3M2 H5

Description

- It is designed for welding of 760MPa high tensile steel with outstanding mechanical properties
- Typical applications include high tensile steels that will be used a low temperature environment (ASTM A514; A517; A710, JIS G 3128 SHY, HY-80 Grade)
- Wire is a titania type of flux cored wire for all-position welding
- The weld metal contains about 2.0%Ni and has good impact value at low temperatures
- It is compared to a low alloy E11018M electrode, higher deposition rates

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
Mix	0.04	0.48	1.65	0.010	0.008	2.00	0.45

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) 0°C -20°C	Remarks
AWS A5.29	min. 680	760~900	min. 15	≥ 27	
EN ISO 18276-B	min. 680	760~960	min. 13	≥ 27	
Example	740	785	19	100 80	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200°C in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Classifications

EN ISO 18276-A:2006	: T69 5 Mn2NiCrMo B M 4 H5	AWS A5.29-07	: E110T5-K4M
EN ISO 18276-B:2006	: T76 5 T5-0MA-N4C1M2 H5	JIS Z 3313	: T76 5 T5-0MA-N4C1M2 H5

Description

- It is designed for welding of 760MPa high tensile steel with outstanding mechanical properties
- Typical applications include low alloy steel, quenched and tempered high strength steels such as ASTM A514, A517, HY-100 Grade
- Wire is a fully basic type of flux cored wire for flat and horizontal position welding
- It provides soft welding arc, high deposition rate and low spatter generation

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo
Mix	0.03	0.35	1.43	0.44	1.85	0.42

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40°C	-50°C	Remarks
AWS A5.29	min. 680	760~900	min. 15		≥ 27	
EN ISO 18276-B	min. 680	760~960	min. 13		≥ 27	
Example	830	875	18	72	50	Mix

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In case of heavy plate welding, preheat and maintain interpass temperature at 100~200°C in order to prevent crack at low temperatures

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)		5, 12.5, 15, 20	
Pailpack (kg)		100 ~ 300	

Approvals

CE, JIS, KS

K-120TG

For 840MPa high tensile steel

Classifications

AWS A5.29-07 : E121T1-G

Description

- It is designed for welding of 840MPa high tensile steel with outstanding mechanical properties
- Typical applications include machineries, bridges and military equipment (PFS 700; HSB 800; HSLA-100)
- Because diffusible hydrogen level is controlled under 3ml/100g in the weld metal, it has excellent crack resistance and high strength

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni	Mo
CO ₂	0.03	0.39	1.69	0.010	0.006	2.66	0.67

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20°C	-40°C	
AWS spec. apply	792	864	19	85	50	
PFS-700steel apply	780	835	19	75	60	CO ₂

※ This results are mechanical properties after aging treatment at 100°C/48hr

Notes on usage and welding condition

	Dia.(mm)	1.2	1.4	1.6
Current	F (PA/1G)	160 ~ 340	200 ~ 380	240 ~ 420
(Amp.)	HF (PC/2G)	(24 ~ 32)	(25 ~ 33)	(26 ~ 35)
	VU (PF/3G)	140 ~ 180	(22 ~ 26)	

Package

	Dia. (mm)	1.2	1.4
Spool (kg)		5, 12.5, 15, 20	
Pailpack (kg)		100 ~ 300	

Approvals

KR

Classifications

EN ISO17632-A:2008	: T42 Z Y N 4	KS D 7104	: YFW-S50GB
EN ISO17632-B:2008	: T49 Z T4-0NA	JIS Z 3313	: T49 T4-0 N A
AWS A5.20-07	: E70T-4		

Description

- It is designed for welding of 490MPa high tensile steel and self-shielded wire to facilitate welding outdoors
- Typical applications include general fabrication and structural work requiring no impact properties
- It has good arc stability, low spatter generation, high efficiency, good bead shape and slag removal
- It has to use DECP (electrode positive)

Welding positions



Polarity & shielding gas

- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Al
	0.17	0.22	0.80	0.012	0.007	1.32

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.20	min. 390	490~670	min. 22	
EN ISO 17632-B	min. 390	490~670	min. 18	
Example	460	540	23	

Notes on usage and welding condition

Dia.(mm)	2.0	2.4	3.2
Current F (PA/1G)	260 ~ 360	280 ~ 360	300 ~ 400
(Amp.) HF (PC/2G)	(23 ~25)	(24 ~25)	(25 ~27)

- Self-shielded FCW is to more generate a fume than titania type FCW So you have to use the ventilation system in small space

Package

Dia. (mm)	1.6	2.4	3.2
Spool (kg)	15, 20		
Pailpack (kg)		20, 25, 30	

Approvals

CE, JIS

K-NGS10

For 490MPa high tensile steel (Self-Shielded, single pass)

Classifications

EN ISO17632-A:2008	: T42 Z V N 4	KS D 7104	: YFW-S50GB
EN ISO17632-B:2008	: T49 Z T10-1NS	JIS Z 3313	: T49 T10-0 N S-G
AWS A5.20-07	: E70T-10		

Description

- It is designed for welding of 490MPa high tensile steel and self-shielded wire to facilitate welding outdoors
- Typical applications include general fabrication and structural work requiring no impact properties (ASTM A36 Gr. All; A109 Gr. All; A283 Gr. A,B,C,D; A284 C,D; A285 Gr. A,B,C; A288 Gr. 1; A372 type I; A500 Gr. All; A501 Gr. all)
- It has good arc stability, low spatter generation, high efficiency, good bead shape and slag removal
- It has to use DECEN (electrode negative)

Welding positions



Polarity & shielding gas

- DCEN (DC-)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Al
	0.10	0.11	0.53	0.015	0.010	1.10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.20		min. 490		
EN ISO 17632-B	min. 390	490~670	min. 18	
Example	460	530	22	

Notes on usage and welding condition

Dia.(mm)	2.0	2.4	3.2
Current F (PA/1G)	260 ~ 360	280 ~ 360	300 ~ 400
(Amp.) HF (PC/2G)	(23 ~25)	(24 ~35)	(25 ~27)

- Self-shielded FCW is to more generate a fume than titania type FCW So you have to use the ventilation system in small space

Package

Dia. (mm)	1.6	2.4	3.2
Spool (kg)	15, 20		
Pailpack (kg)		20, 25, 30	

Approvals

JIS

Classifications

EN ISO 17632-A:2008	: T42 Z Y N 1	KS D 7104	: YFW-S50GB
EN ISO 17632-B:2008	: T49 Z T11-1NA	JIS Z 3313	: T49 T7-1 N A
AWS A5.20-07	: E71T-11		

Description

- It is designed for welding of 490MPa high tensile steel and self-shielded wire to facilitate welding outdoors
- Typical applications include general fabrication and structural work requiring no impact properties (ASTM A36 Gr. All; A109 Gr. All; A283 Gr. A,B,C,D; A284 C,D; A285 Gr. A,B,C; A288 Gr. 1; A372 type I ; A500 Gr. All; A501 Gr. all)
- It has good arc stability, low spatter generation, high efficiency, good bead shape and slag removal
- It has to use DECN (electrode negative)

Welding positions



Polarity & shielding gas

- DCEN (DC-)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Al
	0.10	0.10	0.55	0.015	0.006	1.21

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.20	min. 390	490~670	min. 20	
EN ISO 17632-B	min. 390	490~670	min. 18	
Example	500	530	23	

Notes on usage and welding condition

Dia.(mm)	0.9	1.2	1.6
Current F (PA/1G)	80 ~ 120	120 ~ 180	180 ~ 270
(Amp.) HF (PC/2G)	(18 ~ 22)	(21 ~ 23)	(22 ~ 24)
VU (PF/3G)	100 ~ 160	160(22 ~ 25)	

- Self-shielded FCW is to more generate a fume than titania type FCW So you have to use the ventilation system in small space

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15, 20		

Approvals

CE, JIS

K-NGS

For 490MPa high tensile steel (Self-Shielded, multi pass)

Classifications

EN ISO 17632-A:2008	: T42 Z V N 1	KS D 7104	: YFW-S50GB
EN ISO 17632-B:2008	: T49 Z TG-1NS	JIS Z 3313	: T49 TG-1 N S-G
AWS A5.20-07	: E71T-GS		

Description

- It is designed for welding of 490MPa high tensile steel and self-shielded wire to facilitate welding outdoors
- Typical applications include general fabrication and structural work requiring no impact properties (ASTM A36 Gr. All; A109 Gr. All; A283 Gr. A,B,C,D; A284 C,D; A285 Gr. A,B,C; A288 Gr. 1; A372 type I ; A500 Gr. All; A501 Gr. all)
- It has good arc stability, low spatter generation, high efficiency, good bead shape and slag removal
- It has to use DECN (electrode negative)

Welding positions



Polarity & shielding gas

- DCEN (DC-)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Al
	0.10	0.10	0.55	0.014	0.006	1.21

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.20		min. 490		
EN ISO 17632-B	min. 390	490~670	min. 18	
Example	489	520	22	

Notes on usage and welding condition

Dia.(mm)	0.9	1.2	1.6
Current F (PA/1G)	80 ~ 120	120 ~ 180	240 ~ 280
(Amp.) HF (PC/2G)	(18 ~22)	(21 ~23)	(22 ~24)
VU (PF/3G)	100 ~ 160	(22 ~25)	

- Self-shielded FCW is to more generate a fume than titania type FCW So you have to use the ventilation system in small space

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15, 20		

Approvals

CE, JIS

Classifications

EN ISO 17632-A:2008	: T46 0 P C 1 H10	JIS Z 3313	: T49 0 T1-1CA-U H10
EN ISO 17632-B:2008	: T49 0 T1-1CA-U H10		

Description

- It is designed for the mild and medium tensile steels that are used to for flue gas desulfurization facilities
- The weld metal contain Cu, Co alloys and has good anticorrosion against sulfuric acid
- Wire is a titania type of flux cored wire for all-position welding
- It features excellent mechanical properties, easy slag removal, low spatter generation, high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cu	Co
CO ₂	0.02	0.40	1.00	0.013	0.010	0.38	0.10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	Temp/(500℃) (MPa)	El. (%)	IV (J) 0℃	Remarks
EN ISO 17632-B	min. 390	490~670		min. 22	≥ 47	
JIS Z 3313	min. 400	490~670		min. 18	≥ 47	
Example	520	580	420	29	64	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

K-71TW

For atmospheric corrosion resisting steel

Classifications

EN ISO 17632-A:2008	: T42 3 P C 1 H10	KS D 7109	: YFA-50W
EN ISO 17632-B:2008	: T49 3 T1-1CA-NCC1 H10	JIS Z 3320	: YFA-50W
AWS A5.29-07	: E81T1-W2C		

Description

- It is designed for welding of 490MPa weather-proof steels
- The weld metal contain Cr, Ni, Cu alloys and has good weather-proof properties
- Wire is a titania type of flux cored wire for all-position welding
- It features excellent mechanical properties, easy slag removal, low spatter generation, high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Cu
CO ₂	0.05	0.54	1.10	0.55	0.45	0.42

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-30℃	
AWS A5.29	min. 470	550~690	min. 19		≥ 27	
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	510	592	21	52	40	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Classifications

EN ISO 17632-A:2008	: T50 3 P C 1 H10	KS D 7109	: YFA-58W
EN ISO 17632-B:2008	: T55 3 T1-1CA-NCC1 H10	JIS Z 3320	: YFA-58W
AWS A5.29-07	: E81T1-W2C		

Description

- It is designed for welding of 560MPa weather-proof steels
- It has better CVN toughness at low temperatures when compared to the K-71TW
- Wire is a titania type of flux cored wire for all-position welding
- It features excellent mechanical properties, easy slag removal, low spatter generation, high X-ray safety

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Cu
CO ₂	0.05	0.54	1.20	0.55	0.55	0.45

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20℃ -30℃	Remarks
AWS A5.29	min. 470	550~690	min. 19	≥ 27	
EN ISO 17632-B	min. 460	550~740	min. 17	≥ 27	
Example	550	630	28	75 60	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-81TA1

For heat-resisting steel (0.5% Mo)

Classifications

EN ISO 17634-A:2008	: T/Mo P C 1	KS D 7121	: YFM-C
EN ISO 17634-B:2008	: T55 Z T1-1C-2M3	JIS Z 3318	: YFM-C
AWS A5.29-07	: E81T1-A1C		

Description

- It is designed for welding of 560MPa 0.5% Mo steels used for high pressure vessels, oil refining industries, steam pipes of boilers etc
(ASTM A161 T-1, A182 F1, A204 Gr.A/B, A234 Gr. WP1, A336 Gr.F1 A352 Gr. LC1, A356 Gr. 2, A426 Gr. CP1, CP15, A533 Gr.A1)
- The weld metal contain about 0.5% Mo so it has good crack and heat resistance
- Wire is a titania type of flux cored wire for all-position welding
- It has very efficient welding due to higher deosition rate particularly

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Mo
CO ₂	0.02	0.55	1.21	0.008	0.010	0.53

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 470	550~690	min. 19	
EN ISO 17634-B	min. 460	550~740	min. 17	
Example (CO ₂)	531	875	18	620°C×1Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 100~200°C and PWHT at 620°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

Classifications

EN ISO 17634-A:2008	: T/CrMo 1 P C 1	KS D 7121	: YF1CM-C
EN ISO 17634-B:2008	: T55 Z T1-1C-1CM	JIS Z 3318	: YF1CM-C
AWS A5.29-07	: E81T1-B2C		

Description

- It is designed for welding of 560MPa 1.25%Cr-0.5% Mo steels used for high pressure vessels, oil refining industries, steam pipes of boilers etc (ASTM A182 Gr. F2, F11, F12, A193 Gr. B7, A234 Gr. WP11, WP12, A250 Gr. T11, A336 Gr. F11, F12 A356 Gr. 5, 6, 8, 9; A387 Gr. 2, 11, 12, A389 Gr. C23, A672 Gr. H75, 80)
- The weld metal contain about 1.25%Cr, 0.5%Mo and has good crack and heat resistance
- Wire is a titania type of flux cored wire for all-position welding
- It has excellent creep rupture strength, easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.05	0.44	1.08	0.008	0.009	1.25	0.53

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 470	550~690	min. 19	
EN ISO 17634-B	min. 460	550~740	min. 17	
Example (CO ₂)	531	600	25	690°Cx1Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 150~300°C and PWHT at 690°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-81TB2L

For heat-resisting steel (1.25%Cr-0.5% Mo)

Classifications

EN ISO 17634-A:2008	: T/CrMo 1L P C 1	KS D 7121	: YF1CM-C
EN ISO 17634-B:2008	: T55 Z T1-1C-1CML	JIS Z 3318	: YF1CM-C
AWS A5.29-07	: E81T1-B2LC		

Description

- It is designed for welding of 560MPa 1.25%Cr-0.5% Mo steels used for high pressure vessels, oil refining industries, steam pipes of boilers etc
(ASTM A182 Gr. F2, F11, F12, A193 Gr. B7, A234 Gr. WP11, WP12, A250 Gr. T11, A336 Gr. F11, F12 A356 Gr. 5, 6, 8, 9; A387 Gr. 2, 11, 12, A389 Gr. C23, A672 Gr. H75, 80)
- The weld metal contain about 1.25%Cr, 0.5%Mo, low carbon and has good crack and heat resistance
- Wire is a titania type of flux cored wire for all-position welding
- It has excellent creep rupture strength, easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.03	0.43	1.11	0.008	0.010	1.28	0.56

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 470	550~690	min. 19	
EN ISO 17634-B	min. 460	550~740	min. 17	
Example (CO ₂)	531	600	25	690°Cx1Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 150~300°C and PWHT at 690°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

Classifications

EN ISO 17634-A:2008	: T/CrMo 2 P C 1	KS D 7121	: YF2CM-C
EN ISO 17634-B:2008	: T62 Z T1-1C-2C1M	JIS Z 3318	: YF2CM-C
AWS A5.29-07	: E91T1-B3C		

Description

- It is designed for welding of 620MPa 2.25%Cr-1% Mo steels used for high pressure vessels, oil refining industries, steam pipes of boilers etc (ASTM A182 Gr. F21,F22,F22a, A193 Gr. B16, A213 Gr. T22, A250 Gr. T22, A336 Gr. F21,F22, A356 Gr. 10, A387 Gr. 21,22; A389 Gr. C24, A542 Gr. 2A, 2B, A691 Gr. 12)
- The weld metal contain about 2.25%Cr, 1%Mo and has good crack and heat resistance
- Wire is a titania type of flux cored wire for all-position welding
- It has excellent creep rupture strength, easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.05	0.51	1.18	0.008	0.011	2.25	1.03

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 540	620~760	min. 17	
EN ISO 17634-B	min. 530	620~820	min. 15	
Example (CO ₂)	630	680	24	690°Cx1Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 200~350°C and PWHT at 690°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-91TB3L

For heat-resisting steel (2.25%Cr-1% Mo)

Classifications

EN ISO 17634-A:2008	: T/CrMo 2L P C 1	KS D 7121	: YF2CM-C
EN ISO 17634-B:2008	: T62 Z T1-1C-2C1ML	JIS Z 3318	: YF2CM-C
AWS A5.29-07	: E91T1-B3LC		

Description

- It is designed for welding of 620MPa 2.25%Cr-1% Mo steels used for high pressure vessels, oil refining industries, steam pipes of boilers etc
(ASTM A182 Gr. F21,F22,F22a, A193 Gr. B16, A213 Gr. T22, A250 Gr. T22, A336 Gr. F21,F22, A356 Gr. 10, A387 Gr. 21,22; A389 Gr. C24, A542 Gr. 2A, 2B, A691 Gr. 12)
- The weld metal contain about 2.25%Cr, 1%Mo, low carbon and has good crack and heat resistance
- Wire is a titania type of flux cored wire for all-position welding
- It has excellent creep rupture strength, easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.03	0.51	1.18	0.007	0.011	2.25	1.03

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 540	620~760	min. 17	
EN ISO 17634-B	min. 530	620~820	min. 15	
Example (CO ₂)	630	680	25	690°C×1Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 200~350°C and PWHT at 690°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

Classifications

EN ISO 17634-A:2008	: T/CrMo 5 P M 1	AWS A5.29-07	: E81T1-B6C
EN ISO 17634-B:2008	: T55 Z T1-1M-5CM		

Description

- It is designed for welding of 560MPa 5%Cr-0.5% Mo steels used for high pressure vessels, oil refining industries, steam pipes of boilers etc (ASTM A213-T5, A335-P5)
- The weld metal contain about 5%Cr, 0.5%Mo and has good crack and heat resistance
- Wire is a titania type of flux cored wire for all-position welding
- It has excellent creep rupture strength, easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.06	0.58	0.42	0.008	0.009	4.52	0.48

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) R.T. (about 24°C)	PWHT
AWS A5.29	min. 470	550~690	min. 19		
EN ISO 17634-B	min. 460	550~740	min. 17		
Example (CO ₂)	550	660	20	70	745°Cx2Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 200~350°C and PWHT at 745°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-91TB9

For heat-resisting steel (9%Cr-1%Mo-V)

Classifications

AWS A5.29-07

: E91T1-B9M

Description

- It is designed for welding of 620MPa 9%Cr-1% Mo-V steels used for high pressure vessels, oil refining industries etc
(ASTM A189 Gr. F91, A199 Gr. T91, A200 Gr. T91, A213 Gr. T91, A335 Gr. P91, A369 Gr. FP91, A387 Gr. 91)
- The weld metal contains about 9%Cr-1%Mo-Ni-V component, so excellent creep rupture strength
- It has easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Mo	V
Mix	0.10	0.23	0.72	9.10	1.00	0.18

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 540	620~760	min. 17	
Example (Mix)	630	680	24	760°Cx2Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 200~350°C and PWHT at 760°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

Classifications

EN ISO 17634-B:2008 : T69 Z T1-1M-9C1MV AWS A5.29-07 : E91T1-B9M

Description

- It is designed for welding of 700MPa 9%Cr-1% Mo-V steels used for high pressure boilers, chemical and oil refinery plants
(ASTM A189 Gr. F91, A199 Gr. T91, A200 Gr. T91, A213 Gr. T91, A335 Gr. P91, A369 Gr. FP91, A387 Gr. 91)
- K-101TB9 is proposed as AWS E101T1-B9M due to no current national standards
- It has easy slag removal and good weld soundness

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Mo	V
Mix	0.12	0.26	0.72	9.60	1.00	0.20

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	PWHT
AWS A5.29	min. 610	690~830	min. 16	
EN ISO 17634-B	min. 565	690~890	min. 14	
Example (Mix)	720	810	18	760°Cx2Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- Preheat at 200~350°C and PWHT at 760°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-71UT

For 490MPa low temperature service steel

Classifications

EN ISO 17632-A:2008	: T46 4 P C 1 H5	KS D 7104	: YFL-C504R
EN ISO 17632-B:2008	: T49 4 T1-1CA-U H5	JIS Z 3313	: T49 4 T1-1CA-U H5
AWS A5.20-07	: E71T-1C/-9CJ H4		

Description

- It is designed for welding of 490MPa low temperature steels
- Typical applications include railcar, automotive machinery, shipbuilding, bridges, heavy equipment etc
- Wire is a titania type of flux cored wire for all-position welding
- It features excellent mechanical properties, easy slag removal, low spatter generation, and good impact value at low temperatures down to -40°C

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.04	0.30	1.35	0.014	0.010	0.39

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30°C	-40°C	
AWS A5.20	min. 390	490~670	min. 22	≥ 47		
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 27	
Example	540	600	27	76	55	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	4YSAH5	4S4YSH5	I/YMS(H5)	4YH5S	4YSH10	KSW54GH5	RSW54GHHH

* Others : RS, CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T46 4 P C 1 H5	KS D 7104	: YFL-C504R
EN ISO 17632-B:2008	: T49 4 T12-1CAP-N1-U H5	JIS Z 3313	: T49 4 T1-1CAP-N1-U H5
AWS A5.20-07	: E71T-12CJ H4		

Description

- It is designed for welding of 490MPa low temperature steels (NACE/API steel)
- Typical applications include railcar, automotive machinery, shipbuilding, bridges, heavy equipment etc
- Wire is a titania type of flux cored wire for all-position welding
- It features excellent mechanical properties, easy slag removal, low spatter generation, and good impact value at low temperatures down to -40°C in the PWHT conditions

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.02	0.45	1.41	0.010	0.009	0.41

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30°C	-40°C	
AWS A5.20	min. 390	490~670	min. 22	≥ 47		
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 47	
Example AS	578	612	25	138	119	
(CO ₂) PWHT	558	600	27	69	52	620°Cx2Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Paillpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	4YSAH5 E71T-12J	4YSH5	IV YMS(H5)	4YH5S	4YSH5	KSW54GH5	RSW54GHHH

* Others : CE, JIS, KS

K-71TSRM

For 490MPa low temperature service steel (PWHT)

Classifications

EN ISO 17632-A:2008	: T46 4 P M 1 H5	KS D 7104	: YFL-A504R
EN ISO 17632-B:2008	: T49 4 T12-1MAP-N1-U H5	JIS Z 3313	: T49 4 T1-1MAP-N1-U H5
AWS A5.20-07	: E71T-12MJ H4		

Description

- It is designed for welding of 490MPa low temperature steels (NACE/API steel)
- Typical applications include railcar, automotive machinery, shipbuilding, bridges, heavy equipment etc
- Wire is a titania type of flux cored wire for all-position welding
- It features excellent mechanical properties, easy slag removal, low spatter generation, and good impact value at low temperatures down to -40°C in the PWHT conditions

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
Mix	0.03	0.50	1.50	0.008	0.010	0.42

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30°C	-40°C	
AWS A5.20	min. 390	490~670	min. 22	≥ 47		
EN ISO 17632-B	min. 390	490~670	min. 18		≥ 47	
Example AS	580	610	27	128	85	
(CO ₂) PWHT	560	600	27	74	55	620°Cx2Hr

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Classifications

EN ISO 17632-A:2008	: T46 3 P C 1 H5 T46 3 P M 1 H10	AWS A5.20-07	: E71T-1C/1M E71T-12C/12M H4
EN ISO 17632-B:2008	: T49 3 T12-1CA H5 T49 3 T12-1MA H10	JIS Z 3313	: T49 3 T1-1C/MA H10

Description

- It is designed for welding of 490MPa tensile strength steel
- Typical applications include shipbuilding, pressure vessel, bridges, construction industries etc
- Wire is a titania type of flux cored wire for all-position welding
- It features easy slag removal, low spatter generation, good weld soundness

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S
CO ₂	0.03	0.60	1.00	0.013	0.011

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20°C -30°C	Remarks
AWS A5.20	min. 390	490~670	min. 22	≥ 47	
EN ISO 17632-B	min. 390	490~670	min. 18	≥ 27	
Example	580	610	27	130 100	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C
- When you use to Ar+CO₂ mixture gas, you should be lower 1~2 voltage than 100% CO₂ gas

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE

K-80TK2

For 560MPa low temperature service steel (1.5% Ni)

Classifications

EN ISO 17632-A:2008	: T50 6 1.5Ni M C 4 H5	KS D 7104	: YFL-C506M
EN ISO 17632-B:2008	: T55 6 T1-0CA-N3-U H5	JIS Z 3313	: T55 6 T15-0CA-N3-U H5
AWS A5.29-07	: E80T1-K2C H4		

Description

- It is designed for welding of 560MPa high tensile steel for low temperature service
- Typical applications include offshore structures, LNG and LPG carriers and storage tank
- Wire is a metal type of flux cored wire for flat and horizontal position welding
- The weld metal contain about 1.5% Ni so, good impact value at low temperatures down to -60°C
- It features good porosity resistance and easy slag removal and deposition rate is higher than a titania type

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.45	1.50	0.014	0.010	1.50

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30°C	-60°C	
AWS A5.29	min. 470	550~690	min. 19	≥ 27		
EN ISO 17632-B	min. 460	550~740	min. 17	≥ 27		
Example	550	640	25	100	50	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)		5, 12.5, 15, 20	
Pailpack (kg)		100 ~ 300	

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	4YSA4Y400SAH5 47J/-60°C	5Y40SH5	VY40MS(H5) NV 2(4)-4L	6Y40H5S	5Y40SH10	KSWL3GH5	L 3SGH5

* Others : CE, JIS, KS

Classifications

EN ISO 17632-A:2008	: T50 6 1.5Ni P C 1 H5	KS D 7104	: YFL-C506R
EN ISO 17632-B:2008	: T55 6 T1-1CA-N3-U H5	JIS Z 3313	: T55 6 T1-1CA-N3-U H5
AWS A5.29-07	: E81T1-K2C H4		

Description

- It is designed for welding of 560MPa high tensile steel for low temperature service
- Typical applications include offshore structures, LNG and LPG carriers and storage tank
- Wire is a metal type of flux cored wire for all-position welding
- The weld metal contain about 1.5% Ni so, good impact value at low temperatures down to -60°C
- It features good porosity resistance and easy slag removal and deposition rate is higher than a titania type

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.45	1.50	0.012	0.009	1.50

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30°C	-60°C	
AWS A5.29	min. 470	550~690	min. 19	≥ 27		
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 27	
Example	550	640	25	120	55	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)		5, 12.5, 15, 20	
Pailpack (kg)		100 ~ 300	

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	4YSA4Y400SAH5 47J/-60°C	5Y40SH5	IVY40MS(H5) -60	6Y40H5S	5Y40SH5	KSWL3GH5	L 3SGH5

* Others : RS, CE, JIS, KS

K-81TSR

For 560MPa low temperature service steel (PWHT, CTOD)

Classifications

EN ISO 17632-A:2008	: T50 6 1.5Ni P C 1 H5	KS D 7104	: YFL-C506R
EN ISO 17632-B:2008	: T55 6 T1-1CAP-N3-U H5	JIS Z 3313	: T55 6 T1-1CAP-N3-U H5
AWS A5.20-07	: E81T1-K2C H4		

Description

- It is designed for welding of 560MPa high tensile steel for low temperature service
- Typical applications include offshore structures, LNG and LPG carriers and storage tank
- Wire is a titania type of flux cored wire for all-position welding
- It features easy slag removal, low spatter generation, and good impact value at low temperature down to -60°C in the PWHT conditions

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.02	0.31	1.21	0.011	0.010	1.47

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-30°C	-60°C	
AWS A5.29	min. 470	550~690	min. 19	≥ 27		
EN ISO 17632-B	min. 460	550~740	min. 17		≥ 47	
Exmpl AS	570	640	25	125	90	620°Cx2Hr
PWHT	520	600	29	85	65	

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200°C

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS	BV	DNV	GL	LR	NK	KR
CO ₂	4YSA4Y400SAH5 47J/-60°C	5Y40SH5	VY40MS(H5)	6Y40H5S	5Y40SH5	KSWL3GH5	L3SGH5

* Others : CE, JIS, KS

Classifications

EN ISO 18276-A:2006	: T55 4 Mn1.5Ni P C 1 H5	KS D 7104	: YFL-C604R
EN ISO 18276-B:2006	: T62 4 T1-1CA-N3M1-U H5	JIS Z 3313	: T62 4 T1-1CA-N3M1-U H5
AWS A5.29-07	: E91T1-K2C H4		

Description

- It is designed for welding of 620MPa high tensile steel for low temperature service
- Typical applications include offshore structures, LNG and LPG carriers and storage tank
- Wire is a metal type of flux cored wire for all-position welding
- The weld metal contain about 1.5% Ni so, good impact value at low temperatures down to -60℃
- It features good weldability together with excellent properties for the semi-automatic and automatic welding of many higher strength steels

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Ni
CO ₂	0.03	0.45	1.27	0.012	0.009	1.45

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20℃ -40℃	Remarks
AWS A5.29	min. 540	620~760	min. 17	≥ 27	
EN ISO 17632-B	min. 530	620~820	min. 15	≥ 47	
Example	550	640	25	135 90	CO ₂

Notes on usage and welding condition

- Refer to page 185~187 for more information on usage
- In order to prevent crack at low temperatures, preheat and maintain interpass temperature at 100~200℃

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

Shielding gas	ABS
CO ₂	E91T1-K2C

* Others : CE

Electro Gas Welding

EGW single & tandem

Electro Gas Welding for 490MPa tensile steel (EGW)

EGW applications

The purpose of EGW is highly efficient welding for vertical-up butt welding for heavy plate. This process use the 100% CO₂ shielding gas and auto-carriage, it has excellent low temperature toughness at high heat input (200~270KJ/cm)

Welding wire type divide by single & tandem, should be used to suitable type wire



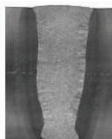
EGW welding machine



Face part



Root part



Welding shape

Description

- ① It is designed for welding of 490MPa high tensile steel for automatic V-up butt welding
- ② Wire provides high deposition rate with a welding wire due to high welding condition
- ③ It features excellent mechanical properties, easy slag removal, low spatter generation, good bead shape

Notes on usage and welding condition

- ① It should be used nloy DCEP polarity and 100% CO₂ shielding gas
- ② Once a wire was unpacked, the wire should be kept in an area of low humidity. If this note doesn't keep, it is possible to occur of weld defect

Speccification

Type	Brand name	AWS	Classification	JIS
For single	K-EG2 (2Y)	A5.26 EG70T-2		JIS Z 3319 YFEG-22C
	K-EG3 (6Y)	A5.26 EG70T-G		
For tandem	K-EG3	A5.26 EG70T-G		
	K-EG3R			

Electro Gas Welding

EGW single & tandem

Typical chemical composition of all-weld metal (%)

100% CO₂ Welding

		Chemical Composition of all-weld metal						
Spec.		C	Si	Mn	P	S	Ni	Mo
	K-EG2 (3Y, Single)	0.04	0.33	1.65	0.012	0.011	0.03	0.24
	K-EG3 (6Y, Single)	0.04	0.20	1.50	0.011	0.012	1.80	0.24
Tandem	K-EG3	0.04	0.20	1.50	0.014	0.009	1.50	0.14
	K-EG3R							

Typical mechanical properties of all-weld metal

100% CO₂ Welding

		Mechanical Properties				
Spec.		Y.S. (N/mm ²)	T.S. (N/mm ²)	El. (%)	IV (J)	Heat Input (KJ/cm)
Single	K-EG2 (3Y)	448	576	30	-20°C: 120	260.0
	K-EG3 (6Y)	475	597	28	-60°C: 80	246.0
Tandem	K-EG3	430	550	25	-20°C: 85	620.0
	K-EG3R				-40°C: 50	

Notes on usage and welding condition

Dia. (mm)		Polarity	1.6
Current (A)	Single	DC+	340 ~ 380 (34~38)
	Tandem	DC+, DC-	360 ~ 420 (36~40)

Welding speed : 3~4CPM, Shielding gas : 100% CO₂, 35ℓ /min

Welding positions



Package

Dia. (mm)	1.6
Spool (kg)	15, 20

K-250HT

For hardfacing (Hv250)

Classifications

EN ISO 14700:2005

: T Fe1

JIS Z 3326

: YF2A-C-250

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- In order to minimize cracking, should obey the preheat and interpass temperature
- It has low spatter generation, easy slag removal and reduced grinding time after work hardening

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr
CO ₂	0.07	0.50	1.59	0.013	0.011	1.30

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp(°C)	Remark
Example (CO ₂)	260	24	37	150	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

Classifications

EN ISO 14700:2005 : T Fe1 JIS Z 3326 : YF2A-C-300

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- In order to minimize cracking, should obey the preheat and interpass temperature
- It has low spatter generation, easy slag removal and reduced grinding time after work hardening

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr
CO ₂	0.09	0.68	1.54	0.014	0.013	1.10

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp(°C)	Remark
Example (CO ₂)	310	30	42	150	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

K-350HT

For hardfacing (Hv350)

Classifications

EN ISO 14700:2005 : T Fe1 JIS Z 3326 : YF2A-C-350

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include transfer rollers and idlers, crane wheels
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.12	0.45	1.37	0.015	0.011	1.30	0.20

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp(°C)	Remark
Example (CO ₂)	360	37	50	150	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

Classifications

EN ISO 14700:2005

: T Fe1

JIS Z 3326

: YF2A-C-450

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include transfer rollers and idlers, crane wheels
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions**Polarity & shielding gas**

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.12	0.45	1.37	0.013	0.010	1.30	0.20

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp(°C)	Remark
Example (CO ₂)	450	45	61	200	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

K-500HT

For hardfacing (Hv500)

Classifications

JIS Z 3326 : YF3B-C-500

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include transfer rollers and idlers, crane wheels
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.19	2.06	0.35	0.014	0.012	5.26	0.59

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp(°C)	Remark
Example (CO ₂)	510	50	66	200	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

Classifications

JIS Z 3326 : YF3B-C-600

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include crane wheels, blower blades, bucket lips, dredge parts etc
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.34	2.80	0.50	0.013	0.009	6.50	0.50

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp(°C)	Remark
Example (CO ₂)	610	55	73	200	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

K-700HT

For hardfacing (Hv700)

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include crane wheels, blower blades, bucket lips, dredge parts etc
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.40	3.20	0.60	0.012	0.010	7.00	0.80

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp (°C)	Remark
Example (CO ₂)	705	60	80	200	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

Description

- It is designed for heavy abrasion resistance with martensitic structure
- Typical applications include augers, bucket lips, conveyor screws, blower blades, dozer blades
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Mo
CO ₂	0.44	3.40	0.55	0.013	0.011	7.50	1.00

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp (°C)	Remark
Example (CO ₂)	780	63	87	200	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

K-CXA-40HT

For hardfacing (Hv350)

Classifications

EN ISO 14700:2005

: T Fe7

JIS Z 3326

: YF4A-G-350

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include tractor rollers, trunnions, crane wheels, track rails
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ni
Mix	0.05	0.25	0.30	0.014	0.009	12.00	4.20

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp (°C)	Remark
Example (Mix)	370	38	51	150	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

Classifications

EN ISO 14700:2005 : T Fe7 JIS Z 3326 : YF4A-G-350

Description

- It is designed for welding of metal to metal and underlaying welding of hardfacing
- Typical applications include tractor rollers, trunnions, crane wheels, track rails
- In order to minimize cracking, should obey the preheat and interpass temperature

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ni	Mo
Mix	0.05	0.39	0.49	0.01	0.010	12.10	3.90	1.10

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp (°C)	Remark
Example (Mix)	370	38	51	150	AS weld

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	10, 15, 20		

K-45CT

For S45C pipe welding

Description

- Hardness of weld-metal is determined by tempered temperature and time, as well as the dilution of base metal and high frequency heat treatment.
- In order to minimize cracking, should obey the preheat and interpass temperature
- It has low spatter generation, easy slag removal and reduced grinding time after work hardening

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ni	Mo
Mix	0.47	0.50	0.80	0.01	0.010	0.02	0.02	0.02

Typical mechanical properties of all-weld metal

	Hv	Typical value HRC	Hs	Interpass Temp (°C)	Remark
Example (Mix)	450~540	46~51	62~68	200	Tempering at 580°C after QT

Package

Dia. (mm)	1.2	1.6	3.2
Spool (kg)	10, 15, 20		
Pailpack (kg)	100 ~ 300		
POP (kg)	100 ~ 300		

Repair and Hard-facing welding

Forging Mold, Cement, Continuous casting roller

Repair and Hard-facing welding for Hot-rolling forging Mold

Class	Product	Dia. (mm)	Hardness (HRC)	Forging mold	Chemical composition(%)					
					C	Si	Mn	Cr	Ni	Mo
Hard Facing forging mold	K-40RT	1.6~3.2	35~45	Hammer	0.07	0.57	1.81	2.66	3.33	1.43
	K-58RT	1.6~3.2	50~60	Pre Hard facing	0.32	0.87	0.77	9.87	0.11	2.50
	K-63RT	1.6~3.2	45~55	Pre Cladding	0.15	0.94	0.83	9.65	2.00	1.70
	K-65RT	1.6~3.2	50~60	Pre Hard facing	0.24	0.84	0.61	9.10	1.80	2.5

Repair and Hard-facing welding for Continuous casting roller

Class	Product	Dia.(mm)	Hardness (HRC)	Feature	Welding Process
Hard Facing forging mold	K-CXA-40HT	1.2~1.6	32~38	Metal cored wire	Repairing welding (manual)
	K-CXA-41HT	1.2~1.6	32~38	Metal cored wire	
	K-12CrHT	2.0~3.2	32~38		
	K-13CrLT	2.0~3.2	35~42	Composite wire	SAW + FCW type (with EF-200F)
	K-13CrHT	2.0~3.2	35~45		
	K-13CrNiHT	2.0~3.2	38~44		
	K-15CrHT	2.0~3.2	20~25	Open-arc type	For the first layer
	K-430 O	2.0~3.2	20~25		Hard facing for the 2st and 3rd layers
	K-414 O	2.0~3.2	40~45	Open-arc type	

Repair and Hard-facing welding for Cement

Class	Product	Dia. (mm)	Hardness (HRC)	Chemical composition(%)				Feature
				C	Si	Mn	Cr	
Cement	K-HCRHT	2.0~3.2	55~62	5.2	1.0	2.5	28.5	High Cr- carbide type
	K-CCHT	2.0~3.2	52~58	4.5	0.5	0.9	26.5	
	K-MCHT	2.0~3.2	18~24	0.4	0.3	16.5	13.0	Austenitic Mn steel type

Notes on usage and welding condition

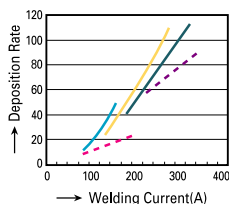
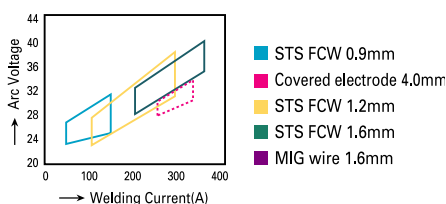
- Please contact to R&D center for specific information
(Tel: 055-269-7285, Fax: 055-266-4487)

Package

Dia. (mm)	1.2	2.0	3.2
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		
POP (kg)	100 ~ 300		

Tip for better welding results for STS FCW

Usage and welding parameter

Fig 1. Deposition rate as a function of welding current

Fig 2. Proper ranges of welding current and arc voltage


Notes on usage

- Welding power source** : Use a DC power source with constant voltage and the polarity DCEP inverter-type welding power sources can also be used. When the use of a certain pulsed arc power source causes much spatter, use the wire with ordinary currents, turning off the pulse switch.
- Shielding gas** : Use CO₂ for shielding for general application. Ar-CO₂ mixtures with 20~50% CO₂ can also be used, but compared with CO₂, porosity (pit, Blowhole) is apt to occur. The proper flow rate of shielding gas is 20~25 liter/min.
- Wire extension** : Keep the wire extension at about 15mm for 0.9mm wire and 15~20mm for 1.2~1.6mm wire. The use of a shorter wire extension may cause pit and worm-tracking porosity. The wire extension in welding with an Ar-CO₂ mixture should be 5mm longer than in use of CO₂.
- Protection against wind** : When wind velocity at the vicinity of an arc is more than 1m/sec, blowhole is apt to occur, and dissolution of nitrogen into the weld metal may deteriorate slag removal and decrease the ferrite content of the weld metal, thereby causing hot cracking. To prevent these problems, use an adequate shielding gas flow rate and a windscreen.
- Welding fumes** : Flux-cored wires generate much more welding fumes in terms of the amount of fumes at unit time in comparison with that of solid wire. To protect welders from harmful welding fumes, be sure to use a local ventilator and an appropriate respirator.
- Storage of wire** : If a STS FCW was left in a wire feeder in a high temperature high humidity atmosphere in summer season, a wet environment in rainy season or a dewfall environment at night in winter season, the use of it may cause pit and worm-tracking porosity due to moisture pick up. Once a wire is unpacked, the wire should be kept in an area of low humidity, taking appropriate preventive measures against dewfall water and dust.

Proper ranges of welding (DC+, 100% CO₂)

Dia. (mm)		0.9	1.2	1.6
Current (Amp.)	F (PA/1G)	80 ~ 160 (18~24)	140 ~ 240 (24~31)	180 ~ 300 (26~30)
	HF (PC/2G)	100 ~ 160 (18~24)	160 ~ 240 (25~31)	200 ~ 300 (27~30)
	VU (PF/3G)	100 ~ 120 (20~23)	160 ~ 200 (25~28)	200 ~ 240 (27~30)

※ Mixture gas (Ar+CO₂=8:2) makes spray transfer mode, so you should be lower 1~2 voltage.

The use of an excessively low arc voltage may generate a large sound in spray arc welding with mixture gas, it make shallowed welding depth. And it may cause welding defect for low shielding power

※ When you use shorter wire extension in mixture gas, you should get an advantage of bead shape and welding depth.

※ Because high heat input of over welding condition make limited heating, base metal easily deform. So, please keep the appropriate welding condition

Classifications

EN ISO 17633-B:2008	: TS308-FB0	KS D 3612	: YF-308C
AWS A5.22-07	: E308T0-1/4	JIS Z 3323	: TS308-FB0

Description

- K-308T is designed for MAG welding of 18%Cr-8%Ni stainless steels and also formulated for operation primarily in the flat position and for welding horizontal fillet welds.
- It is a titania type of flux cored wire for AISI 304 and 304H steel type and has low spatter generation, easy slag removal and good weld soundness.
- The weld metal contains optimum ferrite contents in their austenitic structures, Therefore their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.04	0.60	1.15	20.40	10.60	9
Mix	0.04	0.65	1.25	20.60	10.60	10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40℃	Remarks
AWS A5.22		min. 550	min. 35		
EN ISO 17633-B		min. 550	min. 30		
Example	450	580	39	60	CO ₂
	460	590	38	65	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bent or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	BV	DNV	NK	Others
CO ₂	E308T1-1	UP	308MS	RW308G	CE, JIS

K-308LT

Austenitic Stainless welding wire (Low C, 18%Cr-8%Ni)

Classifications

EN ISO 17633-A:2008	: T 19 9 L P C/M 1	KS D 3612	: YF-308LC
EN ISO 17633-B:2008	: TS308L-FB1	JIS Z 3323	: TS308L-FB1
AWS A5.22-07	: E308LT1-1/4		

Description

- K-308LT is designed for MAG welding of low carbon 18%Cr-8%Ni stainless steel and used to joint austenitic stainless steel (AISI 304, 304L, 304LN, ASTM A157 Gr. C9; A320 Gr. B8C or D)
- The weld metal contains optimum ferrite contents in their austenitic structures, Therefore their weldability is excellent with lower crack susceptibility.
- It has easy slag removal, low spatter generation and good weld soundness of weld-metal.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.60	1.15	20.30	10.50	9
Mix	0.03	0.65	1.25	20.40	10.50	10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40°C	Remarks
AWS A5.22		min. 520	min. 35		
EN ISO 17633-B		min. 520	min. 30		
Example	440	570	39	65	CO ₂
	450	580	38	63	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	BV	DNV	LR	NK	KR
CO ₂	E308T1-1	UP	308L MS	304L S	KW308LG	RW308LG

* Others : CCS, CWB, CE, TUV, JIS

Classifications

EN ISO 17633-A:2008	: T 19 9 L P C/M 1	KS D 3612	: YF-308LC
EN ISO 17633-B:2008	: TS308L-FB1	JIS Z 3323	: TS308L-BiF-FB1
AWS A5.22-07	: E308LT1-1/4		

Description

- K-308LB is designed for MAG welding of high carbon 18%Cr-8%Ni stainless steels with high temperature heat treatment such as solution treatment.
- It is a titania type of flux cored wire without Bi component for all-position welding.
- It has excellent feedability and increased creep resistance at elevated temperature.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.48	1.15	19.30	9.95	7.5
Mix	0.03	0.60	1.25	19.50	10.00	8.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40℃	Remarks
AWS A5.22		min. 520	min. 35		
EN ISO 17633-B		min. 520	min. 30		
Example	420	560	38	56	CO ₂
	430	580	38	52	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- It should weld with proper welding conditions for slag detachment and weldability.

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE

K-308LS

Austenitic Stainless welding wire (Low C, -196°C LNG)

Classifications

EN ISO 17633-A:2008	: T 19 9 L P C 1	KS D 3612	: YF-308LC
EN ISO 17633-B:2008	: TS308L-FC1	JIS Z 3323	: TS308L-FC1
AWS A5.22-07	: E308LT1-1		

Description

- K-308LS is designed for MAG welding of low carbon 18%Cr-8%Ni stainless steels and recommended to be used for low temperature service (STS 304, 304L, 304LN, ASTM A157 Gr C9; A320 Gr. B8C or D)
- It is a titania type of flux cored wire for all-position welding and formulated to focus on mechanical properties more than welding arc stability and provides good corrosion resistance, heat resistance properties.
- The weld metal contains low ferrite contents in their austenitic micro structures and provides good corrosion resistance, heat resistance properties.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.42	2.00	19.00	10.45	7.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-105°C	-196°C	
AWS A5.22		min. 520	min. 35			
EN ISO 17633-B		min. 520	min. 30			
Example	400	550	43	50	40	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

Classifications

EN ISO 17633-A:2008	: T 19 9 L R C/M 4	KS D 3612	: YF-308LC
EN ISO 17633-B:2008	: TS308L-FB4	JIS Z 3323	: TS308L-FB0
AWS A5.22-07	: E308LT0-1/4		

Description

- K-308LF is designed for MAG welding of low carbon 18%Cr-8%Ni stainless steel and used to joint 301, 302, 304 and 308 stainless steel.
- It is formulated for operation primarily in the flat position and for welding horizontal fillet welds.
- It has self-detaching slag and spray-like arc transfer and It provides low spatter and fume, high efficient weld in flat position as well as horizontal.
- The weld metal contains optimum ferrite contents in their austenitic structures, therefore their weldability is excellent with lower crack susceptibility.

Welding positions**Polarity & shielding gas**

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.52	1.42	20.12	9.60	9
Mix	0.03	0.65	1.53	20.50	9.70	10

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40℃	Remarks
AWS A5.22		min. 520	min. 35		
EN ISO 17633-B		min. 520	min. 30		
Example	450	560	40	60	CO ₂
	450	600	36	56	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat inp

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

K-308HT

Austenitic Stainless welding wire (High C, 18%Cr-8%Ni)

Classifications

EN ISO 17633-A:2008	: T 19 9 P C/M 1	AWS A5.22-07	: E308HT1-1/4
EN ISO 17633-B:2008	: TS308H-FB1	JIS Z 3323	: TS308H-FB1

Description

- K-308HT is designed for MAG welding of high carbon 18%Cr-8%Ni stainless steels(STS 304H, 307H) and recommended to be used for high temperature service (about 600°C)
- It is a titania type of flux cored wire for all-position welding and has excellent feedability and increased
- The weld metal contains optimum ferrite contents in their austenitic micro structures and their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.06	0.65	1.00	19.50	10.50	7.5
Mix	0.06	0.75	1.10	19.80	10.50	8.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40°C	Remarks
AWS A5.22		min. 520	min. 35		
EN ISO 17633-B		min. 520	min. 30		
Example	430	600	39	45	CO ₂
	440	610	40	55	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

Classifications

EN ISO 17633-A:2008	: T 19 9 P CM 1	AWS A5.22-07	: E308HT1-1/4
EN ISO 17633-B:2008	: TS308H-FB1	JIS Z 3323	: TS308H-BiF-FB1

Description

- K-308HB is designed for MAG welding of high carbon 18%Cr-8%Ni stainless steels(STS 304H, 307H) and recommended to be use for high temperature service (about 600°C)
- It is a titania type of flux cored wire without Bi component for all-position welding and has excellent feedability and increased creep resistance at elevated temperature.
- The weld metal contains optimum ferrite contents in their austenitic micro structures and their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.06	0.48	1.62	19.65	9.80	7.8
Mix	0.06	0.55	1.70	19.80	9.80	8.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40°C	Remarks
AWS A5.22		min. 520	min. 35		
EN ISO 17633-B		min. 520	min. 30		
Example	400	600	38	60	CO ₂
	410	610	38	65	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- It should weld with proper welding conditions for slag detachment and weldability.

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

K-NGS308L

Austenitic Stainless welding wire (Self-shielded FCW)

Classifications

AWS A5.22-07 : E308LT0-3

Description

- K-NGS308L is designed for self-shielded welding of low carbon 18%Cr-8%Ni stainless steel and used to join STS 304, 304L, 308, 201, 202, 203 etc.
- It is a lime-titania type of flux cored wire for flat and horizontal welding position without shielding gas.
- It features easy slag removal, open transfer, low spatter generation, smooth bead surface and high X-ray safety.
- The weld metal contains low ferrite contents in their austenitic micro structures and provides good corrosion resistance, heat resistance properties.
- The wire should be kept in an area of low humidity after usage to protect to absorbed moisture in rainy season or a dewfall environment.

Welding positions



Polarity & shielding gas

- DC+, Self-shield

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
None	0.02	0.45	1.12	20.50	9.70	10.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -20°C	Remarks
AWS A5.22		min. 520	min. 35		
Example	440	620	39	85	

Notes on usage and welding condition

Dia. (mm)	0.8	0.9	1.2
Current (Amp.)	PA/1G 40 ~ 120 PC/2G 50 ~ 120	60 ~ 140 60 ~ 140	100 ~ 180 100 ~ 180

- It is more convenient to weld with portable welding machine

Package

Dia. (mm)	0.8	0.9	1.2
Spool (kg)	1, 5	12.5, 15, 20	

Classifications

EN ISO 17633-B:2008	: TS309-FB0	KS D 3612	: YF-309C
AWS A5.22-07	: E309T0-1/4	JIS Z 3323	: TS309-FB0

Description

- K-309T is formulated for MAG welding of 22%Cr-12%Ni stainless steels and typical applications is for welding of dissimilar steels, such as 304 to mild steel or low alloy steels.
- K-309T is a titania type of flux cored wire for cladding and dissimilar joint welds.
- Weld metals contain comparatively much more ferrite in their austenitic, therefore they provide better weldability together with superior heat resistance, and corrosion resistance.
- It is designed for operation in the flat position and for welding horizontal fillet welds.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.05	0.58	1.45	23.50	13.00	14
Mix	0.05	0.70	1.63	23.70	13.20	15

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40℃	Remarks
AWS A5.22		min. 550	min. 30		
EN ISO 17633-B		min. 550	min. 25		
Example	450	590	35	40	CO ₂
	460	610	34	44	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bent or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	BV	DNV	LR	NK	KR
CO ₂	E309T1-1	UP	309MS	SS/CMn S	KW309G	RW309G

* Others : CE, JIS

K-309LT

Austenitic Stainless welding wire (Low C, dissimilar joints)

Classifications

EN ISO 17633-A:2008	: T 23 12 L P C/M 1	KS D 3612	: YF-309LC
EN ISO 17633-B:2008	: TS309L-FB1	JIS Z 3323	: TS309L-FB1
AWS A5.22-07	: E309LT1-1/4		

Description

- Dissimilar joint welds ; of and between high-strength, mild steels and low allowed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni-steels, manganese steels
Cladding ; for the first layer of corrosion resistant weld claddings on ferritic-perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N.
- Weld metal contains comparatively much more ferrite in their austenitic structure, therefore they provide better weldability together with superior heat resistance, and corrosion resistance.
- It is easy to use and operate with a powerful penetrating spray arc transfer, minimum spatter formation and self releasing slag.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.60	1.12	23.70	13.20	14
Mix	0.03	0.75	1.20	23.90	13.20	15

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30°C	Remarks
AWS A5.22		min. 550	min. 30		
EN ISO 17633-B		min. 550	min. 25		
Example	430	560	37	45	CO ₂
	440	570	37	48	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	BV	DNV	LR	NK	KR
CO ₂	E309LT1-1	UP	309LMS	SS/CMn S	KW309LG	RW309LG

* Others : CCS, CWB, RINA, TUV, CE, JIS

Classifications

EN ISO 17633-A:2008	: T 23 12 L R C/M 4	KS D 3612	: YF-309LC
EN ISO 17633-B:2008	: TS309L-FB0	JIS Z 3323	: TS309L-FB0
AWS A5.22-07	: E309LT0-1/4		

Description

- Dissimilar joint welds ; of and between high-strength, mild steels and low allowed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni-steels, manganese steels
- Cladding ; for the first layer of corrosion resistant weld claddings on ferritic-perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N.
- Wire is a titania type of flux cored wire for flat and horizontal position welding and it provides better weldability together with excellent corrosion resistance.
- Wire has low spatter, easy slag removal and good weld soundness.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.60	1.42	23.30	13.17	12
Mix	0.03	0.75	0.45	23.50	13.30	13

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30℃	Remarks
AWS A5.22		min. 520	min. 30		
EN ISO 17633-B		min. 520	min. 25		
Example	420	560	37	43	CO ₂
	430	570	38	50	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

K-309LMT

Austenitic Stainless welding wire (Muffler, Dissimilar joints)

Classifications

EN ISO 17633-B:2008	: TS309L-MA0	KS D 3612	: YF-309LG
AWS A5.9-07	: EC309L	JIS Z 3323	: TS309L-MA0

Description

- K-309LMT is designed for MAG welding of low carbon 22%Cr-12%Ni stainless steels and It is suitable for automotive exhaust fabricators such as front pipe, bellows, flange (AISI 409, 436 and dissimilar joint welds)
- Slag quantity is almost the same as solid wire and deposition rate is up to 20% higher than solid wire's one.
- K-309LMT provides low spatter, excellent bead appearance and porosity resistance.
- Weld metals contain comparatively much more ferrite in their austenitic, therefore they provide better weldability together with superior heat resistance,

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
Mix	0.03	0.50	1.65	23.90	12.60	18

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30°C	Remarks
AWS A5.9		min. 520	min. 30		
EN ISO 17633-B		min. 520	min. 25		
Example	440	560	40	50	Mix

Notes on usage and welding condition

Dia. (mm)	1.2	Stick-out
Current	PA/1G	180 ~ 260
(Amp.)	PC/2G	(15 ~ 20mm) (22 ~ 25)

Package

Dia. (mm)	1.2	1.6
Spool (kg)	5, 12.5, 15	
Pailpack (kg)	100	

Approvals

CE, JIS

Classifications

EN ISO 17633-A:2008	: T 23 12 2 L P C 1	KS D 3612	: YF-309MoLC
EN ISO 17633-B:2008	: TS309LMo-FC1	JIS Z 3323	: TS309LMo-FC1
AWS A5.22-07	: E309LMoT1-1		

Description

- Dissimilar joint welds ; of and between high-strength, mild steels and low-alloyed QT-steels, stainless, ferritic Cr- and austenitic Cr-Ni-steels, manganese steels.
Cladding ; for the first layer of corrosion resistant weld claddings on ferritic-perlitic steels in boiler and pressure vessel parts up to fine-grained steel S500N.
- Wire is a titania type of flux cored wire for all-position welding and for Mo-alloyed claddings the product is necessary for the 1st layer.
- Weld metals contain comparatively much more ferrite in their austenitic, therefore they provide better weldability together with superior heat resistance, and corrosion resistance.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	FN
CO ₂	0.03	0.60	1.00	23.75	14.60	2.5	18.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -30°C	Remarks
AWS A5.22		min. 520	min. 25		
EN ISO 17633-B	min. 350	min. 550	min. 25		
Example	480	700	30	35	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bent or distorted due to the bad heat conductivity.
Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	1.2	1.6
Spool (kg)	5, 12.5, 15	

Approvals

Shielding gas	ABS	GL	KR	Others
CO ₂	E309LMoT1-1	4459S	RW309LMoLG	CE, JIS

K-310T

Austenitic Stainless welding wire (High C, 25%Cr-20%Ni)

Classifications

EN ISO 17633-A:2008	: T 25 20 R C 4	KS D 3612	: YF-310C
EN ISO 17633-B:2008	: TS310-FC0	JIS Z 3323	: TS310-FC0
AWS A5.22	: E310T0-1		

Description

- K-310T is designed for MAG welding of 25%Cr-20%Ni stainless steels and the deposited weld-metal has perfect austenitic microstructure.
- It is formulated for operation primarily in the flat position and for welding horizontal fillet welds.
- It features good mechanical properties and heat resistance of the deposited weld-metal.
- The wire should be kept in an area of low humidity after usage to protect to absorbed moisture in rainy season or a dewfall environment.

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
Mix	0.18	0.50	2.20	25.50	20.40	0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J) -40°C	Remarks
AWS A5.22		min. 550	min. 30		
EN ISO 17633-B	min. 350	min. 550	min. 20		
Example	440	630	42	60	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	1.2
Spool (kg)	5, 12.5, 15

Classifications

EN ISO 17633-A:2008	: T 29 9 P C 1	AWS A5.22-07	: E312T1-1
EN ISO 17633-B:2008	: TS312-FC1	JIS Z 3323	: TS312-FC1

Description

- K-312T is formulated for MAG welding of 30%Cr-9%Ni stainless steels and It is used for joining dissimilar steels, steels with reduced weldability and buffer layers prior to hardfacing (rolls, forging dies, hotwork tools, dies for plastics and so on)
- Wire is a titania type of flux cored wire for all-position welding and It also provides excellent usability with stable arc, less spatter levels, better bead appearance as the same as that of a solid MIG wire.
- It has resistance to stress corrosion and highly insensitive to dilution and good scaling resistance up to 1150°C.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.06	0.55	1.25	30.30	10.06	60 ~ 80

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.22		min. 660	min. 22	
EN ISO 17633-B	min. 450	min. 660	min. 15	
Example	600	760	25	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

K-316T

Austenitic Stainless welding wire (18%Cr-8%Ni-Mo)

Classifications

EN ISO 17633-B:2008	: TS316-FB0	KS D 3612	: YF-316C
AWS A5.22-07	: E316LT0-1/4	JIS Z 3323	: TS316-FB0

Description

- K-316T is formulated for MAG welding of 18%Cr-12%Ni-2%Mo stainless steels where increased resistance to pitting corrosion is required (AISI 316, 316L)
- K-316T is a titania type of flux cored wire for flat and horizontal position welding.
- Wire has low spatter, easy slag removal and good weld soundness.
- The weld metal contains optimum ferrite contents in their austenitic structures, Therefore their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	FN
CO ₂	0.03	0.58	1.15	19.00	12.45	2.45	8.0
Mix	0.03	0.64	1.25	19.30	12.50	2.48	8.5

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-60℃	-105℃	
AWS A5.22		min. 520	min. 30			
EN ISO 17633-B	min. 320	min. 520	min. 25			
Example	390	550	40	50	42	CO ₂
	410	560	41	52	40	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	KR	Others
CO ₂	E316T1-1	RW316G	CE, JIS

Classifications

EN ISO 17633-A:2008	: T 19 12 3 L P C/M 1	KS D 3612	: YF-316LC
EN ISO 17633-B:2008	: TS316L-FB1	JIS Z 3323	: TS316L-FB1
AWS A5.22-07	: E316LT1-1/4		

Description

- K-316LT is designed for MAG welding of low carbon 18%Cr-12%Ni-2%Mo stainless steels and this wire has low carbon content which gives good resistance to most types of corrosion of the weld metal (AISI 316L, 316Ti)
- Wire is a titania type of flux cored wire for all-position welding and the weld metal contains optimum ferrite contents in their austenitic structures, therefore their weldability is excellent with lower crack susceptibility.
- Wire has self-detaching slag, spray-like arc transfer, excellent weldability and increased creep resistance at elevated temperature

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	FN
CO ₂	0.03	0.60	1.15	19.50	12.70	2.4	7.5
Mix	0.03	0.65	1.20	19.70	12.70	2.4	8.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-60℃	-105℃	
AWS A5.22		min. 485	min. 30			
EN ISO 17633-B	min. 320	min. 510	min. 25			
Example	420	560	38	50	38	CO ₂
	430	570	38	52	40	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	BV	DNV	LR	GL	NK
CO ₂	E316LT1-1	UP	316LMS	316LS	4435S	KW316LG

* Others : CCS, CWB, TUV, CE, JIS

K-316LB

Austenitic Stainless welding wire (Low C, Bi Free)

Classifications

EN ISO 17633-A:2008	: T 19 12 3 L P C/M 1	KS D 3612	: YF-316LC
EN ISO 17633-B:2008	: TS316L-FB1	JIS Z 3323	: TS316L-BiF-FB1
AWS A5.22-07	: E316LT1-1/4		

Description

- K-308HB is designed for MAG welding of high carbon 18%Cr-8%Ni stainless steels(STS 316L, 316Ti) and recommended to be used for high temperature service (about 600°C)
- It is a titania type of flux cored wire without Bi component for all-position welding and has excellent feedability and increased creep resistance at elevated temperature.
- The weld metal contains optimum ferrite contents in their austenitic micro structures and their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	FN
CO ₂	0.03	0.45	1.25	19.50	10.00	7.0
Mix	0.03	0.54	1.30	19.70	10.00	7.5

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-105°C	-196°C	
AWS A5.22		min. 485	min. 25			
EN ISO 17633-B	min. 320	min. 510	min. 30			
Example	400	560	42	52	42	CO ₂
	410	570	40	54	40	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- It should weld with proper welding conditions for slag detachment and weldability.

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Classifications

EN ISO 17633-A:2008	: T 19 12 3 L P C 1	KS D 3612	: YF-316LC
EN ISO 17633-B:2008	: TS316L-FC1	JIS Z 3323	: TS316L-FC1
AWS A5.22-07	: E316LT1-1		

Description

- K-316LS is designed for MAG welding of low carbon 18%Cr-8%Ni-2%Mo stainless steels and recommended to be use for low temperature service (AISI 316L, 316Ti, 316Cb)
- It is a titania type of flux cored wire for all-position welding and formulated to focus on mechanical properties more than welding arc stability.
- The weld metal contains low ferrite contents in their austenitic micro structures and provides good corrosion resistance, heat resistance propertie

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	FN
CO ₂	0.03	0.50	1.60	17.50	12.50	2.3	4.5

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-105°C	-196°C	
AWS A5.22		min. 485	min. 25			
EN ISO 17633-B	min. 320	min. 510	min. 30			
Example	390	550	40	54	35	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

K-316LF

Austenitic Stainless welding wire (Low C, 18%Cr-8%Ni-Mo)

Classifications

EN ISO 17633-A:2008	: T 19 12 3 L R C/M 4	KS D 3612	: YF-316LC
EN ISO 17633-B:2008	: TS316L-FB0	JIS Z 3323	: TS316L-FB0
AWS A5.22-07	: E316LT0-1/4		

Description

- K-316LF is designed for MAG welding of low carbon 18%Cr-12%Ni-2%Mo stainless steel and this wire has low carbon content which gives good resistance to most types of corrosion of the weld metal (AISI 316L, 316Ti, 316Cb)
- Wire is a titania type of flux cored wire for flat and horizontal position welding.
- K-316LF has self-detaching slag and spray-like arc transfer, as well as excellent weldability and increased creep resistance at elevated temperature.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	FN
CO ₂	0.03	0.58	1.38	19.50	12.50	2.4	7.5
Mix	0.03	0.63	1.45	19.70	12.60	2.4	8.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-60℃	-105℃	
AWS A5.22		min. 485	min. 30			
EN ISO 17633-B	min. 320	min. 510	min. 25			
Example	440	570	37	52	40	CO ₂
	440	590	36	55	42	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

Classifications

EN ISO 17633-B:2008	: TS317L-FC1	KS D 3612	: YF-317LC
AWS A5.22-07	: E317LT1-1	JIS Z 3323	: TS317L-FC1

Description

- K-317LT is designed for MAG welding of low carbon 19%Cr-13%Ni-3%Mo stainless steels and the principal area of application is process and chemical plant, shipbuilding as well as nuclear plant industries (AISI 316L, 316LN, 317L, 317LN, UNS S31726)
- Wire is a titania type of flux cored wire for all-position welding and it has self-detaching slag, spray-like arc transfer, excellent weldability and increased creep resistance at elevated temperature.
- It contains higher levels of Mo for increased corrosion-resistance when compared to the K-316LT.
- The weld metal contains optimum ferrite contents in their austenitic structures, Therefore their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	FN
CO ₂	0.03	0.56	1.00	19.60	13.30	3.85	11.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-40℃	
AWS A5.22		min. 520	min. 20			
EN ISO 17633-B		min. 520	min. 20			
Example	390	650	32	55	44	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	Others
CO ₂	E317LT1-1	CE, JIS

K-347T

Austenitic Stainless welding wire (18%Cr-8%Ni-Nb)

Classifications

EN ISO 17633-A:2008	: T 19 9 Nb P C 1	KS D 3612	: YF-347C
EN ISO 17633-B:2008	: TS347-FC1	JIS Z 3323	: TS347-FC1
AWS A5.22-07	: E347T-1		

Description

- K-347T is formulated for MAG welding of 19%Cr-9%Ni-Nb stainless steels.
(AISI 347, 321, ASTM A296; A157 Gr. C9; A320 Gr. B8C or D)
- Wire is a titania type of flux cored wire for all-position welding and it has low spatter generation, easy slag removal and good weld soundness.
- Nb component improves the resistance to intergranular corrosion of the weld metal.
- The weld metal contains optimum ferrite contents in their austenitic structures, Therefore their weldability is excellent with lower crack susceptibility.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Nb	FN
CO ₂	0.04	0.68	1.15	19.70	10.10	0.56	9.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-60℃	-105℃	
AWS A5.22		min. 520	min. 30			
EN ISO 17633-B	min. 350	min. 520	min. 25			
Example	480	650	33	50	40	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

Classifications

EN ISO 17633-A:2008	: T 22 9 3 N L P C/M 1	AWS A5.22-07	: E2209T1-1/4
EN ISO 17633-B:2008	: TS2209-FB1	JIS Z 3323	: TS2209-FB1

Description

- K-329T is formulated for MAG welding of 23%Cr-9%Ni-3%Mo duplex stainless steel and this principal area of application is chemical plant and shipbuilding as well as nuclear plant industries (ASTM A185 Gr.51, UNS S31803, DIN 1.4462, JIS 329J1)
- Wire is a titania type of flux cored wire for all-position welding and It has a stable welding arc producing a weld with easy slag removal and minimal spatter.
- K-329T is excellent in pitting corrosion resistance and stress corrosion cracking resistance.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	PREN	FN
CO ₂	0.03	0.52	0.80	23.20	9.60	3.26	37.12	36.7
Mix	0.03	0.54	0.85	23.40	9.60	3.3	37.32	36.8

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-40℃	
AWS A5.22		min. 690	min. 20			
EN ISO 17633-B	min. 350	min. 690	min. 15			
Example	715	818	27	52	42	CO ₂
	720	825	26	50	40	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

Shielding gas	ABS	DNV
CO ₂	E2209T1-1	(For Duplex (-30℃))
* Others : CE, JIS		

K-329TE

Lean Duplex Stainless welding wire (22%Cr-9%Ni-Mo)

Classifications

Not required

Description

- K-329TE is formulated for MAG welding of 22%Cr-9%Ni-3%MnMo Lean duplex stainless steels and 'Lean duplex' steel has excellent strength and medium corrosion resistance.
- It is mainly intended for application such as civil engineering, storage tanks, containers etc.
- Wire is a titania type of flux cored wire for all-position welding and It gives high tensile strength and also good resistance to stress corrosion cracking.
- It provides a ferritic-austenitic weldment that combines many of the good properties of both ferritic and austenitic stainless steels.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂,
Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	PREN	FN
CO ₂	0.03	0.45	0.82	22.60	9.70	1.68	30.4	36.7

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-60℃	-105℃	
Example	545	770	30	52	50	CO ₂
	550	780	30	50	46	Mix

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, the impact value tends to be reduced. Therefore, perform welding with selecting proper heat input

Package

Dia.	(mm)	0.9	1.2	1.6
Spool	(kg)	5, 12.5, 15		

Classifications

EN ISO 17633-B:2008	: TS2553-FC0	JIS Z 3323	: TS2553-FC0
AWS A5.22-07	: E2553T0-1		

Description

- K-325T is formulated for MAG welding of 25%Cr-9%Ni-3%MoCu duplex stainless steels and the typical application is chemical plant and shipbuilding as well as nuclear plant industries (UNS S32520, UNS S32550, S32750, S32900, JIS 329J4L)
- Wire is a titania type of flux cored wire for flat and horizontal position welding, and provides low spatter and fume generation and high efficiency in flat position
- It has better pitting corrosion resistance and stress corrosion cracking resistance compared to the E2209TX-XXX welding consumables type.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo	PREN	FN
CO ₂	0.03	0.60	1.00	25.50	9.50	3.68	40.2	42.0

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	IV (J)		Remarks
				-20℃	-40℃	
AWS A5.22		min. 690	min. 20			
EN ISO 17633-B	min. 350	min. 690	min. 15			
Example	480	650	33	42	27	CO ₂

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- When heat input is excessive, base metal will be bended or distorted due to the bad heat conductivity. Therefore, perform welding with selecting proper heat input

Package

Dia. (mm)	0.9	1.2	1.6
Spool (kg)	5, 12.5, 15		

Approvals

CE, JIS

K-409TiC

Ferritic Stainless welding wire (Muffler, 13%Cr-Ti)

Classifications

EN ISO 17633-B:2008 : TS409-MA0 AWS A5.9 : EC409

Description

- K-409TiC is developed to meet the needs of the automotive exhaust fabricators that desired a metal cored wire. It excels in the pulsed GMAW mode and additional applications include heat exchangers and recuperators, power plant reheater tubes etc.
- It would produce a moderately soft arc and high welding speed.
- K-409TiC provides low spatter, excellent bead appearance and porosity resistance.
- Higher Ti component improves resistance to porosity, good wetting behaviour when compared to the K-409Ti wire.
- High deposition efficiency and high speed welding on the thin plate are possible.

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ti
Mix	0.02	0.44	0.62	0.011	0.005	11.50	1.00

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
EN ISO 17633-B		min. 450	min. 15	
Example	480	530	24	CO ₂

☞ After machining, but before testing, the specimen was aged at a temperature 100°C for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

Dia.(mm)	1.2	Stick-out
Current	PA/1G	180 ~ 260
(Amp.)	PC/2G	(22 ~ 25) (15 ~ 20mm)

Package

Dia. (mm)	1.2	1.32
Spool (kg)	12.5, 15	
Pailpack (kg)	100 ~ 200	

Classifications

EN ISO 17633-B:2008 : TS409-MA0 AWS A5.9 : EC409

Description

- K-409TiT is developed to meet the needs of the automotive exhaust fabricators that desired a metal cored wire. It excels in the pulsed GMAW mode and additional applications include heat exchangers and recuperators, power plant reheater tubes etc.
- Wire is a metal type of flux cored wire for high speed welding on the plates as possible
- It would produce a moderately soft arc and low spatter generation and also provide excellent bead appearance and porosity resistance.
- Slag quantity is almost the same as a solid wire and deposition rate is up to 20% higher than solid wire's one.

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ti
Mix	0.02	0.50	0.45	0.011	0.005	12.10	0.80

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
EN ISO 17633-B		min. 450	min. 15	
Example	460	520	25	Mix

[※] After machining, but before testing, the specimen was aged at a temperature 100°C for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

	Dia.(mm)	1.2	Stick-out
Current	PA/1G	180 ~ 260	
(Amp.)	PC/2G	(22 ~ 25)	(15 ~ 20mm)

Package

	Dia. (mm)	1.2	1.32
Spool (kg)		12.5, 15	
Pailpack (kg)		100 ~ 200	

Approvals

Shielding gas	ABS	Other
CO ₂	E409T0-G	CE

K-430T

Ferritic Stainless welding wire (Muffler, 17%Cr-Ti)

Classifications

AWS A5.9 : EC430

JIS Z 3323 : TS430-MA0

Description

- K-430T is designed for MAG welding of ferrite stainless alloys of the 17%Cr-Ti types and suitable for automotive exhaust fabricators such as front pipe, bellows, flange, etc (AISI 409, 430Ti, ASTM A176I)
- Wire is a metal type of flux cored wire for high speed welding on the plate as possible and it would produce a moderately soft arc and high low spatter generation.
- K-430T provide higher corrosion resistance, heat resistance due to high alloy designs and also suitable for surfacing of sealing faces of gas, water and steam valves.

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ti
Mix	0.02	0.61	0.49	0.010	0.007	16.80	1.00

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.9		min. 450	min. 20	
Example	475	535	25	Mix

※ After machining, but before testing, the specimen was aged at a temperature 100°C for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

Dia.(mm)	1.2	Stick-out
Current (Amp.)	PA/1G PC/2G	180 ~ 260 (22 ~ 25) (15 ~ 20mm)

Package

Dia. (mm)	1.2	1.32
Spool (kg)	12.5, 15	
Pailpack (kg)	100 ~ 200	

Approvals

Shielding gas	ABS	Other
Mix	E409T0-G	CE

Classifications

EN ISO 17633-B:2008 : TS430Nb-MA0

JIS Z 3323 : TS430Nb-MA0

Description

- K-430LNb is designed for MAG welding of stainless steels of the 17%Cr-Nb steels and is suitable for automotive exhaust fabrications such as front pipe, bellows, flange etc (AISI 430, 430Ti, 431)
- It is a metal type of flux cored wire for high speed welding on the plate as possible.
- It would produce a moderately soft arc, low spatter generation and slag quantity is almost the same as solid wire and deposition rate is up to 20% higher than solid wire's one.
- It has the high tensile strength at the high temperature atmosphere.

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15-25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Nb
Mix	0.02	0.26	0.27	0.009	0.005	17.80	0.56

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
EN ISO 17633-B		min. 450	min. 13	
Example	480	530	22	Mix

☞ After machining, but before testing, the specimen was aged at a temperature 100°C for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

Dia.(mm)	1.2	Stick-out
Current	PA/1G	180 ~ 260
(Amp.)	PC/2G	(22 ~ 25)
		(15 ~ 20mm)

Package

Dia. (mm)	1.2	1.32
Spool (kg)	12.5, 15	
Pailpack (kg)	100 ~ 200	

Approvals

JIS

K-436T

Ferritic Stainless welding wire (Muffler, 18%Cr-Mo)

Classifications

Not required

Description

- K-436T is designed for MAG welding of stainless steels of the 17%Cr-1%Mo-Ti types and suitable for automotive exhaust fabricators such as front pipe, bellows, flange, etc (JIS 436L/436J1L)
- Wire is a metal type of flux cored wire for high speed welding on the plate as possible.
- It would produce a moderately soft arc and high low spatter generation, and the Mo component in weld metal improves good crack resistance and heat resistance.
- It is also suitable for surfacing of sealing faces of gas, water and steam valves.

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Mo	Ti
Mix	0.03	0.35	0.63	17.50	1.10	0.50

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
Example	385	490	23	Mix

※ After machining, but before testing, the specimen was aged at a temperature 100℃ for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

	Dia.(mm)	1.2	Stick-out
Current (Amp.)	PA/1G PC/2G	180 ~ 260 (22 ~ 25)	(15 ~ 20mm)

Package

	Dia. (mm)	1.2	1.32
Spool (kg)		12.5, 15	
Pailpack (kg)		100 ~ 200	

Classifications

Not required

Description

- K-439T is designed for MAG welding of stainless steels of the 18%Cr-Ti types and suitable for automotive exhaust fabrications such as front pipe, bellows, flange etc. (AISI 430, 430Ti, 431)
- Wire is a metal type of flux cored wire for high speed welding on the plate as possible.
- It would produce a moderately soft arc and low spatter generation.
- Slag quantity is almost the same as solid wire and deposition rate is up to 20% higher than solid wire's one.
- K-439T has the high tensile strength at the high temperature atmosphere.

Welding positions



Polarity & shielding gas

- Mix: Ar+2% O₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr	Ti
Mix	0.03	0.33	0.64	0.01	0.01	0.50	0.30

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
Example	390	495	24	Mix

※ After machining, but before testing, the specimen was aged at a temperature 100℃ for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

	Dia.(mm)	1.2	Stick-out
Current	PA/1G	180 ~ 260	
(Amp.)	PC/2G	(22 ~ 25)	(15 ~ 20mm)

Package

	Dia. (mm)	1.2	1.32
Spool (kg)		12.5, 15	
Pailpack (kg)		100 ~ 200	

K-410T

Martensitic Stainless welding wire (13%Cr, Hardfacing)

Classifications

EN ISO 17633-A:2008	: T 13 P C/M 4	AWS A5.22-07	: E410T0-1/4
EN ISO 17633-B:2008	: TS410-FB0	JIS Z 3323	: TS410-FB0

Description

- K-410T is designed for MAG welding of martensite stainless alloys of the 13%Cr types and used for surfacing of sealing faces of valves for gas, water, and steam piping system at service temperatures up to 450°C.
- Wire is a metal type of flux cored wire for flat and horizontal position welding.
- K-410T is suitable for the first layer of corrosion resistant weld claddings.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- Mix: Ar+20% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	P	S	Cr
CO ₂	0.07	0.28	0.35	0.012	0.005	12.85
Mix	0.07	0.34	0.45	0.011	0.005	13.00

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
EN ISO 17633-B Example (CO ₂)	380	min. 450 530	min. 15 28	750°C×1Hr

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- For joint welding, preheating to 200~300°C is recommended and tempering at 700~750°C to increase toughness.

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE, JIS

K-410NiMoT

Martensitic Stainless welding wire (13%Cr-Ni, Hardfacing)

Classifications

EN ISO 17633-A:2008	: T 13 4 P M 4	AWS A5.22-07	: E410NiMoT0-4
EN ISO 17633-B:2008	: TS410NiMo-FM0	JIS Z 3323	: TS410NiMo-FM0

Description

- K-410NiMoT is designed for MAG welding of soft-martensite stainless alloys of the 13%Cr-4%Ni-Mo types. (AISI 403, 405, 410, 420, JIS SCS3, SCS6, ASTM CA15M, CA6NM)
- Wire is a metal type of flux cored wire for flat and horizontal position welding.
- K-410NiMoT features very good ductility, CVN toughness and crack resistance.
- The machinability of the weld metal depends largely upon the kind of base metal and degree of dilution.

Welding positions



Polarity & shielding gas

- Mix: Ar+20% CO₂ (15-25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo
Mix	0.04	0.23	0.36	12.20	4.10	0.70

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.22		min. 760	min. 15	
EN ISO 17633-B	min. 500	min. 750	min. 15	
Example (Mix)	745	900	18	600°Cx1Hr

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- Preheating and interpass temperatures in case of thick-walled sections 100~160°C and maximum heat input 15kJ/cm and tempering at 580~620°C.

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

* Others : CE, JIS

K-410NiMoTC

Martensitic Stainless welding wire (13%Cr-Ni, Hardfacing)

Classifications

EN ISO 17633-A:2008	: T 13 4 P C 1	AWS A5.22-07	: E410NiMoT1-1
EN ISO 17633-B:2008	: TS410NiMo-FC1	JIS Z 3323	: TS410NiMo-FC1

Description

- K-410NiMoTC is designed for MAG welding of soft-martensite stainless alloys of the 13%Cr-4%Ni-Mo types (AISI 403, 405, 410, JIS SCS3, SCS6, SB410, ASTM CA15M, CA6NM)
- Wire is a titania type of flux cored wire for all-position welding with 100%CO₂ gas.
- It features self-detaching slag, spray-like transfer, low spatter generation, smooth bead surface and high X-ray safety.
- The machinability of the weld metal depends largely upon the kind of base material and the degree of welding dilution.

Welding positions



Polarity & shielding gas

- CO₂: 100% CO₂ (15~25ℓ/min)
- DCEP (DC+)

Typical chemical composition of all-weld metal (%)

Shielding gas	C	Si	Mn	Cr	Ni	Mo
CO ₂	0.04	0.55	0.45	12.20	4.80	0.55

Typical mechanical properties of all-weld metal

	Y.S (MPa)	T.S (MPa)	El. (%)	Remarks
AWS A5.22		min. 760	min. 15	
EN ISO 17633-B	min. 500	min. 750	min. 15	
Example (Mix)	900	950	18	600°C×1Hr

☞ After machining, but before testing, the specimen was aged at a temperature 100°C for up to 48 hours then allowed to cool to room temperature.

Notes on usage and welding condition

- Refer to page 254 for more information on usage
- Preheating and interpass temperatures in case of thick-walled sections 100~160°C and maximum heat input 15kJ/cm and tempering at 580~620°C.

Package

Dia. (mm)	1.2	1.4	1.6
Spool (kg)	5, 12.5, 15, 20		
Pailpack (kg)	100 ~ 300		

Approvals

CE, JIS

MEMO
