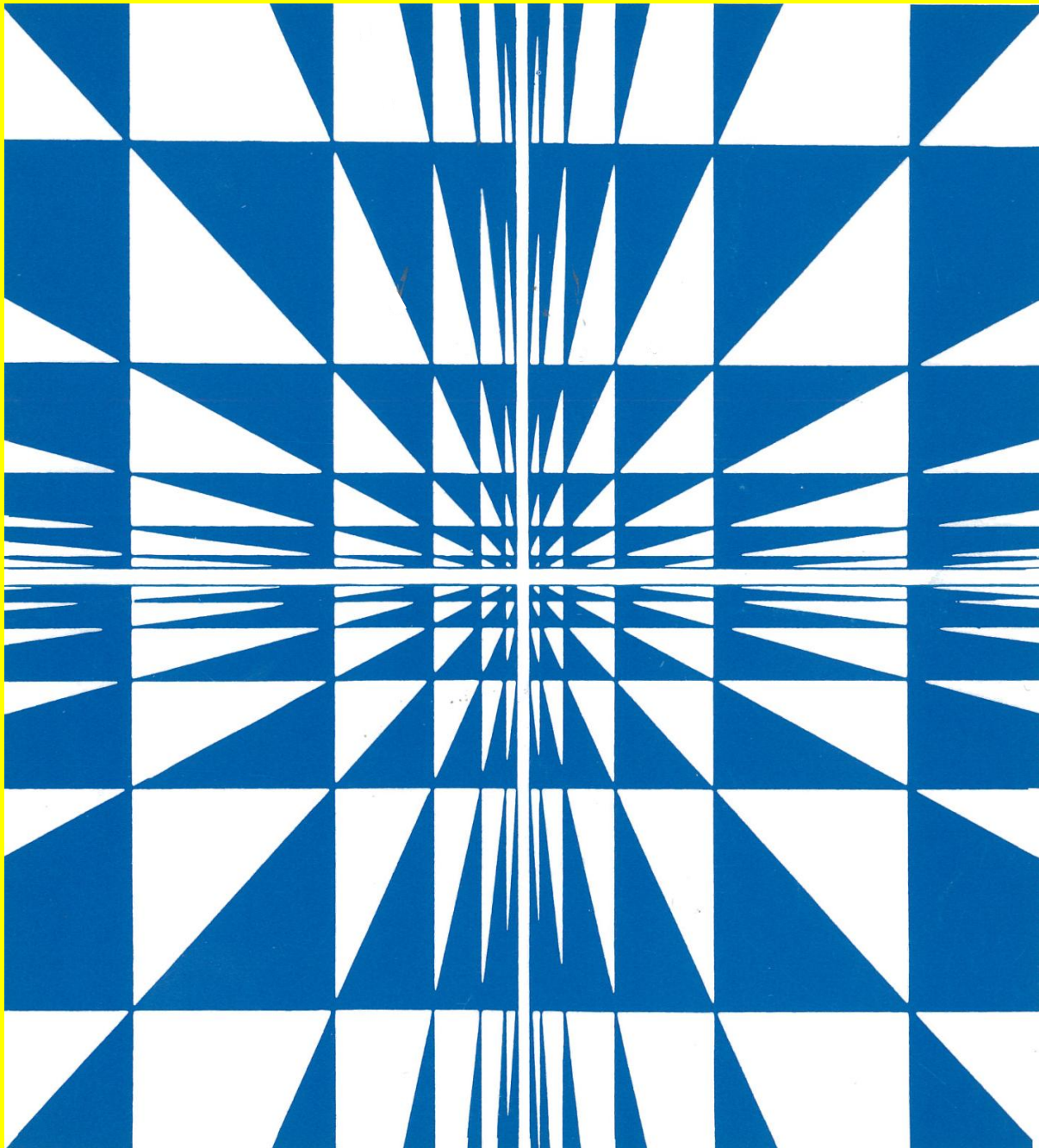


TOYO ALLOY

LOW TEMPERATURE WELDING RODS.

Product Catalog



We're talking a measure gently in the earth.

Silver braze · Phosphorus copper braze List

Silver braze

Brand	The use	The feature	J I S A W S	Scientific ingredient (%)					The temperature (°C)			Growth rate (%)	The tensile strength (kg/mm ²)	Specific gravity
				A g	C u	Z n	C d	Others	Solid phase line	Liquidus phase line	The brazing temperature			
TG-600	It's brazing material for public and suits all base-metal except for a light alloy.	Low melting brazing material	BAG-1	44 ~ 46	14 ~ 16	14 ~ 18	23 ~ 25		605	620	620 ~ 760	20 ~ 25	40 ~ 50	9.4
TG-601	//	A flow is really suitable for brazing in a small joint of Claire Lance.	BAG-1A	49 ~ 51	14.5 ~ 16.5	14.5 ~ 18.5	17 ~ 19		625	635	635 ~ 760	25 ~ 30	40 ~ 50	9.4
TG-602	//	A fusion area is wide and suitable for joining of a wide gap.	BAG-2	34 ~ 36	25 ~ 27	19 ~ 23	17 ~ 19		605	700	700 ~ 845	20 ~ 25	38 ~ 45	9.1
TG-603	It suits brazing of stainless steel, tungsten, the molybdenum, a carbide and cast iron.	It's finished and suits for meat brazing.	BAG-3	49 ~ 51	14.5 ~ 16.5	13.5 ~ 17.5	15 ~ 17	Ni 2.5 ~ 3.5	630	690	690 ~ 815	25 ~ 30	35 ~ 70	9.5
TG-604	It has melting point higher than "BAG-3" and suits brazing of tool steel, stainless steel, cast iron steel, general part-time work and brazing of cutter kinds.	It suits hot brazing (the material which has a lot of carbon in particular). The heat barrier strength of the brazing part is high.	BAG-4	39 ~ 41	29 ~ 31	26 ~ 30		Ni 1.5 ~ 2.5	670	780	780 ~ 900	25 ~ 30	50 ~ 60	9.0
TG-605	It suits laying of the pipes of stainless steel, an electrical appliance and a boat and brazing of a medical device and a scientific instrument.	It suits hot brazing and it's used for joining of a wide gap.	BAG-5	44 ~ 46	29 ~ 31	23 ~ 27			675	745	745 ~ 845	20 ~ 25	32 ~ 40	9.1
TG-606	It suits brazing of related apparatus of food, brass, nickel, an electrical appliance, a zinc trigger board and a tin trigger board.	For hot brazing. The electric conductivity is 24.4% of copper.	BAG-6	49 ~ 51	33 ~ 35	14 ~ 18			690	775	775 ~ 870	21 ~ 26	32 ~ 40	9.3
TG-607	It's concolorous for brazing of stainless steel. There is no cadmium and it's cold and suitable for brazing on a food relation.	Stress corrosion crack is reduced.	BAG-7	55 ~ 57	21 ~ 23	15 ~ 19		Sn 4.5 ~ 5.5	620	650	650 ~ 760	23 ~ 28	32 ~ 40	9.3
TG-608	It's suitable for vacuum brazing.	The electric conductivity is 77.1% of copper. It isn't possible to apply iron metal.	BAG-8	71 ~ 73	27 ~ 29				780	780	780 ~ 900	20 ~ 25	32 ~ 40	10.1

Phosphorus copper braze · Special Phosphorus copper braze

Brand	The use	The feature	J I S A W S	Scientific ingredient (%)					The temperature (°C)			Growth rate (%)	The tensile strength (kg/mm ²)	Specific gravity
				P	A g	S n		C u	Solid phase line	Liquidus phase line	The brazing temperature			
TC-310T	It's suitable for brazing of a gas appliance. Step soldering with "TC-310A"	The hottest phosphorus copper brazing material.	BCuP-1	4.8 ~ 5.3				Rest	705	925	710 ~ 930		Filler metal material 95	8.0
TC-310A	It suits brazing of a gas appliance, refrigeration machine and other copper made items.	The cost is lowest and fluidity is good. Of Claire Lance, it's small but suitable for brazing.	BCuP-2	6.8 ~ 7.5				Rest	710	795	735 ~ 845	8 ~ 9	26 ~ 30	8.0
TC-315	It's suitable for brazing of various heat exchangers, electrical component and all kinds' laying of the pipes.	Even if it's a little wide, Claire Lance can connect well.	BCuP-3	5.8 ~ 6.7	4.7 ~ 6.3			Rest	645	815	720 ~ 815	10 ~ 13	30 ~ 35	8.1
TC-316	//	The coldest phosphorus copper brazing material.	BCuP-4	6.8 ~ 7.7	5.8 ~ 6.2			Rest	645	720	690 ~ 790			8.1
TC-325	Air conditioning equipment, a heat exchanger, a vehicle, a boat, a scientific instrument and the switch are good for brazing of a point of arrangement.	It's suitable for wide brazing of Claire Lance because a solidified area is wide.	BCuP-5	4.8 ~ 5.3	14.5 ~ 15.5			Rest	645	800	705 ~ 815	10 ~ 14	33 ~ 39	8.5
TC-312S	It's suitable for brazing of various heat exchangers, electrical component and all kinds' laying of the pipes.	I possess "TC-310A" and the intermediate special quality of "TC-315".	BCuP-6	6.5 ~ 7.2	1.8 ~ 2.2			Rest	645	790	730 ~ 815	11 ~ 13	20 ~ 25	8.0
TC-312E	//	//	BCuP-6	6.8 ~ 7.2	1.8 ~ 2.2			Rest	645	790	730 ~ 815	11 ~ 13	20 ~ 25	8.0
TC-310D	It suits brazing of a gas appliance, refrigeration machine and other copper made items.	Fluidity and an expanse are good in particular also workability is good. Claire Lance, something up to 0.3 cm		8.0 ~ 8.6				Rest	705	780	705 ~ 805	12 ~ 16	20 ~ 25	7.8
TC-302	It suits brazing of laying of the pipes of various heat exchangers, electrical component and various copper alloys.	//		6.8 ~ 7.3		7.0 ~ 8.0		Rest	620	680	640 ~ 700	10 ~ 14	27 ~ 31	8.1
TC-306	Air conditioning equipment, a heat exchanger, a vehicle, a boat, a scientific instrument and the switch are good for brazing of a point of arrangement.	The strong tension is particularly good and is suitable for a low charge account as the substitute of silver braze.		7.3 ~ 7.8	5.8 ~ 6.3	7.0 ~ 8.0		Rest	605	645	620 ~ 680	18 ~ 23	40 ~ 50	8.3

The phosphorus copper brazing material and the special phosphorus copper brazing material suit brazing of copper and the copper alloy system and are unsuitable for iron and an alloy of the stainless system. Flux is unnecessary for a low bill between the copper.

Brass brazing material · Paste brazing material List

Brass brazing material

Brand	The use and the feature	J I S A W S	Scientific ingredient (%)									The temperature (°C)			
			C u	S n	F e	N i	p b	A I	S i		Zn	Solid phase line	Liquidus phase line	The brazing temperature	
TOYO-BIN B type	Fluidity is really suitable for planks. It suits brazing of copper, cast iron, copper and a copper alloy. Fused spray deposit is smooth and I possess gloss.	BCuZn-2	57 ~ 61	0.5 ~ 1.5			Less than 0.05.	Less than 0.02.				Rest	885	900	900 ~ 955
TOYO-BIN D type	It's the most inexpensive brass brazing material and is used widely for bicycles.		60 ~ 70		Less than 0.10.		Less than 0.05.				Rest	855	870	870 ~ 925	
TC-202	The lowest operational temperature is indicated in the brass brazing material.	BCuZn-0	32 ~ 36		Less than 0.10.		Less than 0.05.				Rest	800	820	820 ~ 870	
TC-203	It's suitable for all kinds' brazing which makes the fluidity and the workability the center.	BCuZn-5	50 ~ 53	3.0 ~ 4.5	Less than 0.10.		Less than 0.05.				Rest	860	875	875 ~ 925	
TC-209	It's used for brazing which requires corrosion resistance. It suits high temperature brazing.	BCuZn-6	46 ~ 50			9 ~ 11	Less than 0.05.		Less than 0.25.	P Less than 0.25.	Rest	920	935	935 ~ 980	
TC-211	It suits with a corrosion resistance and a train which requires tensile strength. It's for with hot trains.	BCuZn-7	46 ~ 49			10 ~ 11			0.15 以下	Ag 0.3 ~ 1.0	Rest	920	930	930 ~ 980	
TC-351	There is tensile strength and it suits with a train of steel, copper, a copper alloy, nickel, a nickel base alloy and stainless steel. The department with a train is strong to an impact.	BCuZn-3	56 ~ 60	More than 1.0.	0.25 ~ 1.25	More than 1.0.	Less than 0.05.	Less than 0.10.	Less than 0.25.	Mn Less than 0.10.	Rest	865	885	885 ~ 955	

Paste brazing material · Powdery brazing material

Brand	The use and the feature	J I S A W S	Scientific ingredient (%)									Melt temperature	The operational temperature		
			A g	C u	Z n	S n	P	A I	C d	N i	M n			S i	
TPA-1.000	It's suitable for Dip lotion brazing and brazing in the atmosphere hearth for automatic brazing machines by which it's for an aluminum heat exchanger.								Rest				10.0 ~ 11.0	515 ~ 560	550 ~ 600
TPA-5.500	It's suitable for Dip lotion brazing and brazing in the atmosphere hearth for brazing with between the aluminum, aluminum and variety metal. .				Rest			5.0 ~ 10.0						420 ~ 450	450 ~ 500
TPC-3.310	There are 2 kinds, paste and a powder by brazing material for copper and copper alloy. Whole atmosphere and, besides, it's applied to brazing of all conditions.			Rest			6.8 ~ 7.5							705 ~ 805	735 ~ 840
TPC-3.305	There are 2 kinds, paste and a powder by brazing material for copper and copper alloy. It suits brazing in a wide part of a few clearances or a part which requires the strength.		4.8 ~ 5.3	Rest			5.8 ~ 6.7							640 ~ 805	705 ~ 840
TPC-3.600	The strength is strong for hot brazing by which it's for iron and an iron casting, and the fluidity is also good.			Rest										1000 ~ 1200	1050 ~ 1250
TPC-3.650	The workability is also good for cold brazing by which it's for iron and an iron casting.			Rest		10.0 ~ 13.0				Tr	Tr			880 ~ 980	950 ~ 1050
TPC-7.025	The cost is cheap in solder to metal besides the light metal, and the workability is also good.				Rest		Pb 20.0 ~ 25.0			Tr	Tr			225 ~ 300	230 ~ 320
TPG-7.000	I possess the strength beyond double compared with soldering in cold solder to all metal, and there is no oxidized scale.		3.0 ~ 5.0		Rest									185 ~ 220	200 ~ 240
TPG-7.604	The silver brazing material cadmium doesn't enter. It suits stainless steel, cast iron and the material which has a lot of carbon in particular like the general byte and the cutter kinds.		39 ~ 41	29 ~ 31	26 ~ 30					1.5 ~ 2.5				670 ~ 780	780 ~ 900
TPG-7.600	There are 2 kinds, a powder and paste by silver brazing material. It's rather common, -like for brazing material.		44 ~ 46	14 ~ 16	7.0 ~ 8.0							23 ~ 25		605 ~ 670	620 ~ 760

Aluminum weld rode List

Aluminum and aluminum alloy weld rod

Brand	According to the kind of welding base material and the quality	The pull strength of the weld coupler(kg/mm ²)	J I S A W S	Scientific ingredient (%)									The tensile strength (kg/mm ²)	Bend test	
				C u	S i	F e	M n	M g	C r	Z n	T i	A I		Bending angle	Radius of mandrel
T-1070	1070-0	More than 6.	A1070BY	Less than 0.04.	Less than 0.20.	Less than 0.25.	Less than 0.03.	Less than 0.03.	—	Less than 0.04.	Less than 0.03.	More than 99.7.	More than 6.	180°	Two times of the thickness of the board
T-1100	1110-0	More than 6.	A1100BY	0.05 ~ 0.20	Less than 1.0.		Less than 0.05.	—	—	Less than 0.10.	—	More than 99.0.	More than 6.	"	"
T-4043	6061-T6	More than 17.	A4043BY	Less than 0.30.	4.5 ~ 6.0	Less than 0.80.	Less than 0.05.	Less than 0.05.	—	Less than 0.10.	Less than 0.20.	Rest	More than 17.	"	3 and 1/3 times of the thickness of the board
T-5154	5154-0	More than 21.	A5154BY	Less than 0.10.	Less than 0.45.		Less than 0.10.	3.1 ~ 3.9	0.15 ~ 0.35	Less than 0.20.	Less than 0.20.	Rest	More than 21.	"	Two times of the thickness of the board
T-5554	5052-0	More than 18.	A5554BY	Less than 0.10.	Less than 0.45.		0.50 ~ 1.0	2.4 ~ 3.0	0.05 ~ 0.20	Less than 0.25.	0.05 ~ 0.20	Rest	More than 18.	"	"
T-5356	5083-0	More than 27.	A5356BY	Less than 0.10.	Less than 0.50.		0.05 ~ 0.20	4.5 ~ 5.5	0.05 ~ 0.20	Less than 0.10.	0.06 ~ 0.20	Rest	More than 27.	"	3 and 1/3 times of the thickness of the board
T-5556	5083-0	More than 28.	A5556BY	Less than 0.10.	Less than 0.40.		0.50 ~ 1.0	4.7 ~ 5.5	0.05 ~ 0.20	Less than 0.25.	0.05 ~ 0.20	Rest	More than 28.	"	"
T-5183	5083-0	More than 28.	A5183BY	Less than 0.10.	Less than 0.40.	Less than 0.40.	0.50 ~ 1.0	4.3 ~ 5.2	—	More than 0.25.	Less than 0.15.	Rest	More than 28.	"	"

Aluminum brazing material

Brand	The use and the feature	J I S A W S	Scientific ingredient (%)								The solid phase temperature	The liquid look temperature	Brazing welding temperature	
			S i	C u	F e	Z n	M g	M n	C r	T i				A I
TA-100	It's used for brazing of aluminum and a thin board of the aluminum alloy because the melting point is low in particular around the aluminum and the eutectic crystal temperature of the silicon alloy. It can also be used for a little part in a gap and putting brazing widely.	BA4045	9.0 ~ 11.0	Less than 0.30.	Less than 0.80.	Less than 0.20.	Less than 0.10.	Less than 0.15.	—	—	Rest	577	590	590 ~ 605
TA-101	A low silicon suits brazing of aluminum, a board of the aluminum alloy and a pipe, and can use for building up.	BA1-1	4.0 ~ 6.0	Less than 0.30.	Less than 0.80.	Less than 0.10.	Less than 0.05.	Less than 0.05.	—	Less than 0.20.	Rest	577	630	620 ~ 640
TA-102	It suits brazing of aluminum, a board of the aluminum alloy and a pipe and is excellent in the mechanical property. The melting point is low and the outward appearance is also good.	BA4343	6.8 ~ 8.2	Less than 0.25.	Less than 0.80.	Less than 0.20.	—	—	—	—	Rest	577	615	605 ~ 615
TA-103	It's aluminum and the prescription alloy which added copper to silicon alloy and is excellent in mint. The pull strength and wear resistance can generally use mint of the aluminum alloy (the AC system) for a cursed bill, and are also good.	BA4145	9.3 ~ 10.7	3.3 ~ 4.7	Less than 0.80.	Less than 0.20.	Less than 0.15.	Less than 0.15.	Less than 0.15.	—	Rest	520	585	570 ~ 640
TA-107	It's used for brazing of aluminum and a thin board of the aluminum alloy because the melting point is low in particular around the aluminum and the eutectic crystal temperature of the silicon alloy. It can also be used for a little part in a gap and putting brazing widely.	BA4047			Less than 0.80.	Less than 0.20.	Less than 0.15.	Less than 0.10.				577	580	580 ~ 605
TA-110	The color tone with the base-metal doesn't change with a department with a train after anode oxidation processing, and the fluidity is also good.	—	Product by our peculiar ingredient combination								485	520	520 ~ 550	

Solder for aluminum

TAS-500	The strength and the corrosion resistance are excellent in 350 °C-450 °C of liquid look temperature and 20 kilogram of tensile strength/square mm. The strength can use for soldering of variety metal of aluminum, stainless steel, a copper alloy and a die-cast, and equals brazing.	SAL-APX	Solder for aluminum produced by our peculiar ingredient combination.
TAS-515	It can also be used for less than 250 °C of liquid look temperature and tensile strength 3.0-10.0 kilogram/variety metal which are aluminum, stainless steel and a copper alloy in square mm. An acquaintance is good. It's used for a point of arrangement of a lead line in particular.	SAL-BQY	
TAS-750	The intermediate one with TAS-500 and TAS-515. The liquid look temperature is 250 °C-350 °C.	SAL-CRZ	
T500C	Aluminum solder. About 500 °C of liquid look temperature		

Weld rod for stainless steel List

Stainless steel film electric-arc welding rod

Brand	The use and the feature	J I S A W S	Scientific ingredient (%)								The tensile strength (kg/mm ²)	Growth rate (%)	
			C	S i	Mn	P	S	C r	N i	M o			Other
TSE-08	The weld metal is excellent in austenite stainless steel of 18%Cr and 8%Ni in an appetite-proof and a heat resistance, and nitric acid indicates strong corrosion resistance to an acid of oxidizability in particular.	D 308 E 308	0.064	0.29	0.58	0.029	0.004	19.75	9.91			60.5	41.5
TSE-08L	It's used for a weld of 304L mainly. Additionally it's also used for the steel weld hardened by 304 and air-cooling. Corrosion between the grain made a separation of chromium carbide and a decline of ductility are prevented because it's low carbon.	D 308L E 308L	0.038	0.75	1.81	0.022	0.006	19.27	9.89			60.5	51.0
TSE-09	It's used for a weld of 309S (25Cr-12Ni) stainless steel cast and cast steel material. Additionally it's excellent in an exceptional talent weld, so it's used for a weld of 18-8 stainless steel, mild steel, 18-8Cb and clad steel.	D 309 E 309	0.070	0.33	1.61	0.027	0.007	23.47	13.35			60.7	38.4
TSE-09Mo	It's used for a lining weld of stainless steel and a weld on the clad side of SUS316 clad steel of SUS309S, 25Cr-12Ni-Mo steel and SUS316. Crack resistance is excellent by addition of Mo.	D 309Mo E 309Mo	0.060	0.43	1.24	0.019	0.008	23.22	13.43	2.19		63.7	39.0
TSE-10	The weld which is used for a weld of SUS310S mainly, and is SUH33, weld of shellproof steel, high tensile steel and tough steel, weld of clad steel, SUS304 and carbon steel and weld of mild steel, high-alloy steel and medium alloyed steel.	D 310 E 310	0.100	0.39	1.56	0.028	0.008	26.28	20.49			58.0	40.4
TSE-16	It's used for a weld of SUS316, 13Cr, 18Cr stainless steel, amount Mn steel, high carbon steel, low alloyed steel and variety metal. You could excel by addition of Mo, that it's corrosion-resistant, acid resistant, it's indicated and corrosion resistance strong in something of sulfuric acid, nitric acid, acetic acid and formic acid is indicated.	D 316 E 316	0.050	0.28	0.75	0.036	0.007	19.76	13.37	2.64		62.8	42.3
TSE-16L	While it's used for a weld of SUS316L and SUS316, and it's low alloyed steel, high carbon steel and grain by weld of high chromium stainless steel and separation of chromium carbide, corrosion and a decline of ductility are prevented.	D 316 E 316L	0.032	0.28	0.80	0.033	0.006	19.66	13.39	2.65		57.4	41.6
TSE-16JIL	It's used for a weld of SUS316 and SUS316L of the chemical industry which handles sulfuric acid. Fused spray deposit is stainless steel of low carbon 19%Cr-12%Ni-2%Mo-Cu.	D 316JIL	0.033	0.22	1.41	0.029	0.014	19.06	13.23	2.37	C u 1.17	55.3	40.2
TSE-12	It's used for a weld on the clad side and a trim panel weld of chrome stainless steel of stainless steel, mild steel, high nickel alloy, stainless steel and 18-8 clad steel. There is no occurrence of ten sites of circle.	E 312	0.100	0.46	1.68	0.030	0.01	28.38	9.40			80.5	23.6
TSE-41	It's used for a weld of SUS403, SUS410 and SUS405, etc.. Excellent corrosion resistance is indicated in scientific medicine except for sulfuric acid and hydrochloric acid. There is self-softness, so fused spray deposit needs 300-350 °C of residual heat.	D 410 E 410	0.100	0.21	0.53	0.023	0.008	12.75	0.29			61.2	26.7

(Attention) Heat-treatment 850 °C X2hr → hearth cold sake 600 °C → air-cooling is needed about TSE-41.

Stainless steel rod for welds and wire material

Brand	The use	J I S A W S	Scientific ingredient (%)								Nb+Ta 10X C% ~1.0	
			C	S i	Mn	P	S	N i	C r	M c		Other
TSW-08	18-8 stainless steel materials	Y 308	<0.08	<0.60	1.0 ~ 2.5	<0.03	<0.03	9.0 ~ 11.0	19.5 ~ 22.0			
TSW-08L	Low carbon 18-8 stainless steel materials	Y 308L	<0.03	<0.60	1.0 ~ 2.5	<0.03	<0.03	9.0 ~ 11.0	19.5 ~ 22.0			
TSW-09	25-12 stainless steel materials	Y 309	<0.12	<0.60	1.0 ~ 2.5	<0.03	<0.03	12.0 ~ 14.0	23.0 ~ 25.0			
TSW-10	25-20 stainless steel materials	Y 310	<0.15	<0.60	1.0 ~ 2.5	<0.03	<0.03	20.0 ~ 22.5	25.0 ~ 28.0			
TSW-16	18-12-2Mo stainless steel materials	Y 316	<0.08	<0.60	1.0 ~ 2.5	<0.03	<0.03	11.0 ~ 14.0	18.0 ~ 20.0	2.0 ~ 3.0		
TSW-16L	Low carbon 18-12-2Mo stainless steel materials	Y 316L	<0.03	<0.60	1.0 ~ 2.5	<0.03	<0.03	11.0 ~ 14.0	18.0 ~ 20.0	2.0 ~ 3.0		
TSW-47	18-8Ti 18-8Cb For stainless steel.	Y 347	<0.08	<0.60	1.0 ~ 2.5	<0.03	<0.03	9.0 ~ 11.0	19.0 ~ 21.5			
TSW-41	For 13Cr	Y 410	<0.12	<0.50	<0.60	<0.03	<0.03	<0.60	11.5 ~ 13.5	<0.60		
TSW-43	For 18Cr	Y 430	<0.10	<0.60	<0.60	<0.03	<0.03	<0.60	15.5 ~ 17.0			

Toyo Flux List

Flux for silver brazing material and phosphorus copper brazing material

Brand	The use and the feature	Application brazing material	Application base-metal	The activated temperature	The state	Residual thing remover
TF-601	The all-around type which can be used for all brazing as general silver brazing, phosphorus copper brazing and special phosphorus copper soldering agent.	Silver braze • Phosphorus copper braze • Special Phosphorus copper braze	Iron and nonferrous metals (except for light alloy)	600 ~ 850	Paste	Boiling water, dilute sulfuric acid and flux remover
TF-603	It's flux suitable for hot brazing relatively.	//	//	600 ~ 900	Paste	//
TF-604	Suitability possesses the hot performance for aluminum Blas.	Aluminum Blas	Aluminum Blas	600 ~ 850	Paste	//

Flux for brass brazing material

TF-200	A good weld result is obtained by flux for brass brazing material which is generally used.	TOYO-BIN B•D type, TC-202, TC-203	Iron and nonferrous metals (except for light alloy)	600 ~ 950	Powdery	Sulfuric acid and flux remover
TF-250	It's suitable for a weld of nickel bronze which requires the strength in particular.	TC-209, TC-211, TC-351	//	750 ~ 1100	Powdery	//

Flux for aluminum and aluminum variety metal

TF-100	It can be used for all aluminum brazing material of the BAl standard, and I possess the excellent performance in particular.	TA-100, TA-101, TA-103	Light alloy	450 ~ 650	Powdery	Hot water washing, nitric acid, caustic soda and flux remover
TF-110	Exclusive flux of invariant color aluminum low-temperature welding rod material.	TA-110	//	480 ~ 670	//	//
TF-150	Flux for with gas of pure aluminium.	Pure aluminium for with gas	Pure aluminium	600 ~ 700	//	//
TF-151	The welding activity and the adhesion force are good by flux for corrosion-resistant aluminum alloy.	Corrosion-resistant aluminum for with gas and others	Corrosion-resistant aluminum	550 ~ 660	//	//
TF-500	It's suitable for joining of aluminum and aluminum and joining of aluminum and variety metal as flux for 500#.	T-500	Light alloy and variety metal	350 ~ 500	//	//
TF-515	The activated temperature is the coldest flux and is joining of aluminum and variety metal.	T-515	//	150 ~ 250	//	//
TF-750	It's intermediate flux of TF-500 and TF-515 and is suitable for joining between the aluminum and joining of aluminum and variety metal.	T-750	//	200 ~ 350	//	//

Other than it

Cored Wire

TCW-107	Washing flux type-lessness. For aluminum
TCW-607	Washing flux type-lessness. For silver brazing material

Toyo Tungsten pole stick

Brand	J I S A W S	Scientific ingredient (%)				Display color	Size (mm)
		W	T h o 2		Other		
Pure tungsten	YWP	More than 99.95.			Less than 0.05.	White	Diameter 1.0 1.6 2.4 4.0 5.0 6.4 (Allowable difference ± 0.05)
Tungsten with 1% thorium	YWTh-1	Re	0.8 ~ 1.2		//	Yellow	
Tungsten with 2% thorium	YWTh-2	Re	1.7 ~ 2.2		//	Red	Diameter 3.0 3.2 4.8 5.0 (Allowable difference ± 0.1)
2% cerium tungsten		Re		Ce ₂ O ₃ 1.8 ~ 2.2	//		
	<ul style="list-style-type: none"> ● It can be used by both of an exchange pole and a direct current pole. Radioactive materials aren't included. ● There are few shape changes in a pole point by an arc, and a stable arc is obtained. 						The length 150 (Allowable difference ± 0.1)
1% lanthanum tungsten		Re	1.7 ~ 2.2	La 0.9 ~ 1.2			

Weld tools and materials

Brand	The use and the feature	Scientific ingredient (%)			The temperature (°C)		
		A g	S b	S n	Solid phase line	Liquidus phase line	The brazing temperature
TG-700	The strength is several times as strong as [10-11 kilogram/square millimeter] and ordinary solder, and this solder points to stainless steel variously.	3.5		Rest	185	220	225 ~ 300
TG-701	The strength is excellent and an acquaintance to stainless steel, iron and copper is better than TG-700.	3.5	0.5	Rest	220	235	240 ~ 320

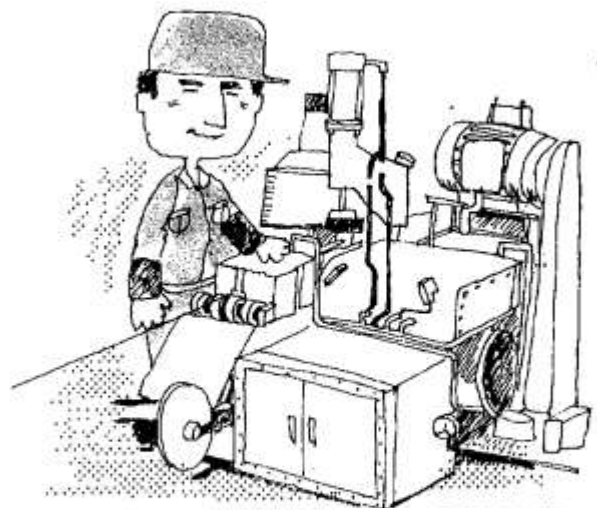
Special solder

Vapor tank	This equipment makes vapor flux be vaporized and makes them mix with acetylene gas, and makes them jet vapor flux from a point of a torch. It can be done by partial oxidation-lessness with a train without using more conventional solid body flux to use these equipment and vapor flux directly. After brazing, there are no leavings, so removal operation of leavings after a weld can completely be omitted.
Gas saver	This equipment is the gas saving container ignition can disappear also by which can also do fire of a torch automatically without cook's operation while a weld and brazing are working, without operating a cook of acetylene and oxygen. It can be installed easily by mounting hardware. Working troublesome disappearance and ignition are solved easily. It's very useful for saving of acetylene and oxygen.
Automatic brazing machine	Acquirement isn't needed at all by use of this automatic brazing machine, and brazing work which reaches in the past and needs skillfulness can be mass-produced inexpensively without a blur early easily. We'll design and make according to the customer's request.
Converter	The AC-DC weld electric current strange way, it's a container. The strange way, the strange way by which a container changed a weld electric current to direct current from an exchange and did single-phase full-wave rectification, a pole stick of a DC positive pole, DC reverse polarity and AC-DC type can be used by output of a container.

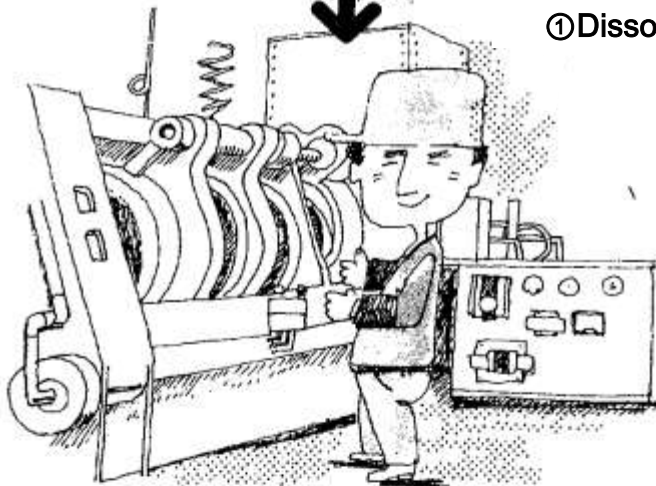
Of low-temperature welding rod, until it's possible.



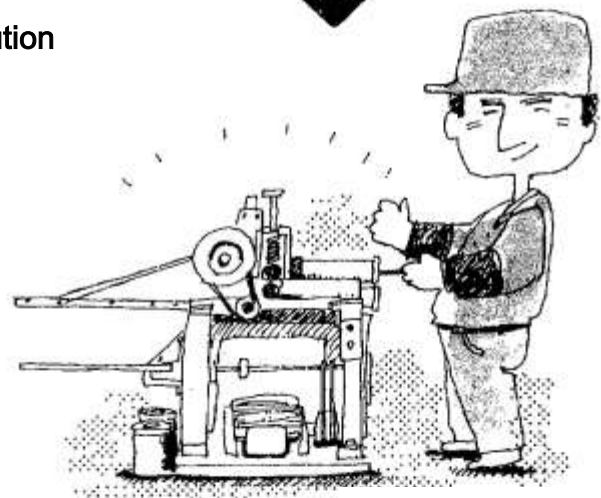
① Dissolution



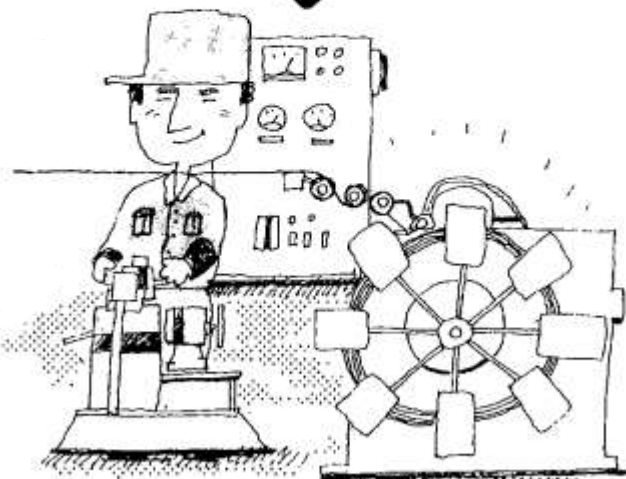
④ Wiredrawing



② Extruder



⑤ Straight line



③ Crossline machine



⑥ Flux painting



TOYO ALLOY

LOW TEMPERATURE WELDING RODS.

Low-temperature welding rod material
Oxidation true spherical powder without
Additionally special alloy

TOYO METAL CO. , LTD

Headquarters	4-3, 4-CHO, DEJIMA-KAIGAN-DORI, SAKAI-KU, SAKAI-CITY, OSAKA, JAPAN
POSTAL CODE 590-0833	TEL +81-72-241-4422 FAX +81-72-241-4430
Hyogo factory	784-1, MORIMOTO, NAKA-KU, TAKA-CHO, TAKA-GUN, HYOGO, JAPAN
POSTAL CODE 679-1124	TEL +81-795-32-3005 FAX +81-795-32-0411
Kanto business office	625-21, AMAGAYA, OYAMA-CITY, TOCHIGI, JAPAN
POSTAL CODE 323-0826	TEL +81-285-27-9871 FAX +81-285-27-9950