

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



**Plunger special coating (option) : TIN / WCC / DLC / AP

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
MAN	L16/24 TIER I (SUITABLE FOR)	O (L'O TYPE : IMO-1521-1522, IMO-1529-1530) (W/W TYPE : IMO-1532, 1534)	O (L'O TYPE : IMO-0491) (W/W TYPE : IMO-0499)	O	O	O
	L16/24 TIER II (SUITABLE FOR)	O (IMO-2097, 2456)	O (IMO-1364)	O	O	O
	L21/31 TIER I (SUITABLE FOR)	O (L'O TYPE : VUO-U9141d/EV, VUO-U9167d/EV)	O (L'O TYPE : IMO-0506, IMO-0531)	O	O	O
	L21/31 TIER II (SUITABLE FOR)	O (IMO-2161)	O (IMO-1606)	O	O	O

O = available from present range - = requires min. order quantity X = not available from present range

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



**Plunger special coating (option) : TIN / WCC / DLC / AP

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
MAN	L23/30 (SUITABLE FOR)	O (L'O TYPE : BLQ/E, BMW/E, BHE/E BPF/E, BPJ/E(IMO-17.06)) (NICO TYPE : B23FV1, IMO-17.02)	O (L'O TYPE : IMO-36.03, 36.02) (NICO TYPE : B23FP1(IMO-36.03) B23FP2(IMO-36.02))	O	O	O
	L28/32 (SUITABLE FOR)	O (L'O TYPE : BPG/E, BNE/E, BKV/E, BKZ/E) (NICO TYPE : B28FV1, IMO-17.01)	(L'O TYPE : IMO-36.01)	O	O	O

O = available from present range - = requires min. order quantity X = not available from present range

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



**Plunger special coating (option) : TIN / WCC / DLC / AP

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
MAN	L27/38 Tier I (SUITABLE FOR)	O (L'O TYPE : IMO-1482), (NICO TYPE : IMO-1859)	O (L'O TYPE : IMO-1266)	O	O	-
	L27/38 Tier II (SUITABLE FOR)	O (L'O TYPE : IMO-1859, NON-COOLING)	O (NICO TYPE : IMO-1541)	O	O	-
	L32/40 (SUITABLE FOR)	O (L'O TYPE : IMO-1235,1562, IMO-1611,1758)	O (L'O TYPE : IMO-1209,1228,1385)	O	O	-

O = available from present range - = requires min. order quantity X = not available from present range

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



**Plunger special coating (option) : TIN / WCC / DLC / AP

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
MAN	L40/54 (SUITABLE FOR)	X	O	X	O	-
	L48/60B (SUITABLE FOR)	O (IMO-1721,1142)	O (IMO-1312)	O	O	-

O = available from present range - = requires min. order quantity X = not available from present range

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



Plunger special coating (option) : TIN / WCC / DLC / AP

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
MAN	L52/55 (SUITABLE FOR)	O	O	X	X	-
	L58/64CD (SUITABLE FOR)	O (IMO-1533)	O (IMO-1208)	O	O	-

O = available from present range - = requires min. order quantity X = not available from present range

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



****Plunger special coating (option) : TIN / WCC / DLC / AP**

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
HIMSEN	H17/28 (SUITABLE FOR)	O (H17FV1,H17FV2)	O (H17FP1)	O	O	-
	H21/32 (SUITABLE FOR)	O (H21FV1,H21FV2)	O (H21FP1)	O	O	O
	H25/33 (SUITABLE FOR)	O (H25FV1,H25FV4)	O (H25FP1)	O	O	O
	H32/40 (SUITABLE FOR)	O (H32FV1,H32FV4)	O (H32FP1)	O	O	O

O = available from present range - = requires min. order quantity X = not available from present range

Products Overview

F.O injection Equipment
for Marine Diesel Engine

This product and IMO No. have no concern with Genuine Manufacturer & it's replacement parts



ENGINE MAKER	ENGINE TYPE	VERSION	SPINDLE GUIDE	NON RETURN VALVE	SPINDLE GUIDE, COMPLETE
MAN	26/35/42MC (SUITABLE FOR)	CONVENTIONAL	O	O	O
		(PLATE. NO.)	90910-71-173 90910-74-090,207,089 90910-108-090,207,089	90910-71-148 90910-74-065,161 90910-108-065,161	344A-A 90910-71-173,148 90910-74-090,207,089,065,161 90910-108-090,207,089,065,161
		SLIDE TYPE	O	O (Thrust Foot)	O
		(PLATE. NO.)	90910-0146-065,053,950,244 90910-0152-053,220,950,219,207	90910-0146-219,220 90910-0152-161,185,148,173	90910-0146-124 90910-0152-232 WITHOUT 065
	50/60/70MC (SUITABLE FOR)	CONVENTIONAL	O	-	O
		(PLATE. NO.)	90910-45-148 90910-57-124 90910-64-124		90910-45-148 90910-57-124 90910-64-124
		SLIDE TYPE	O	O	O
		(PLATE. NO.)	90910-93-053,041,028,016 90910-0135-077 90910-0145-077	90910-93-197 90910-0135-197 90910-0145-197	90910-93-053,041,028,016,197 90910-0135-077,197 90910-0145-077,197
	80/90 MC (SUITABLE FOR)	SLIDE TYPE	O	O	O

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
AKASAKA	A24	O	X	X	O	X
	A25	O	X	X	O	X
	A28	O	O	O	O	X
	A31	O	O	O	O	X
	A34	O	O	O	O	X
	A37	O	O	O	O	X
	A38	O	O	O	O	X
	A40(AH40AKD)	O	O	O	O	X
	A41	O	O	O	O	X
	A45	O	O	X	O	X
	AH24	X	O	O	O	X
	AH25	X	O	O	O	X
	AH27	O	O	O	O	X
	AH28(AH28AFD)	O	O	O	O	X
	AH30	O	O	O	O	X
	AH33	O	O	O	O	X
	AH36	O	O	O	O	X
	AH38	O	O	O	O	X
	AH38A	O	O	O	O	X
	AH40(F)	O	O	O	O	X
	DH27SS	X	O	O	O	X
	DH35SS	X	O	O	O	X
	DH36SS	O	O	O	O	X
	DH38SS	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
AKASAKA	DH46SS	O	O	O	O	X
	DH51SS	O	O	O	O	X
	DM26(DM26R)	O	O	O	O	X
	DM26FD	O	O	O	O	X
	DM26K(DM26KFD)	O	O	O	O	X
	DM28(DM28A/DM28AR)	O	O	O	O	X
	DM28AKR(DM28AKFD)	O	O	O	O	X
	DM28R	O	O	O	O	X
	DM30(DM30FD)	O	O	O	O	X
	DM33	O	O	O	O	X
	DM36	O	O	O	O	X
	DM38	O	O	O	O	X
	DM38A(DM38AK)	O	O	O	O	X
	DM40(DM40K)	O	O	O	O	X
	DM46(DM46AR/DM46SS)	O	O	O	O	X
	DM47	O	O	O	O	X
	DM51SS	O	O	O	O	X
	DM51SS(DM51AK)	O	O	O	O	X
	K26SKR	O	O	O	O	X
	K26SR	O	O	O	O	X
	K28BR(K28FD)	O	O	O	O	X
	K31FD(K31SR)	O	O	O	O	X
	KH 6CC-A 625	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
AKASAKA	MA6SS	O	O	O	O	X
	MH23	O	O	O	O	X
	TH6SS	O	O	O	O	X
	TM6SS	O	O	O	O	X
	U26	O	O	O	O	X
	UEC37/88H	O	O	O	O	X
	UEC37H2B	O	O	O	O	X
	UEC37LA(UEC37L)	O	O	O	O	X
	UEC45/115H(UEC45HA)	O	O	O	O	X
	UEC45LA(UEC45L)	O	O	O	O	X
	UEC50LS2	O	O	O	O	X
	UEC52/105B	O	X	X	O	X
	UEC52/105C	O	X	X	O	X
	UEC52/105D(UEC52/105DS)	O	O	O	O	X
	UEC52/105E	O	O	O	O	X
	UEC52/125H	O	O	O	O	X
	UEC52/90C	O	O	O	O	X
	UEC52/90D	O	O	O	O	X
	UEC52HA	O	O	O	O	X
	UEC52L	O	O	O	O	X
	UEC52LA	O	O	O	O	X
	UEC52LS	O	X	X	O	X
	UEC60/150H	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
AKASAKA	UEC60/150HE	O	X	X	O	X
	UEC60HA	O	O	O	O	X
	UEC60LA	O	X	X	O	X
	UEC60LS	O	X	X	O	X
	UEC65/135C(UEC65/135D)	O	X	X	O	X
	UET39/65C	O	O	O	O	X
	UET39/65C(UET39/65D)	O	O	O	O	X
	UET45/75C	O	O	O	O	X
	UET45/80D(UET45/80DS)	O	O	O	O	X
DAIHATSU	DK20	O	O	O	O	X
	DK28	O	O	O	O	X
	DK32	O	O	O	O	X
	DC17	O	O	O	O	X
	DL16	O	O	O	O	X
	DL19	O	O	O	O	X
	DL20	O	O	O	O	X
	DL22	O	O	O	O	X
	DL24	O	O	O	O	X
	DL26	O	O	O	O	X
	DL28	O	O	O	O	X
	DL32	O	O	O	O	X
	DLB20	O	O	O	O	X
	DLB22	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
DAIHATSU	DLB26	O	O	O	O	X
	DLM22	O	O	O	O	X
	DLM24	O	O	O	O	X
	DLM26	O	O	O	O	X
	DLM26FS	O	O	O	O	X
	DLM28	O	O	O	O	X
	DS18(DS18A)	O	O	O	O	X
	DS19A	O	O	X	O	X
	DS22	O	O	O	O	X
	DS22S	X	O	O	O	X
	DS26	O	O	O	O	X
	DS26A	O	O	O	O	X
	DS28	O	O	O	O	X
	DS32	O	O	O	O	X
	DSD22	O	O	O	O	X
	DSM26	O	O	O	O	X
	DSM32	O	O	O	O	X
	PKTB16	X	O	O	O	X
	PKTB16A	X	O	O	O	X
	PL24	O	O	O	O	X
	PS18D	X	X	X	O	X
	PS20	O	O	O	O	X
	PS22D(PST22)	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
DAIHATSU	PS22D(PSTCM22)	O	O	O	O	X
	PS26D(PSHTB,C26D)	O	O	O	O	X
	PS26H(PSHTB,C,D26H)	O	O	O	O	X
	PS30	O	O	O	O	X
HANSHIN	EL30	O	O	O	O	X
	EL32	O	O	O	O	X
	EL35	O	O	O	O	X
	EL38	O	O	O	O	X
	EL40	O	O	O	O	X
	EL44	O	O	O	O	X
	L24GSH	O	O	O	O	X
	L26AGS	O	O	O	O	X
	L26BGHS(L26BGSH)	O	O	O	O	X
	L43SH	O	O	O	O	X
	L46SH	O	O	O	O	X
	LF46	O	O	O	O	X
	LF50	O	O	O	O	X
	LF54	O	O	O	O	X
	LF58	O	O	O	O	X
	LH26	O	O	O	O	X
	LH26G	O	O	O	O	X
	LH28	O	O	O	O	X
	LH30L	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
HANSHIN	LH31L	O	O	O	O	X
	LH34L	O	O	O	O	X
	LH38	O	O	O	O	X
	LH41L(LH41LA)	O	O	O	O	X
	LN33	O	O	O	O	X
	LU26	O	O	O	O	X
	LU26G	O	O	O	O	X
	LU28	O	O	O	O	X
	LU28G(LU28ARG)	O	O	O	O	X
	LU30AG	O	O	O	O	X
	LU32(LUD32)	O	O	O	O	X
	LU35(LUD35)	O	O	O	O	X
	LU38(LUS38)	O	O	O	O	X
	LU40(LUS40)	O	O	O	O	X
	LU46	O	O	O	O	X
	LU46A	O	O	O	O	X
	LU50(LU50A)	O	O	O	O	X
	LU54(LU54A)	O	O	O	O	X
	LUD24	O	O	O	O	X
	LUD26	O	O	O	O	X
	LUD35	O	O	O	O	X
	LUN28(LUN28A)	O	O	O	O	X
	LUN28AG	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
HANSHIN	LUS24	O	O	O	O	X
	LUS24(LUS24G)	O	O	O	O	X
	MU37	O	O	O	O	X
	MUH28	O	O	O	O	X
	Z650-ASH	O	O	O	O	X
	Z6VSH	O	O	O	O	X
MAK	452AK	O	O	X	X	X
	453C	O	O	X	X	X
	M25	O	O	X	X	X
	M32	O	O	X	O	X
	M35	O	O	X	X	X
	M43C	X	O	X	X	X
	M551	O	O	X	X	X
	M552	O	O	O	X	X
MWM	TBD645	O	O	O	X	X
NIIGATA	16X-A	O	O	O	O	X
	31BLGT	O	O	X	X	X
	33XB	O	X	X	O	X
	34HLX	O	O	X	X	X
	4S6HZ28	O	X	X	O	X
	L16US-A	O	X	X	O	X
	L16XC	O	O	O	O	X
	L18CX(MG18CX)	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
NIIGATA	L20AX(MG20AX)	O	O	O	O	X
	L20CX(MG20CX)	O	O	O	O	X
	L22T(M22T)	X	O	O	O	X
	L22X	O	O	O	O	X
	L25AX	O	O	X	O	X
	L25BX	O	O	O	O	X
	L25BX(MG25BX)	O	O	O	O	X
	L25CX(MG25CX)	O	O	O	O	X
	L25CXE	O	O	O	O	X
	L25HS	O	X	X	O	X
	L28BX(MG28BX)	O	O	O	O	X
	L28HX(MG28HX)	O	X	X	O	X
	L28X(MG28X/M28EX)	O	O	O	O	X
	L31EZ(MG31EZ)	O	O	X	X	X
	L31FZ	O	O	O	O	X
	L31X(MG31X)	O	O	O	O	X
	L34X(M34X)	O	O	O	O	X
	L34X(M34X)	O	O	O	O	X
	L40CFX(L40CX(50HZ))	O	O	O	O	X
	L40X(MG40X)	O	O	O	O	X
	LF20	O	O	X	O	X
	M22T	O	O	O	O	X
	M24GT	O	O	O	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
NIIGATA	M26AGT(M26AFT)	O	O	O	O	X
	M26AGTB	O	O	X	O	X
	M26KGHS(M26KEHS)	O	O	O	O	X
	M26ZE(M26ZG)	O	O	O	O	X
	M28AFD	O	X	X	O	X
	M28AGTE(M28AFTE/M28AET)	O	O	O	O	X
	M28DHS(M28EHS)	O	O	O	O	X
	M28GX	O	O	O	O	X
	M28HS	O	O	O	O	X
	M28KGHS	O	O	O	O	X
	M28ZE(M28ZG)	O	O	O	O	X
	M31AGTE(M31AFTE)	O	O	O	O	X
	M31CHS	O	O	O	O	X
	M31EX(M31GX)	O	O	O	O	X
	M31HS	O	O	O	O	X
	M31KEHS(M31KGHS)	O	O	O	O	X
	M31ZFTE	O	X	X	O	X
	M33AHS(M33AGHS)	O	O	O	O	X
	M33HS	O	O	O	O	X
	M34AGT(M34AFT)	O	O	O	O	X
	M37BHS(M37CHS)	O	O	O	O	X
	M40EX	O	O	O	O	X
	M42T	O	X	X	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
NIIGATA	MF31	O	O	X	O	X
	MG28BXB(MG28BXE)	O	X	O	O	X
	MG30GT	O	X	X	O	X
	NSC-M	O	O	O	O	X
	NSD-G(NSF-G)	O	O	O	O	X
	PA5L	O	O	X	O	X
	PA6L	O	O	X	O	X
PIELSTICK	PA6V280	O	O	O	X	X
	PC2-2	O	O	O	X	X
	PC2-5	O	O	O	X	X
	PC2-6	O	O	O	X	X
SKL	25/29	X	O	O	X	X
	48/42	O	O	O	X	X
	NVD 36.1	O	O	O	X	X
	NVD48A2U	O	O	O	X	X
	VD26/20 AL-2	O	O	O	O	X
SULZER	40/48	O	O	X	X	X
	AL 20/24	O	O	O	X	X
	AL 25/30	O	O	X	X	X
	TAD48	O	X	X	X	X
WARTSILA	L20	O	O	X	X	X
	W32	O	O	X	O	X
	W46	X	X	X	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
YANMAR	AL-(HT,UT,ST)	O	O	O	O	X
	DE18	O	X	O	X	X
	EY18	O	O	O	O	X
	EY22	O	X	X	X	X
	GAL	O	O	X	O	X
	GL	O	O	O	O	X
	M200	O	O	O	O	X
	M220	O	O	O	O	X
	MAL	O	O	O	O	X
	MF24	O	X	X	O	X
	MF28	O	X	X	O	X
	MF33	O	O	O	O	X
	N165	O	O	O	O	X
	N18	O	O	O	O	X
	N21	O	O	O	O	X
	N260LENC	X	O	X	O	X
	N330	O	O	O	O	X
	NF-24BT	O	X	X	O	X
	NY16	O	X	O	X	X
	RAL	X	O	O	O	X
	S165	O	O	O	O	X
	S185	O	O	O	O	X
	T210	X	O	X	O	X

O = available from present range - = requires min. order quantity X = not available from present range

General Overview of Fuel Injection parts

* Arranged order by ABC

2021-03-25

This product have no concern with Genuine Manufacturer & it's replacement parts

ENGINE MAKER	ENGINE TYPE	NOZZLE	PLUNGER & BARREL	DELIVERY VALVE	FUEL VALVE COMPLETE	FUEL PUMP COMPLETE
YANMAR	T220	O	O	O	O	X
	T240	O	O	O	O	X
	T240L-SX	O	O	X	O	X
	T250	O	X	X	O	X
	T260	O	O	O	O	X
	U	O	X	X	O	X
	UL	O	O	O	O	X
	Z280	O	O	O	O	X
	ZL	O	O	O	O	X
	Z-ST	X	O	O	O	X