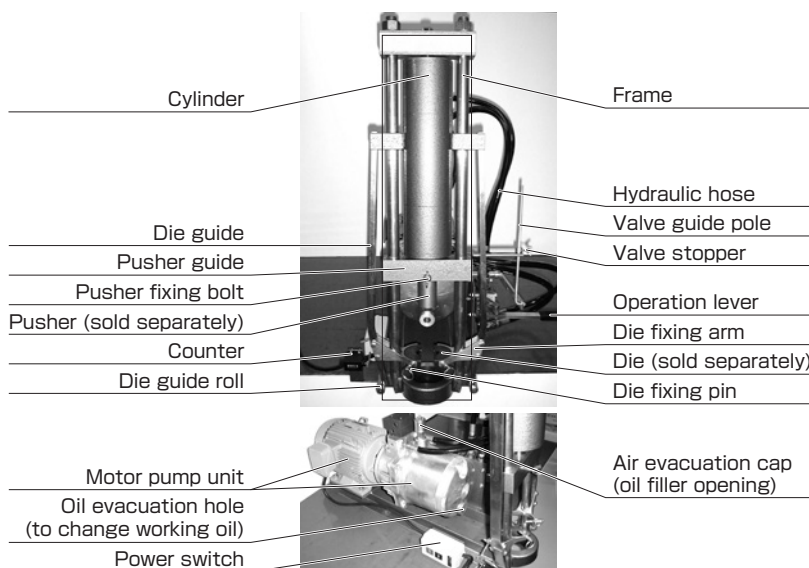


## Swage coupling (with Mark 9)

### Setup and specifications



#### Specifications

Weight : 90kg  
 Size : 520×820×800mm  
 Electric motor : three phase 200V 2.2kw  
 Hydraulic pump : Max. pressure 14.3 MPa  
 Working pressure 11.2 MPa  
 (Relief pressure already set)  
 Hydraulic cylinder : Double-acting special  
 cylinder stroke 150 mm  
 Working oil : turbine oil VG46 or equivalent

For details such as setting-up and electric wiring, please read the instruction manual that comes with the product.

### Assembling method

#### 1 Preparation



Prepare appropriate hose, swage coupling, pusher, die, hose cutter, holding die, lubricant\*, plastic hammer, scale, and white pen.

\* lubricant...  
 Steel coupling : Nihon Kosakuyu PG3740  
 Stainless coupling :  
 size O2-12 : JX Nippon Oil & Energy CFH68  
 size 16 : JX Nippon Oil & Energy DPX100

A 50cc bottle of lubricant (for steel coupling) comes with a set.

**CAUTION** If the recommended lubricant is not applied, coating damage and/or socket buckling may occur.

#### 2 Hose cutting



Determine the cutting length of the hose based on the hose assembling length and cut the hose squarely using the special hose cutter.

**WARNING** Do not touch the blade of the cutter.

**CAUTION** The slanted cut section may cause pullout of the hose and leakage.

**CAUTION** If the blade is blunt, correct assembly is not possible. Change the hose cutter in this case.

#### 3 Marking the insertion length of the hose



Measure the insertion length of the hose with a scale and mark the hose at the insertion length with the white pen.

It is recommended to draw a marking line with a width of about 2 mm in order to check it after swaging.

#### 4 Preparation for the hose insertion

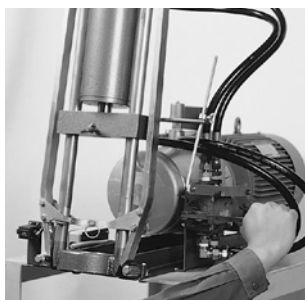


Apply the lubricant to the inner surface of the hose and insert the coupling to the marked position. When it is difficult, use the holding die to fix the hose and hit the coupling with the plastic hammer.

#### CAUTION

If the insertion is incomplete, pullout of the hose, leakage, or damage may occur.

#### 5 Lifting pusher holder



Push the operation lever to the back to lift up the pusher holder.

#### WARNING

Do not let the pusher holder down before the die pusher is attached.

#### 6 Attachment of pusher



Attach the pusher to the pusher holder. Fix the pusher by turning the screw of the pusher holder so that the pusher can freely rotate.

#### WARNING

Only operate with the power off.

#### CAUTION

The wrong choice of pusher will cause pullout of the hose, leakage, or damage.

## 7 Fixing die

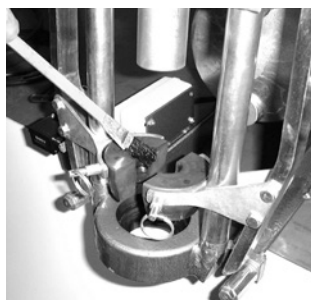


Attach the die onto the die fixing arm using the fixing pin.

**⚠ WARNING**  
Only operate with the power off.

**⚠ CAUTION**  
The wrong choice of pusher will cause pullout of the hose, leakage, or damage.

## 8 Application of lubricant



Apply lubricant to the inner surface of the die.

\* lubricant...  
Steel coupling : Nihon Kosakuyu PG3740  
Stainless coupling :  
size 02-12 : JX Nippon Oil & Energy CFH68  
size 16 : JX Nippon Oil & Energy DPX100

**⚠ CAUTION**  
If the recommended lubricant is not applied, coating damage and/or socket buckling may occur.

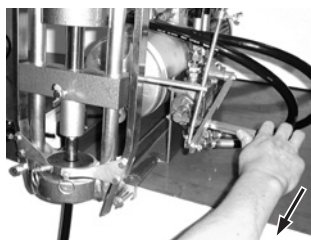
## 9 Insertion to pusher



Insert the coupling, to which the hose is inserted, into the pusher.

**⚠ WARNING**  
Use a hose of sufficient length to hold the hose.

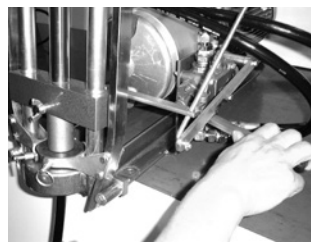
## 10 Hose assembling (1)



Hold the hose beneath the die base with your left hand. Pushing the connector toward the pusher, pull the operation lever with your right hand to send the pusher down. As the pusher comes down, adjust the positions of the die hole and the connector edge so they coincide.

- ⚠ DANGER** It is dangerous to hold the hose near the die base. The die could trap your hand.
- ⚠ DANGER** Never touch the moving parts when operating the tool.
- ⚠ CAUTION** Discrepancy of the positions of the die hole and the connector edge might cause damage to the coupling, such as socket defect.
- ⚠ CAUTION** When the die closes, check that the hose is not stuck in the die.

## 11 Hose assembling (2)



Pull the operation lever until the pusher touches the die.

**⚠ CAUTION**  
If you stop before the pusher touches the die, the swaging is insufficient and pullout of the hose or leakage may occur.

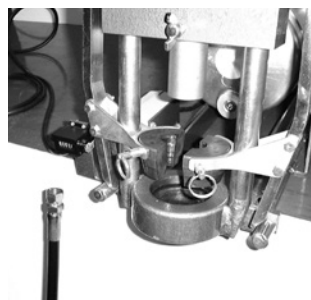
## 12 Hose assembling (3)



Push the operation lever to the back with your right hand to send the pusher up. When the pusher goes up, the die opens by itself and the hose assembly can be removed. (The valve stopper adjusts the upper position of the cylinder.)

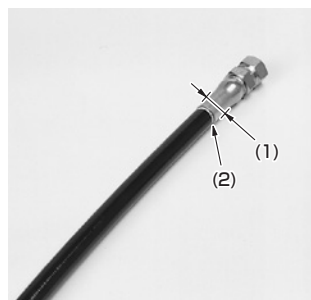
**⚠ CAUTION**  
Pay strict attention to prevent the die from falling.

## 13 Completion of hose assembling



**⚠ CAUTION**  
Before putting the die in storage, remove dust from the inner surface and thinly grease it to prevent rust.

## 14 Check of hose assembly



- (1) Check the swage diameter (see p.81).
- (2) Check the mark position of the hose insertion length.
- (3) Check the appearance of the coupling. (Check for any damage or misalignment of the track of the die.)
- (4) Check the appearance of the hose. (Check for any kink or cut.)

Should problems occur, do not use the hose assembly.

For details such as maintenance, please read the instruction manual that comes with the product.

## Swage coupling (applicable to both Mark 10 and Mark 9)

**[Swage coupling]** \* For any couplings which are not introduced in the catalogue, please contact us.

### A Coupling deduction length

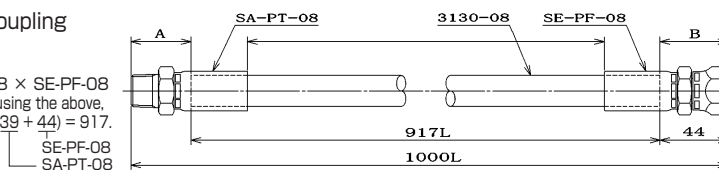
The cutting length of a hose is obtained by the hose-coupling assembly length minus the coupling deduction length\*.

\* Coupling deduction length :

A (SA coupling) and

B (SE, SF coupling) in the figure.

Ex. 3130-08 × 1000L SA-PT-08 × SE-PF-08  
If you wish to make a hose assembly using the above,  
cut the hose at the length of  $1000 - (39 + 44) = 917$ .



### B Selection of pusher die

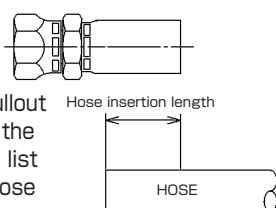
Part numbers are punched on pushers and dies.

The wrong pusher or die will cause oil leakage or pullout of the hose, or disable hose assembling, so always check the number.

### C Hose insertion length

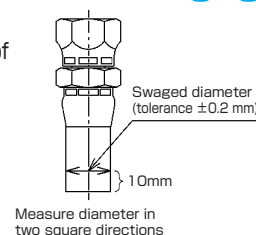
Hose insertion lengths are presented in the list below.

A shortage of hose insertion length will cause oil leakage or pullout of the hose. So mark the hose at the hose insertion length given in the list and insert the coupling into the hose to meet the marked position.



### D Socket outer diameter after swaging

The socket outer diameter after swaging is measured at the point of about 10 mm from the socket end. Please regularly check the finished size. If the size is not appropriate, consult us to avoid possible oil leakage or pullout of the hose.



## [Steel coupling]

Hose series	Hose size	Swage coupling part No.	A		B		C		D	
			Coupling deduction length (mm)	Pusher part No.	Die part No.	Hose insertion length (mm)	Socket outer diameter after swaging (mm)			
LB70	02	SSA-PT-02	26.0	PSA-02	SPLB70-02	12	8.5±0.1			
		SSE-PF-02	30.0	PSE-02-001						
		SSF-PF-02								
LB70 · LF70	04	SA-PT-04-14	32.0	PSA-04	SP14-04-07	19	12.4±0.1			
		SE-PF-04-14	31.0	PSE-14-04						
		SF-PF-04-14								
LB70 · LF70	06	SA-PT-06-14	33.0	PSA-06	SP14-06-07	22	15.6±0.1			
		SE-PF-06-14	32.0	PSE-14-06						
		SF-PF-06-14								
LB70 · LF70	08	SA-PT-08-14	37.0	PSA-08	SP14-08	24	19.5±0.2			
		SE-PF-08-14	37.0	PSE-14-08						
		SF-PF-08-14								
LB70	10	SA-PT-10-N30	40.0	PSA-10	SP07-10	40	24.4±0.2			
		SE-PF-10-N30	44.0	PSE-10						
		SF-PF-10-N30								
LB70	12	SA-PT-12	43.0	PSA-12	SP3-12	40	28.1±0.2			
		SE-PF-12	47.0	PSE-12						
		SF-PF-12								
LB70	16	SA-PT-16	48.0	PSA-16	SP07-16	52	34.2±0.2			
		SE-PF-16	53.0	PSE-16						
		SF-PF-16								
1000 · 1100 · 1400	04	SA-PT-04-14	32.0	PSA-04	SP14-04	19	12.7±0.2			
		SE-PF-04-14	31.0	PSE-14-04						
		SF-PF-04-14								
	06	SA-PT-06-14	33.0	PSA-06	SP14-06	22	15.9±0.2			
		SE-PF-06-14	32.0	PSE-14-06						
		SF-PF-06-14								
1000	08	SA-PT-08-14	37.0	PSA-08	SP14-08	24	19.5±0.2			
		SE-PF-08-14	37.0	PSE-14-08						
		SF-PF-08-14								
1100	08	SA-PT-08-14	37.0	PSA-08	SP10-08	24	19.9±0.2			
		SE-PF-08-14	37.0	PSE-14-08						
		SF-PF-08-14								
1500	03	SA-PT-03-14	30.0	PSA-04	SP14-03	14.5	10.5±0.1			
		SE-PF-03-14	29.0	PSE-14-04						
		SF-PF-03-14								

Hose series	Hose size	Swage coupling part No.	A	B		C	D
			Coupling deduction length (mm)	Pusher part No.	Die part No.	Hose insertion length (mm)	Socket outer diameter after swaging (mm)
3130 · 34PW	02	SSA-PT-02	26.0	PSA-02	SP3-02-001	12	9.2±0.2
		SSE-PF-02	30.0	PSE-02-001			
		SSF-PF-02					
N3130 · 3700 3130 · 3000 · 34PW	03	SA-PT-03	32.0	PSA-04	SP3-03	26	12.4±0.2
		SE-PF-03	33.0	PSE-03			
		SF-PF-03					
	04	SA-PT-04	33.0	PSA-04	SP3-04	28	14.4±0.2
		SE-PF-04	36.0	PSE-04			
		SF-PF-04					
	05	SA-PT-05	35.0	PSA-06	SP3-05	28	16.0±0.2
		SE-PF-05	38.0	PSE-05			
	SF-PF-05						
	06	SA-PT-06	35.0	PSA-06	SP3-06	33	17.6±0.2
SE-PF-06		39.0	PSE-06				
SF-PF-06							
08	SA-PT-08	39.0	PSA-08	SP3-08	37	21.5±0.2	
	SE-PF-08	44.0	PSE-08				
SF-PF-08							
N3130 · 3700 3130 · 3000	12	SA-PT-12	43.0	PSA-12	SP3-12	40	28.1±0.2
		SE-PF-12	47.0	PSE-12			
		SF-PF-12					
	16	SA-PT-16	48.0	PSA-16	SP3-16	52	34.5±0.2
SE-PF-16		53.0	PSE-16				
SF-PF-16							
N3000 · HT	04	SA-PT-04	33.0	PSA-04	SPN-04	28	14.6±0.2
		SE-PF-04	36.0	PSE-04			
		SF-PF-04					
	06	SA-PT-06-N30	35.0	PSA-06	SPN-06	33	18.9±0.2
		SE-PF-06-N30	39.0	PSE-06			
	SF-PF-06-N30						
	08	SA-PT-08-N30	39.0	PSA-08	SPN-08	37	22.7±0.2
		SE-PF-08-N30	44.0	PSE-08			
SF-PF-08-N30							
10	SA-PT-10-N30	40.0	PSA-10	SPN-10	40	26.2±0.2	
	SE-PF-10-N30	44.0	PSE-10				
SF-PF-10-N30							
3R80	03	SA-PT-03-3R	35.0	PSA-04	SPH-03	23	13.5±0.2
		SE-PF-03-3R	36.0	PSE-03			
		SF-PF-03-3R					
	04	SA-PT-04-3R	33.0	PSA-04	SPH-04	28	17.2±0.2
		SE-PF-04-3R	36.0	PSE-04			
	SF-PF-04-3R						
	06	SA-PT-06-N30	35.0	PSA-06	SPH-06	33	20.1±0.2
SE-PF-06-N30		39.0	PSE-06				
SF-PF-06-N30							
08	SA-PT-08-N30	39.0	PSA-08	SPH-08	37	23.0±0.2	
	SE-PF-08-N30	44.0	PSE-08				
SF-PF-08-N30							
3R80 · 34PW	12	SA-PT-12-3R	43.0	PSA-12	SPH-12	40	29.5±0.2
		SE-PF-12-3R	47.0	PSE-12			
		SF-PF-12-3R					
	16	SA-PT-16-3R	48.0	PSA-16	SPH-16	52	37.8±0.2
		SE-PF-16-3R	53.0	PSE-16			
SF-PF-16-3R							

Hydraulic hose products

Hydraulic Hose

Airless-painting Hose

Clean Hose

Adapter

Hose Guard  
Parts, Specially-  
Treated Parts

Assembling  
Machine,  
Jig, Tool

Hose  
Assembling  
Method

Technical  
Document

Reference  
Document

## Swage coupling (applicable to both Mark 10 and Mark 9)

**[Swage coupling]** \* For any couplings which are not introduced in the catalogue, please contact us.

### A Coupling deduction length

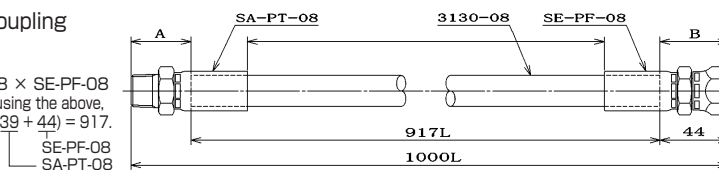
The cutting length of a hose is obtained by the hose-coupling assembly length minus the coupling deduction length\*.

\* Coupling deduction length :

A (SA coupling) and

B (SE, SF coupling) in the figure.

Ex. 3130-08 × 1000L SA-PT-08 × SE-PF-08  
If you wish to make a hose assembly using the above,  
cut the hose at the length of  $1000 - (39 + 44) = 917$ .



### B Selection of pusher die

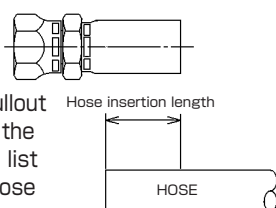
Part numbers are punched on pushers and dies.

The wrong pusher or die will cause oil leakage or pullout of the hose, or disable hose assembling, so always check the number.

### C Hose insertion length

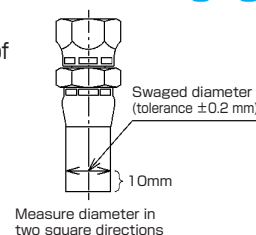
Hose insertion lengths are presented in the list below.

A shortage of hose insertion length will cause oil leakage or pullout of the hose. So mark the hose at the hose insertion length given in the list and insert the coupling into the hose to meet the marked position.



### D Socket outer diameter after swaging

The socket outer diameter after swaging is measured at the point of about 10 mm from the socket end. Please regularly check the finished size. If the size is not appropriate, consult us to avoid possible oil leakage or pullout of the hose.



## [Stainless steel coupling]

Hose series	Hose size	Swage coupling part No.	A Coupling deduction length (mm)	Pusher part No.	B Die part No.		C Hose insertion length (mm)	D Socket outer diameter after swaging (mm)
					First	Second		
1000 · 1100 · 1400	04	SA-PT-04-14-S	32.0	PSA-04	SPH-03	SP14-04	19	12.7±0.2
		SE-PF-04-14-S	31.0	PSE-14-04				
		SF-PF-04-14-S						
	06	SA-PT-06-14-S	33.0	PSA-06	SP3-05-1-ST	SP14-06		
		SE-PF-06-14-S	32.0	PSE-14-06				
		SF-PF-06-14-S						
1000	08	SA-PT-08-14-S	37.0	PSA-08	SPH-06-1-ST	SP14-08	24	19.5±0.2
		SE-PF-08-14-S	37.0	PSE-14-08				
		SF-PF-08-14-S						
1100	08	SA-PT-08-14-S	37.0	PSA-08	SPH-06-1-ST	SP10-08	24	19.9±0.2
		SE-PF-08-14-S	37.0	PSE-14-08				
		SF-PF-08-14-S						
3130 · 34PW	02	SSA-PT-02-S	26.0	PSA-02	SP3-02-001	—	12	9.2±0.2
		SSE-PF-02-S	30.0	PSE-02-001				
		SSF-PF-02-S						
N3130 · 3700 3130 · 3000	03	SA-PT-03-S	32.0	PSA-04	SP3-03-1-ST	SP3-03	24	12.4±0.2
		SE-PF-03-S	33.0	PSE-03				
N3130 · 3700	04	SA-PT-04-S	33.0	PSA-04	SP3-04-1-ST	KM-04	28	14.0±0.2
		SE-PF-04-S	36.0	PSE-04				
		SF-PF-04-S						
3130 · 3000 · 34PW	04	SA-PT-04-S	33.0	PSA-04	SP3-04-1-ST	SP3-04	28	14.4±0.2
		SE-PF-04-S	36.0	PSE-04				
		SF-PF-04-S						
N3130 · 3700 3130 · 3000 · 34PW	06	SA-PT-06-S	35.0	PSA-06	SP3-06-1-ST	SP3-06	33	17.6±0.2
		SE-PF-06-S	39.0	PSE-06				
		SF-PF-06-S						
	08	SA-PT-08-S	39.0	PSA-08	SP3-08-1-ST	SP3-08		
		SE-PF-08-S	44.0	PSE-08				
		SF-PF-08-S						
N3130 · 3700 3130 · 3000	12	SA-PT-12-S	43.0	PSA-12	SP3-12-1-ST	SP3-12	40	28.1±0.2
		SE-PF-12-S	47.0	PSE-12				
		SF-PF-12-S						
	16	SA-PT-16-S	48.0	PSA-16	SP3-16-1-ST	SP3-16		
		SE-PF-16-S	53.0	PSE-16				
		SF-PF-16-S						

Hose series	Hose size	Swage coupling part No.	A		B		C	D
			Coupling deduction length (mm)	Pusher part No.	Die part No.			
					First	Second	Hose insertion length (mm)	Socket outer diameter after swaging (mm)
N3000 · HT	04	SA-PT-04-S	33	PSA-04	SP3-04-1-ST	SPN-04	28	14.6±0.2
		SE-PF-04-S	35	PSE-04				
	06	SA-PT-06-N30-S	34	PSA-06	SPH-06-1-ST	SPN-06	33	18.9±0.2
		SE-PF-06-N30-S	38	PSE-06				
	08	SA-PT-08-N30-S	39	PSA-08	SPH-08-1-ST	SPN-08	37	22.7±0.2
		SE-PF-08-N30-S	43	PSE-08				
3R80	04	SA-PT-04-3R-S	33	PSA-04	SPH-04-1-ST	SPH-04	28	17.2±0.2
		SE-PF-04-3R-S	35	PSE-04				
	06	SA-PT-06-N30-S	34	PSA-06	SPH-06-1-ST	SPH-06	33	20.1±0.2
		SE-PF-06-N30-S	38	PSE-06				
	08	SA-PT-08-N30-S	39	PSA-08	SPH-08-1-ST	SPH-08	37	23.0±0.2
		SE-PF-08-N30-S	43	PSE-08				
3R80 · 34PW	12	SE-PF-12-3R-S	47	PSE-12	SPH-12-1-ST	SPH-12	40	29.5±0.2
	16	SE-PF-16-3R-S	53	PSE-16	SPH-16-1-ST	SPH-16	52	37.8±0.2
34PW	04	SE-G-04-PW	36	PSE-04	SP3-04-VC	—	28	14.4±0.2
	06	SE-G-06-PW	39	PSE-06	SP3-06-VC	—	33	17.6±0.2
	08	SE-G-08-PW	44	PSE-08	SP3-08-VC	—	37	21.5±0.2
	12	SE-G-12-PW	47	PSE-12	SPH-12-1-ST	SPH-12-VC	40	29.5±0.2
	16	SE-G-16-PW	53	PSE-16	SPH-16-1-ST	SPH-16-37VC	52	37.0±0.2
	04	SE-G-04-PWL	31	PSE-04-PWL	SPP-04-VC	—	11	14.7±0.2
	06	SE-G-06-PWL	32	PSE-06-PWL	SPP-06-VC	—	11	18.0±0.2
	08	SE-G-08-PWL	39	PSE-08-PWL	SPP-08-VC	—	14	21.8±0.2
	12	SE-G-12-PWL	42	PSE-12-PWL	SPP-12-VC	—	21	29.6±0.2
	16	SE-G-16-PWL	45	PSE-16-PWL	SPP-16-VC	—	29	37.2±0.2

Hydraulic Hose

Airless-painting Hose

Clean Hose

Adapter

Hose Guard Parts, Specially-Treated Parts

Assembling Machine, Jig, Tool

Hose Assembling Method

Technical Document

Reference Document