

COMPANY PROFILE



Management Policy

“One for All, and All for One”

COCOMECH respects the long established Collaboration Spirit, and aims to be an enterprise with the significance of existence which is appreciated by the employees, customers and local communities.

1. Growth and Healthy Management of the company

No Future without Growth. We aim for the compatibility of Growth and Health (Soundness).

We work through Bigger share, Product development, Technical innovation, and Global evolution recognizing the corporate environment.

2. Providing Products consistent with the Era

We inject management resources for offering and growing "Only-One Product" with considering changes of market and user's intention.

3. Compliance with Agreements and Promises

We aim for the trustful company with implementing faithfully the Agreements and Promises.

We observe the Rules, Standards, Directions and Plans.

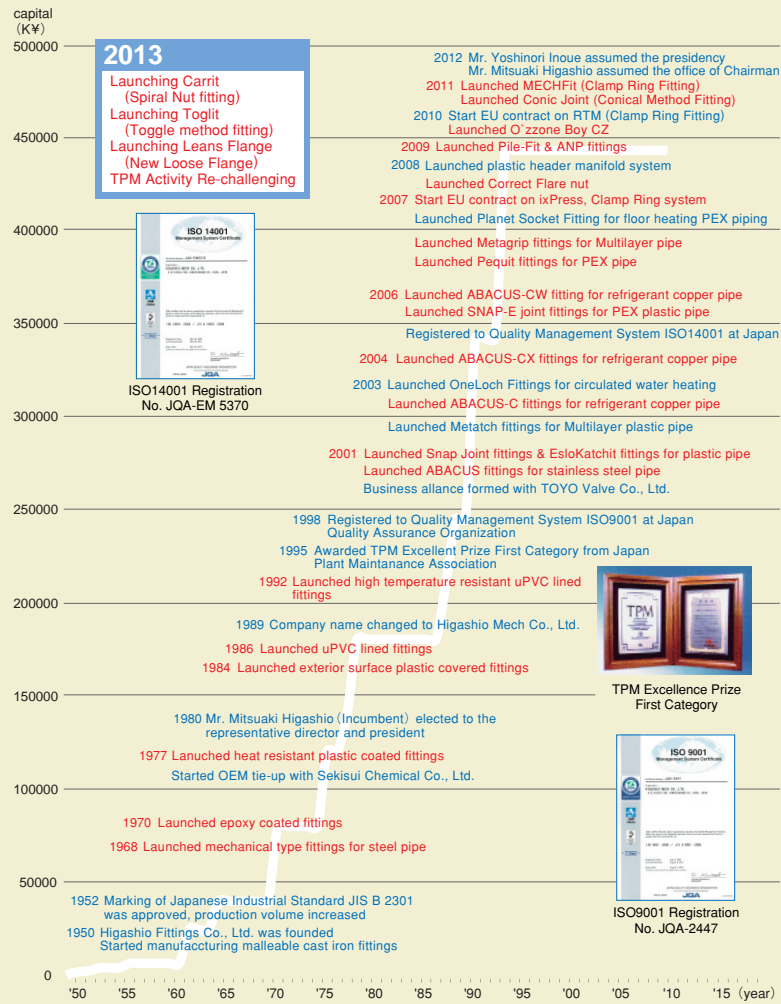
We construct and uphold the structure to secure the Quality and Due date.

4. Management with Humanity

We provide Safety work, Allocation of achievement, Management information and Education opportunity to the employees.

We request activities that are conducive to increase the sales, Securing profit, Technology accumulation, and Personal growth to the employees.

History



Outline

Company Name **HIGASHIO MECH CO.,LTD./COCOMECH**

Trade Mark

Address 8-22 Kikusuicho, Kawachinagano 586-0012
 Osaka, Japan
 Tel: +81 (0)721 53 2221 Fax: +81 (0)721 53 2279

Established March-1950

Employee 170

Capital 4.6 million US\$ (Capital reserve 3.6 million)

Annual Sales 70 million US\$ (2012 Turnover)

Industrial Property Rights

	Applied	Published
Patent	Japan 98, Overseas 40	6
Utility Model	189	15
Mark	5	4
Design	33	1
Overseas Application	10	7

Main Products

- Malleable Cast Iron Pipe Fittings
Black, White, Coat, Rust-Proof Lined fittings
- Plastic (Crosslinked PE, PB) Pipe Fittings
Katchit fittings, Snap Joint fittings
Clamp Ring Fittings
- Light Gauge Stainless Steel Pipe Fittings
ABACUS fittings
- Refrigerant Copper Pipe Fittings
O'zzone Boy CZ
- Plastic Multi-Layer Pipe Fittings
Metatchi fittings
- C.C.Box Cable Duct Steel Pipe Fittings
EasyTreat (S type, W type)
- Plastic (Crosslinked PE, Multilayer) Pipe Fittings
MECHFit, Carrit, Toglit
- Ground Foundation Improvement System Fittings
PILE-FIT

US\$1.00=JP¥95.00-

Information in this document is subject to change without notice.

COCOMECH

HIGASHIO MECH CO., LTD.

<http://www.mech.co.jp/>

<http://www.youtube.com/watch?v=07rI3lyu41Y>

HO.16-04.A

Cocoon Brand:
One Push Press Fitting

MECHFit

Patented

New Generation!

"MECHFit" is the new name for "ixPress"



The innovative system for plastic piping application.

- ★One Push Press, No tool required.
- ★Less Labor and thus improve productivity with cost savings
- ★Eco Fitting with long term warranty

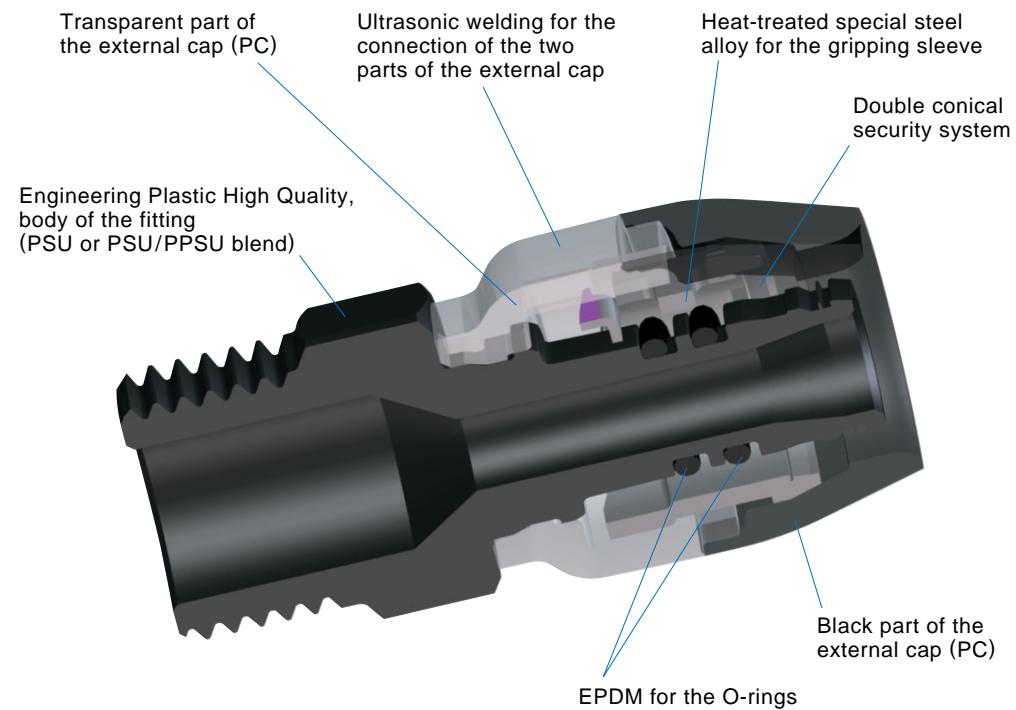


COCOMECH

Made in Japan

Vol.4

The "MECHFit" system uses the best combination of new generation of metal and plastic materials:



New generation!

We introduce the new "MECHFit" fitting, the only press-fitting without tools, more reliable than traditional press-fittings, that is compatible with Multilayer and PEX pipes.

"MECHFit" connects tightly with both PEX/AL/PEX pipes, without typical problems associated with fitting systems that require tools.

The new "MECHFit" fitting gives 25 years guarantee and the snap-on solution makes connection incredibly fast without any tool!

An astonishingly simple and reliable solution than traditional press-fittings.



CLAMP RING METHOD pat.

Simple and Reliable!

Can you believe in such an apparently simple fitting system that requires neither tool nor elaborate training for the installers?

Yes you would. The system is so simple enough that any person could operate the installation.

High Productivity!

This apparent simplicity is an engineering innovation by COCOMECH, working with the most stringent Japanese customers looking for quality solution.

We are encouraged by the success of these fittings in the Japanese market where customers want leak-free, tight union and pipe fittings. Till date, more than 50 million fittings have been sold.

The new "MECHFit" is an evolution of tool-free fittings used in Japan for many years, made by COCOMECH under thorough research and engineering innovation.

The large offerings from the new "MECHFit" fitting system for use in all kinds of sanitary, heating and chill water (FCU system) installations give you best opportunity for cost down and improvement of productivity.

How the "MECHFit" Works?

The exclusive technology of the "MECHFit" is based on its clamp ring feature, that grips the pipe, making it the only press fitting without tools.

The patented "MECHFit" clamp ring is made from a heat-treated special spring steel. This unrivaled patented technology comes from the Japanese automobile industry.

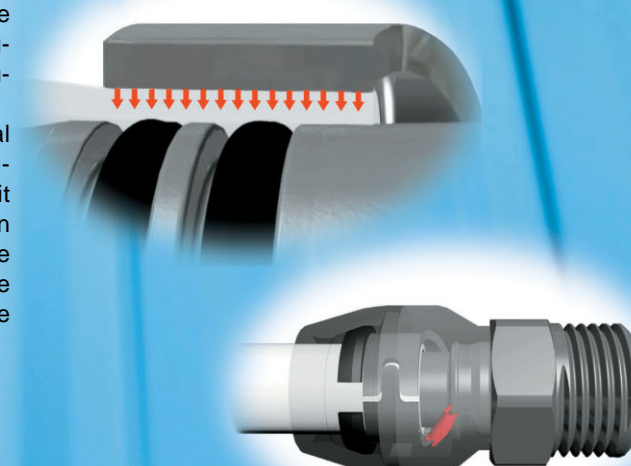
After inserting the pipe into the fitting, the small red Jumping Pin pushed out from the ring and the clamp ring starts compressing the pipe from the outside, absorbing the dimensional changes that occur in the pipe.

One Push, No tool required.



The key feature of the "MECHFit" clamp ring is that its spring effect guarantees a long-term water tightness connection. For the constant pressing force applying to the pipe, any possible fluctuation in the pipe dimension could be absorbed. All the other tool-free fittings, like the push-fit types, are called old generation and they are struggling how to absorb the dimensional fluctuation of the pipe.

Actually the pipes never have the nominal dimensions, either because of the manufacturing tolerance, the standards permit tolerance in the external diameter and in the wall thickness of the pipe, or because of the dimensional changes that the pipe suffers when functioning connected to the fitting, the well-known creep effect.



MECHFit Product Introduction

Plastic Model

New	Size	pcs/BOX
16	16	108
20	20	72
25	25	32
32	32	20

New	Size	pcs/BOX
16	16	64
20	20	40
25	25	24
32	32	10
2016	20×16×16	56
2012	20×16×20	44
2020	20×20×16	44
2516	25×16×25	34
2520	25×20×20	30
2522	25×20×25	32
3220	32×20×32	14
3225	32×25×25	12
3223	32×25×32	10

New	Size	pcs/BOX
1604	16×1/2	114
2004	20×1/2	102
2506	25×3/4	48

New	Size	pcs/BOX
16	16	136
20	20	70
25	25	48
32	32	30
2016	20×16	70
2516	25×16	48
2520	25×20	48
3225	32×25	30

New	Size	pcs/BOX
1604	16×1/2	192
2004	20×1/2	112
2006	20×3/4	112
2506	25×3/4	48

New	Size	pcs/BOX
1604	16×1/2	68
2004	20×1/2	68

New	Size	pcs/BOX
1604	16×1/2	114
2004	20×1/2	102
2506	25×3/4	48

New	Size	pcs/BOX
1604	16×1/2	108

New	Size	pcs/BOX
2506	25×3/4	40

New	Size	pcs/BOX
*15	16×1/2	64
*30	16×1/2	48

New	Size	pcs/BOX
1604	16×1/2	120
2004	20×1/2	120
2506	25×3/4	76

Brass Model(●) / DZR Model(○)

New	Size	pcs/BOX
1604	16×1/2	68
2004	20×1/2	68
2006	20×3/4	68

New	Size	pcs/BOX
1604	16×1/2	114
2004	20×1/2	102
2006	20×3/4	68
*2504	25×1/2	48
2506	25×3/4	48
2510	25×1	60
3204	32×1/2	30
3210	32×1	28

New	Size	pcs/BOX
16	16×CU15	40

New	Size	pcs/BOX
1604	16×1/2	108
2004	20×1/2	84
2006	20×3/4	84
2506	25×3/4	40

New	Size	pcs/BOX
3204	32×1/2	28

New	Size	pcs/BOX
3232	32×32×25	12
2525	25×25×20	30

New	Size	pcs/BOX
1604	16×1/2	120
2004	20×1/2	120
2006	20×3/4	120
*2504	25×1/2	96
2506	25×3/4	76
2510	25×1	70
3210	32×1	30

New	Size	pcs/BOX
1604	16×1/2	60
2004	20×1/2	44
2006	20×3/4	44
*2504	25×1/2	32
*2520	25×1/2×20	32
*3225	32×1/2×25	24
*3204	32×1/2	20

New	Size	pcs/BOX
1604	16×1/2	192
2004	20×1/2	112
2006	20×3/4	112
2506	25×3/4	48
2510	25×1	48
3210	32×1	30

New	Size	pcs/BOX
*2006	20×R3/4	112
*2506	25×R3/4	48
*2510	25×R1	48
*3210	32×R1	30

New	Size	pcs/BOX
3204	32×1/2	30
3212	32×1-1/4	30

New	Size	pcs/BOX
3216	32×16	30
3220	32×20	30

New	Size	pcs/BOX
16	16	192
20	20	192

New	Branch Size	pcs/BOX
2211	20-20-16-16	12
2111	20-16-16-16	12
211	20-16-16	15
2222	20-20-20-20	12

New	Branch Size	pcs/BOX
221	20-20-16	15
211	20-16-16	18
21	20-16	24

New	Size	pcs/BOX
16	16×20×25	40
32	32×32×32	10

New	Size	pcs/BOX
*15	16 (L15)	150
*30	16 (L30)	150

New	Size	pcs/BOX
*001	001	150
*080	080	100
*150	150	90
*200	200	NA

New	Size	pcs/BOX
16	16	84
20	20	84
25	25	54
32	32	39

ADDED COCOMECH Brand pipes SYSTEM PROPOSAL of WORLD-LEADING PIPES + MOST ADVANCED FITTING



PEX pipe and PEX/AL/PEX pipe which meet the dimension and performance requirement of ISO15875 (PEX) and ISO21003 (PEX/AL/PEX) with MECHFit will make the Plumbing work extremely easy, simple and reliable!!

These pipes are now considered as the best piping material for hot and cold water supply system in the world by the following properties.

- Flexibility / Coiled-Light Weight of the pipe improve the workability in all process of the work. Delivery, Handling, and contributing to less joint which reduces the risk of troubles etc.
- Excellent Corrosion Resistance, Chlorine Resistance, Electrical Resistance, Pipe-Creep Resistance. etc.
- Coverage of wide temperature and pressure range in the use.
- Absolute harmless from any toxic or substance & promotes healthier water.

Pipe dimensional standard

Size	O.D.	I.D.	Thickness
D16	16.0	12.0	2.0
D20	20.0	16.0	2.0
D25	25.0	20.0	2.5
D32	32.0	26.0	3.0
D40	40.0	33.0	3.5

Technical Properties of Pipes

	16×2		20×2		25×2.5		32×3	
	PEX	PEX-AL-PEX	PEX	PEX-AL-PEX	PEX	PEX-AL-PEX	PEX	PEX-AL-PEX
Outside pipe diameter	mm 16		mm 20		mm 25		mm 32	
Thickness pipe	mm 2		mm 2		mm 2.5		mm 3	
Weight of 1m pipe	kg/m 0.089	kg/m 0.099	kg/m 0.115	kg/m 0.127	kg/m 0.174	kg/m 0.206	kg/m 0.275	kg/m 0.323
Internal volume of 1m pipe	l/m 0.113		l/m 0.201		l/m 0.314		l/m 0.531	
Heat conduction coefficient	Watt/m*K 0.41		Watt/m*K 0.43		Watt/m*K 0.41		Watt/m*K 0.43	
Coefficient of linear expansion	mm/m*K 0.17		mm/m*K 0.024		mm/m*K 0.17		mm/m*K 0.024	
Roughness of internal surface	μm 1.5		μm 1.5		μm 1.5		μm 1.5	
Oxygen diffusion for antioxygen barrier tubes	mg/l*d <0.1		mg/l*d <0.1		mg/l*d <0.1		mg/l*d <0.1	
Maximum punctual temperature	°C 110		°C 110		°C 110		°C 110	
Maximum operating temperature	°C 95		°C 95		°C 95		°C 95	
Minimum temperature of tube manipulation	°C -40		°C -40		°C -40		°C -40	
Minimum bending radius without internal spring	mm 160	mm 80	mm 200	mm 100	mm 250	mm 125	mm 320	mm 160
Minimum bending radius with bending tool	mm No kink	mm No kink	mm No kink	mm No kink	mm No kink	mm No kink	mm No kink	mm No kink
Gel content	% >60		% >60		% >60		% >60	

* Based on pipe manufacturer's specifications

LINEUP for Larger diameter pipes

Toglit for Over 40mm pipes

A unique combination system with MECHFit for 16-32mm pipes & Toglit for over 40mm pipe can enhance the Workability and High Productivity that directly link to TIME-SAVING and COST REDUCTION.

Expand the Coverage of piping by COCOMECH's High Quality Fittings!!



Toglit Product Introduction



New System Combination



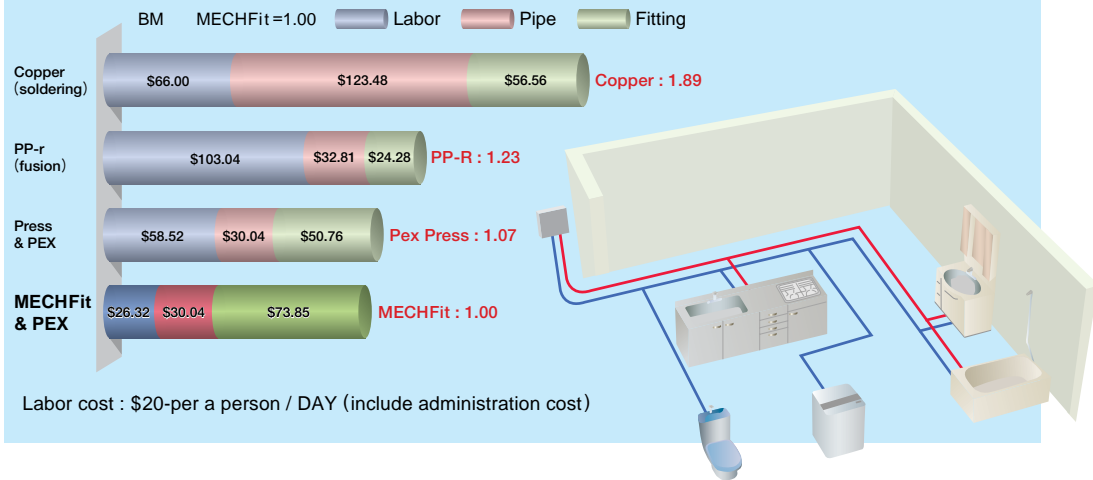
For 16 to 32mm



Over 40mm

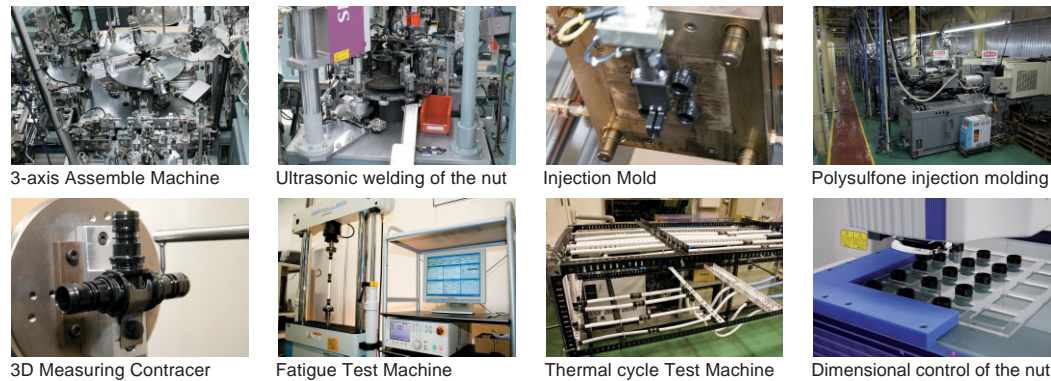
Less Labor and thus improve productivity with cost savings

How the "MECHFit" Fitting Works? (Total Cost Comparison)



WHAT REGULATIONS HAVE LED THE DESIGN AND TESTING OF THE NEW MECHFit?

The design of the new "MECHFit" has met a standard of European regulation EN 1254-Part 3a regarding the thickness to be used in the nipple and the inside diameters, so that it guarantees the minimum flow of water required by the regulations. The new "MECHFit" satisfies requirements of regulations "ISO 15875" (PEX pipes) and "ISO 21003" (PEX-AL-PEX pipes) and complies with all the required tests.



			Pressure		Temperature	Hour Cycle	Test Procedure	Judgment	Results
			Multi	PEX					
National Standard	ISO 15875 Part 5	Internal Pressure	12.5 Bar	7.58 Bar	95°C	1,000Hr	Continuous pressurized test for 1,000Hr at 95°C	No-Leakage	Pass
		Bending	33.9 Bar	20.4 Bar	20°C	1Hr Hold	Bending Radius: 5-time of ND	No-Leakage Find Burst	Pass
		Pull-Out			23 & 90°C	1Hr Hold	23°C=1.5F, 90°C=F	No-separation	Pass
	ISO 21003 Part 5	Thermal Cycle	10 Bar	8 Bar	23 & 95°C	5,000 Cycle	95°C×15Min→20°C×15Min Cycling test for 5,000 Cycle	No-Leakage	Pass
		Pressure Cycle	15 Bar & 0.5 Bar	9 Bar & 0.5 Bar	23°C	10,000 Cycle	15Bar→0.5Bar Pulse pressure 30cycle/min.	No-Leakage	Pass
		Vacuum	-0.8 Bar Vacuum	-0.8 Bar Vacuum	23°C	1Hr Hold	Vacuum -0.8Bar 1Hr hold	Within 0.05Bar	Pass
Higashio's Excessive Test	ASTM F877 F2262	Thermo-Cycle	0.69 MPa	0.69 MPa	16°C Water 82°C Water	1,000 Cycle	82°C Water Immersion:10Min. 16°C Water Immersion:3Min. (ASTM:Min 2-Minutes)	No-Leakage Find Burst	Pass
	High Temp. Pressure Cycle Test	10 Bar & 3 Bar	10 Bar & 3 Bar	95°C	1,000,000 Cycle	10Bar→3Bar Pulse pressure 30cycle/min.	No-Leakage Find Burst	Pass	
	Pull Pulsation Fatigue Cycle	Equivalent of internal pressure 3 MPa		23°C	1,000,000 Cycle	Tensile fatigue force of equivalent internal pressure 3 MPa	No-Leakage No-deformation	Pass	
	Water Pressure Test at High Temp.	Injection bursting internal water pressure		95°C	—	Increased water pressure until pipe bursting, after the specimen curing at 95°C for 8h	No pull out defect at connecting points	Pass	
	Slant Cut Pipe Insertion					Check the disposition of O-ring under the 3mm slant cut pipe	No-disposition of O-ring	Pass	
	Slant Insertion of Pipe					Check the disposition of O-ring under practical slant insertion	No-disposition of O-ring	Pass	



JOB REFERENCE Clamp Ring Method



COST & QUALITY