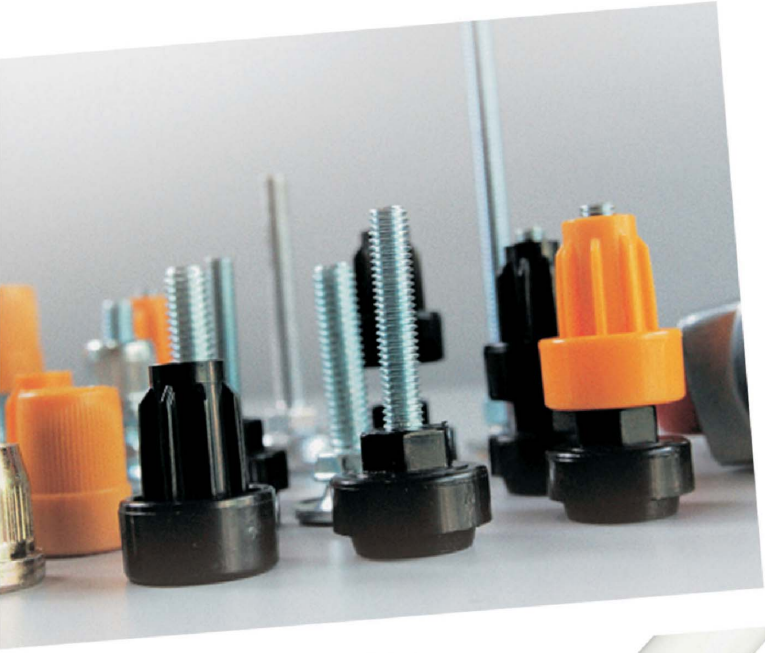
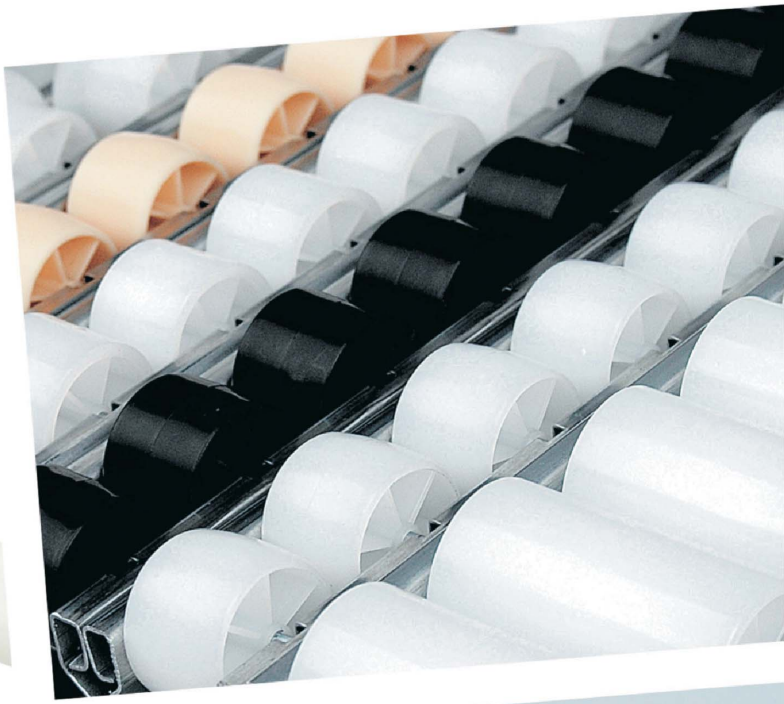
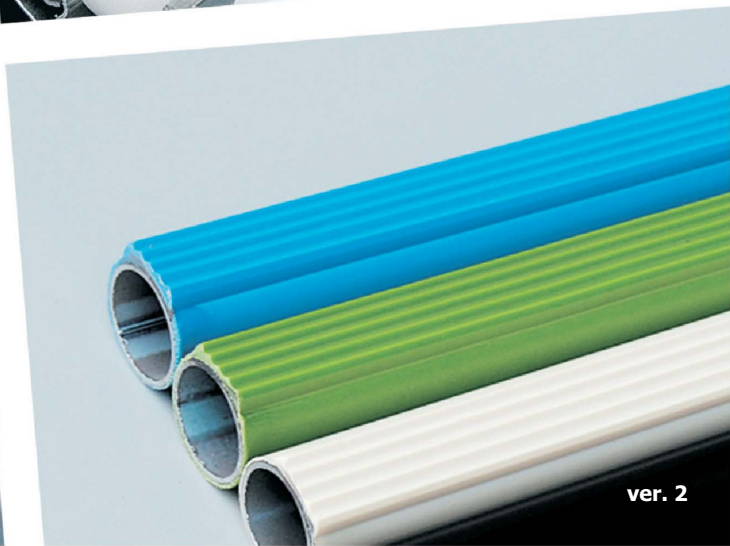
WAMECH

PJ System

System łączenia rur za pomocą złączek
Pipe and Joint connection system







ver. 2

Czym jest System PJ

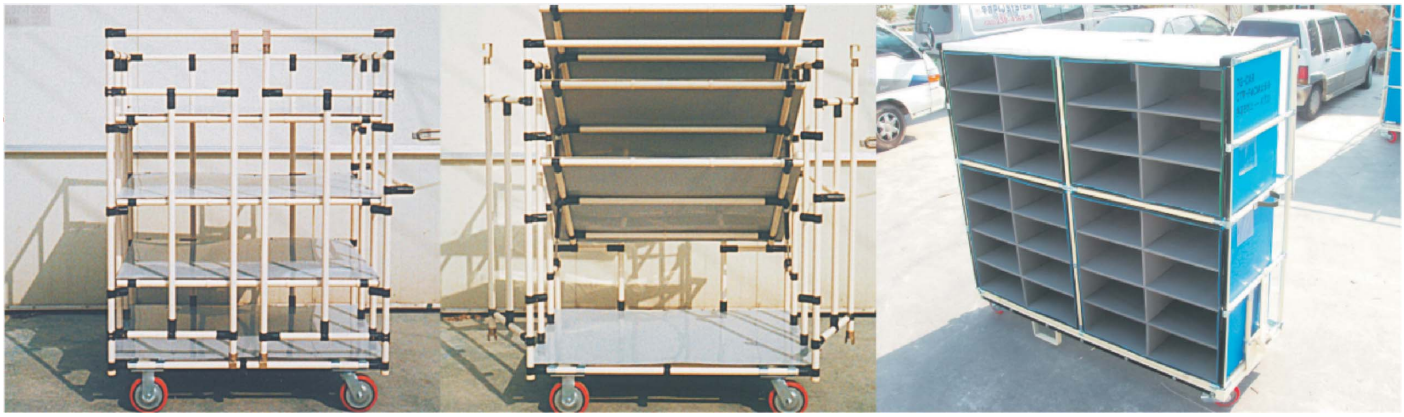
System PJ jest systemem modułowym, na który składają się rury (powlekane ABS, antystatyczne ESD oraz niklowane), złączki, listwy rolkowe, koła oraz różnego rodzaju elementy wykończeniowe.
System umożliwia szybką, łatwą oraz czystą produkcję bez posiadania dodatkowych umiejętności i specjalistycznych narzędzi do montażu, a różnorodność komponentów gwarantuje wykonanie dowolnej przestrzennej konstrukcji.

System PJ wspiera wdrażanie Lean Manufacturing.
W zakładach produkcyjnych coraz ważniejszą rolę odgrywa personalizacja narzędzi. Dotyczy to zarówno obszarów bezpośrednio produkcyjnych, jak i logistyki. Od elastyczności procesu produkcyjnego zależy efektywność pracy oraz koszty ponoszone w efekcie wprowadzanych zmian. To właśnie zmiany są motorem napędowym rozwoju dlatego miejsce i narzędzia powinny być dostosowane do zmiennych warunków panujących na rynku konsumenckim.
System rurowo-złączkowy (System PJ) doskonale nadaje się do modelowania rozwiązań elastycznych. Dzięki modułowej budowie, szerokiemu wachlarzowi elementów składowych i zaangażowaniu Lean Teamów zmiany stają się czymś naturalnym i prostym.
System PJ nadaje się zarówno do budowy konstrukcji statycznych, jak i dynamicznych, czym wyróżnia się w stosunku do rozwiązań opartych o systemowe profile aluminiowe. Komponenty są tak zaprojektowane, by w czasie pracy działały sprężyście i nie ulegały rozkręcaniu się.
Stosowanie Systemu PJ nie wyklucza również możliwości korzystania z systemów alternatywnych. Odpowiednio zaprojektowane łączniki pozwolą na użycie kilku systemów równocześnie.
Niewątpliwym atutem budowania konstrukcji w oparciu o systemy rurowo-złączkowe jest prostota montażu. Za pomocą jednego klucza, możemy zmienić rozstaw podpór, wysokość i szerokość konstrukcji oraz wiele innych, tworząc produkt personalizowany, czyli taki jaki spełni aktualne potrzeby.

What is the PJ System

PJ system is a module-based system comprised of pipes (ABS coated pipes, ESD antistatic pipes, and nickel-coated pipes), joints, castors and various finish elements.
The system enables fast, easy and clean production without any additional skills or specialist assembly tools, while the wide variety of components helps to create practically any structure.

PJ System supports implementation of Lean Manufacturing
Personalisation of tools is becoming more and more important in production plants. This is the case both with manufacturing as well as with logistics. The flexibility of a manufacturing process directly affects the performance and costs of implemented changes. Changes are the driving force of the development, therefore the site and the tools need to be easily adaptable to volatility of consumer market conditions.
Pipe & Joint System (PJ System) is perfect for modelling flexible solutions. Due to its module-based structure, wide variety of components and involvement of Lean Teams, changes become a natural and simple process.
Unlike alu profile system, PJ System is suitable for the construction of both static and dynamic structures. Components are designed in a manner that ensures their elasticity and prevents disconnecting of elements during operation.
The use of PJ System does not exclude concurrent use of alternative systems. Specially designed joints enable the use of several systems at a time.
A true advantage offered by pipe and joint system is the simplicity of assembling process. With just one tool you can change the spacing between support points, the height and width of the whole structure and many other parameters, thus creating a personalised structure - the structure that satisfies the current needs.



Rurki ⌀28mm Pipes ⌀28mm

RG28 - Rura stalowa, pokryta powłoką ABS, posiada wysoką trwałość, odporność chemiczną, odporność na uderzenia. Jest lekka i solidna.

RG28 - Steel pipe, ABS coated, offering high durability, chemical resistance and impact resistance. Light and robust.

RN28 - Rura stalowa z powłoką chromoniklową. Jest w 100 % surowcem odnawialnym, odporna na tłuszcze.

RN28 - Chrome and nickel coated steel pipe. 100% renewable. Grease resistant. .

RE28 - Rura stalowa z powłoką antystatyczą, zapobiegającą gromadzeniu ładunków elektrostatycznych. Rozwiązanie szczególnie polecane przy produkcji podzespołów elektronicznych.

RE28 - Steel pipe with antistatic coating to prevent electrifying of material. The solution recommended for electronic components.

RS28 - Rura stalowa, pokryta powłoką ABS z dodatkowym jednostronnym grzebieniem (ślizgiem), który jest elementem kontaktowym rury z pojemnikiem.

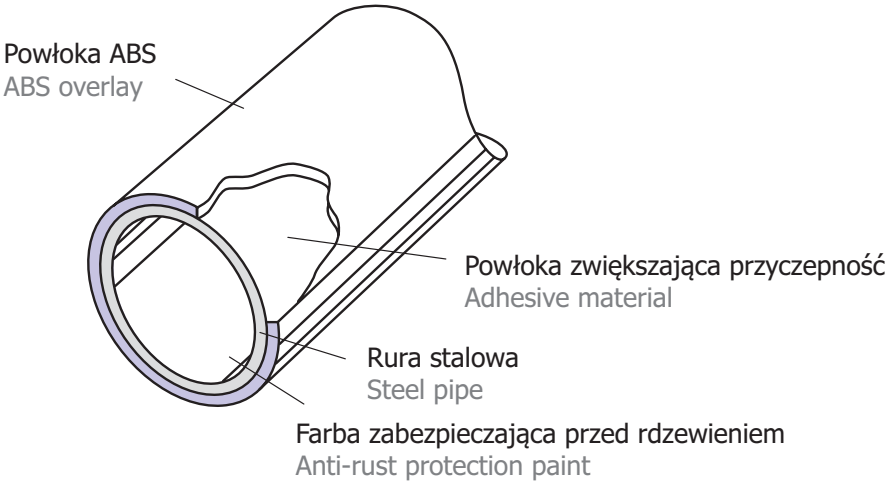
RS28 - ABS coated pipe with additional sliding one side ribbed surface to ensure stable contact element between the pipe and the container.

RG28

RN28

RE28

RS28



Symbol	Typ Type	⌀	Kolor Color	Gramatura Weight	Długość Lenght	Twardość Hardness	Rezystancja Resistance
RG28	Rura z powłoką ABS ABS coated pipe	28	kość słoniowa ivory	725 g/m	4 m	90 HV	
RN28	Rura niklowana Nickel coated pipe	28	srebrny silver	550 g/m	4 m	210 HV	
RE28	Rura ESD antystatyczna ESD antistatic pipe	28	czarny black	725 g/m	4 m	90 HV	10^5 - 10^8 Ω
RS28	Rura ślizgowa Slide pipe	28	kość słoniowa ivory	770 g/m	4 m	90 HV	

Elementy złączek Joint elements

Elementy złączek dostępne są w wersjach:
C - czarne (lakierowane proszkowo), N - niklowane, O - ocynkowane.
Przykład oznaczenia: ZC-1

Joint elements are available in the following options: C - black (powder-coated), N - nickel-coated, O – galvanized.
Example marking: ZC-1

Z-1

Z-2

Z-3

Z-4

Z-5

Z-6

Z-7

Z-8

Z-9

Z-10

Z-11

Z-12

Z-13A

Z-13B

Z-14A

Z-14B

Z-15

Z-16

Z-17

Z-18

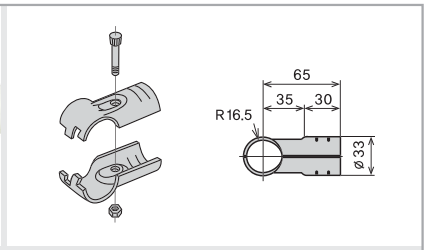
Z-21A

Z-21B

Złączki kompletne Joints

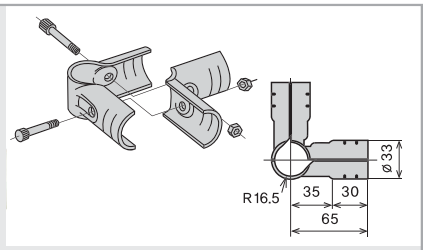
Złączki dostępne są w wersjach:
C - czarne (lakierowane proszkowo), N - niklowane, O - ocynkowane.
Przykład oznaczenia: ZKC-1

All joints are available in the following options: C - black (powder-coated), N - nickel-coated, O – galvanized.
Example marking: ZKC-1



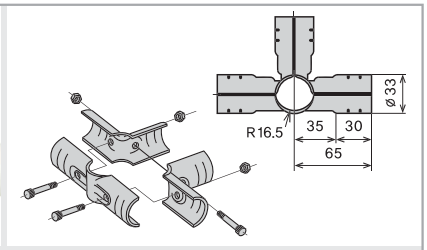
ZK-1

2 x Z-1, 1 x zestaw śrub
2 x Z-1, 1 x screw and nut set



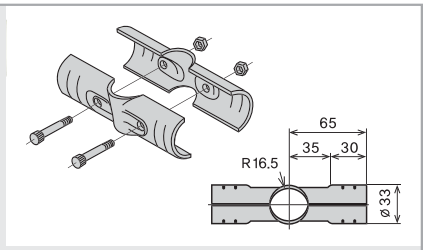
ZK-2

1 x Z-2, 1 x Z-3, 2 x zestaw śrub
1 x Z-2, 1 x Z-3, 2 x screw and nut set



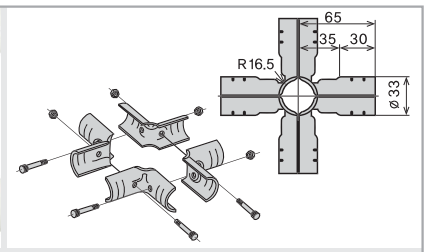
ZK-3

2 x Z-2, 1 x Z-4, 3 x zestaw śrub
2 x Z-2, 1 x Z-4, 3 x screw and nut set



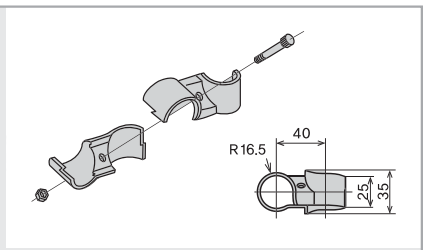
ZK-4

2 x Z-4, 2 x zestaw śrub
2 x Z-4, 2 x screw and nut set



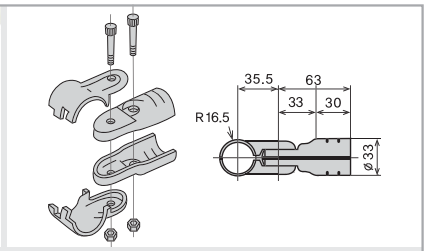
ZK-5

4 x Z-2, 4 x zestaw śrub
4 x Z-2, 4 x screw and nut set



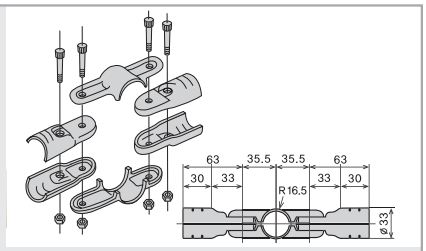
ZK-6

2 x Z-7, 1 x zestaw śrub
2 x Z-7, 1 x screw and nut set



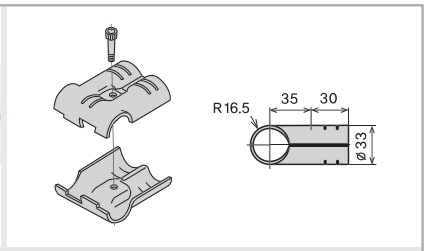
ZK-7

2 x Z-5, 2 x Z-6, 2 x zestaw śrub
2 x Z-5, 2 x Z-6, 2 x screw and nut set



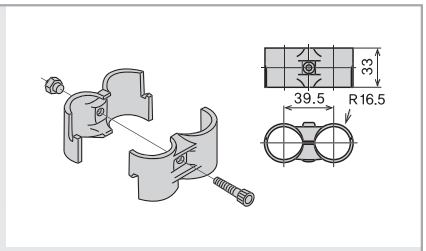
ZK-8

2 x Z-8, 4 x Z-6, 4 x zestaw śrub
2 x Z-8, 4 x Z-6, 4 x screw and nut set



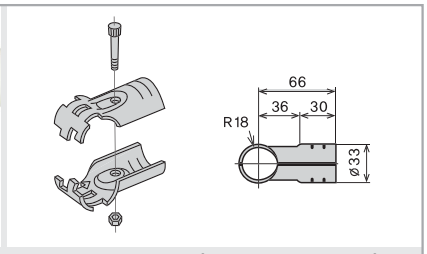
ZK-9

2 x Z-9, 1 x zestaw śrub
2 x Z-9, 1 x screw and nut set



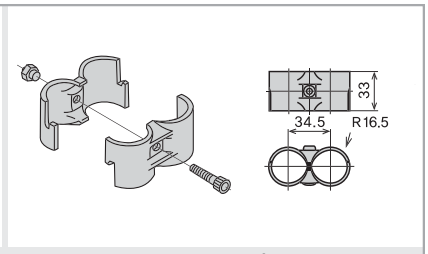
ZK-10

2 x Z-10, 1 x zestaw śrub
2 x Z-10, 1 x screw and nut set



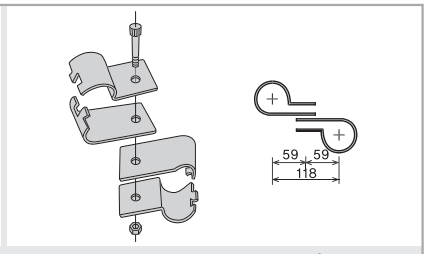
ZK-11

2 x Z-11, 1 x wkładka ślizgowa, 1 x zestaw śrub
2 x Z-11, 1 x sliding bush, 1 x screw and nut set



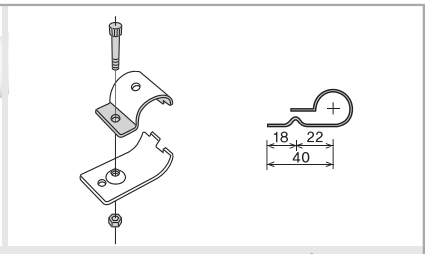
ZK-12

2 x Z-12, 1 x zestaw śrub
2 x Z-12, 1 x screw and nut set



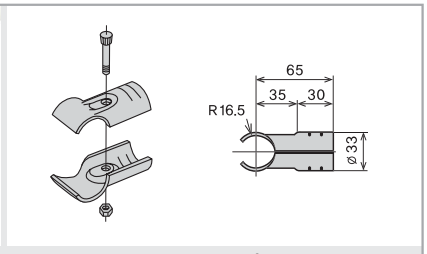
ZK-13

2 x Z-13a, 2 x Z-13b, 1 x zestaw śrub
2 x Z-13a, 2 x Z-13b, 1 x screw and nut set



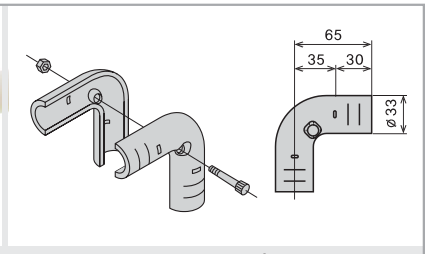
ZK-14

1 x Z-14a, 1x Z-14b, 1 x zestaw śrub
1 x Z-14a, 1x Z-14b, 1 x screw and nut set



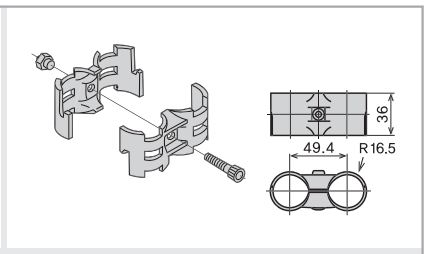
ZK-15

2 x Z-15, 1 x zestaw śrub
2 x Z-15, 1 x screw and nut set



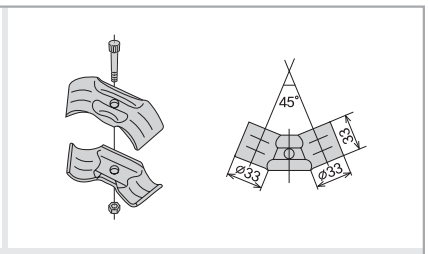
ZK-16

2 x Z-16, 1 x zestaw śrub
2 x Z-16, 1 x screw and nut set



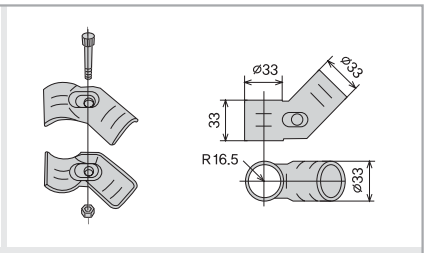
ZK-17

2 x Z-17, 2 x wkładka ślizgowa, 1 x zestaw śrub
2 x Z-17, 2 x sliding bush, 1 x screw and nut set



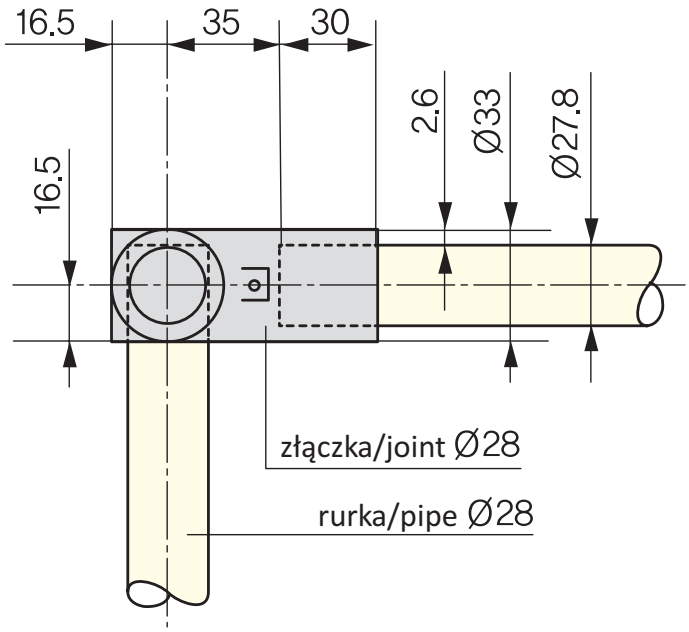
ZK-18

2 x Z-18, 1 x zestaw śrub
2 x Z-18, 1 x screw and nut set



ZK-21

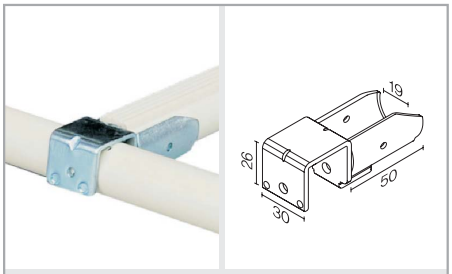
1 x Z-21a, 1x Z-21b, 1 x zestaw śrub
1 x Z-21a, 1x Z-21b, 1 x screw and nut set



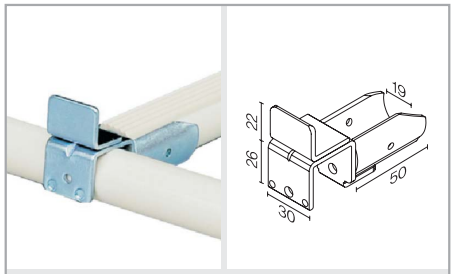
Mocowania rurek Pipe fixing

Mocowania rurek dostępne są w wersjach: N - niklowane, O - ocynkowane.
Przykład oznaczenia: MRO-1

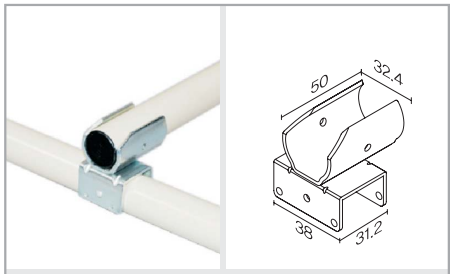
Pipe fixing elements are available in the following options: N - nickel-coated, O – galvanized.
Example marking: MRO-1



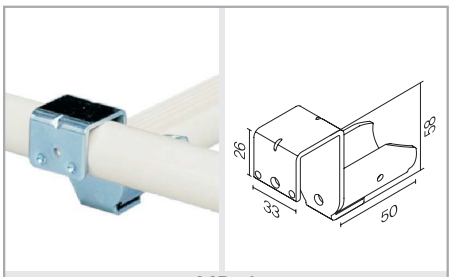
MR-1



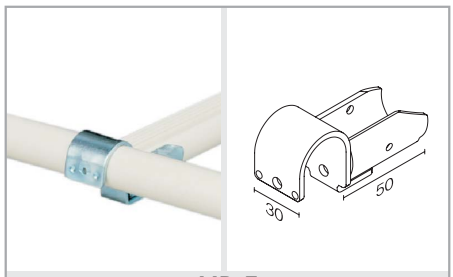
MR-2



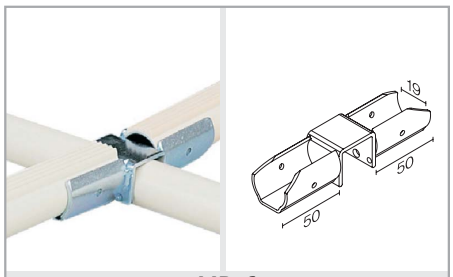
MR-3



MR-4



MR-5

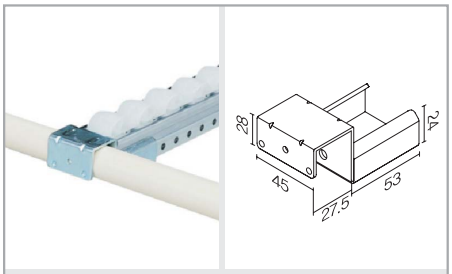


MR-6

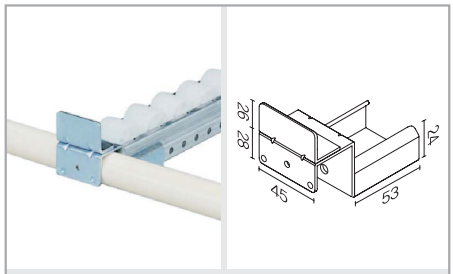
Mocowania listew Skate wheel conveyor fixing

Mocowania listew dostępne są w wersjach: N - niklowane, O - ocynkowane.
Przykład oznaczenia: MLO-1

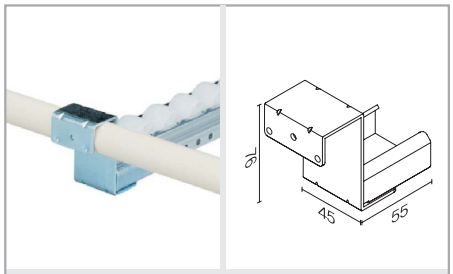
Skate wheel conveyor fixing elements are available in the following options: N - nickel-coated, O – galvanized.
Example marking: MLO-1



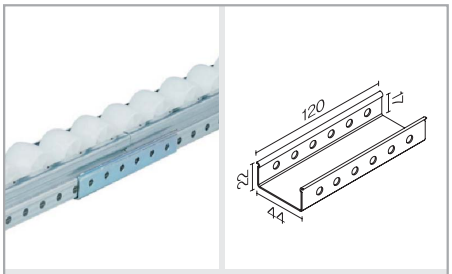
ML-1



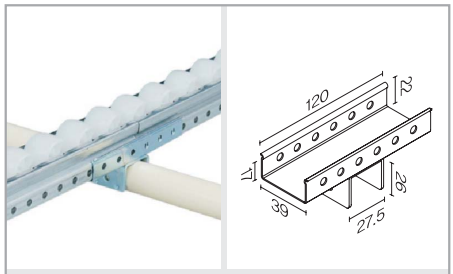
ML-2



ML-3



ML-4



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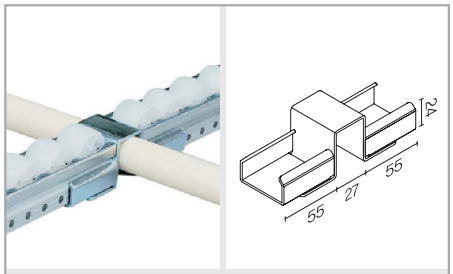

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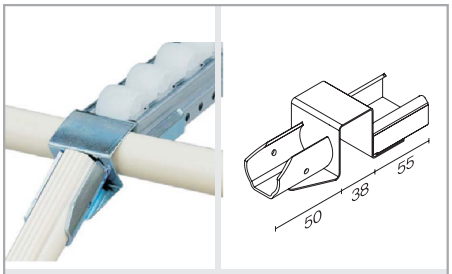

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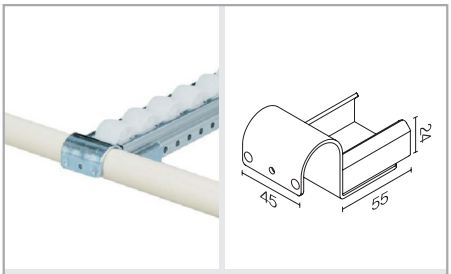

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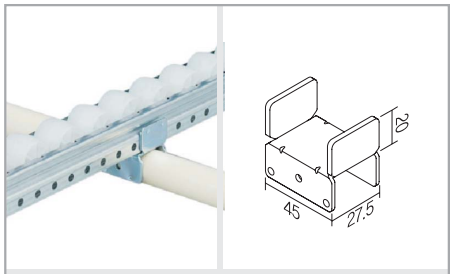

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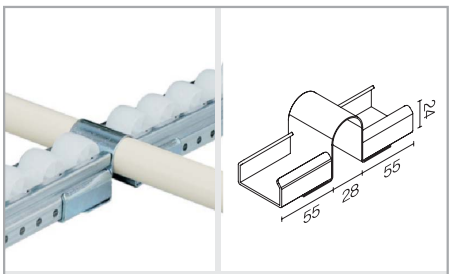

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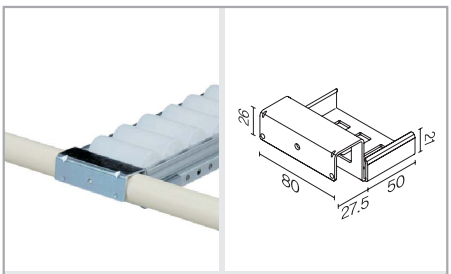

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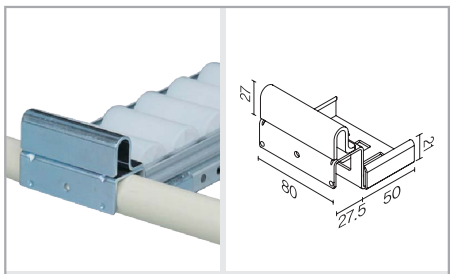

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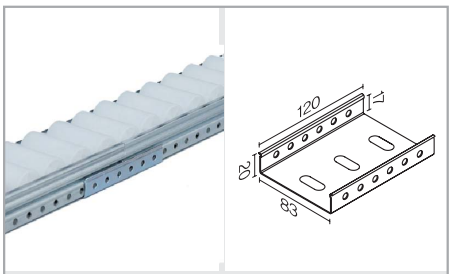

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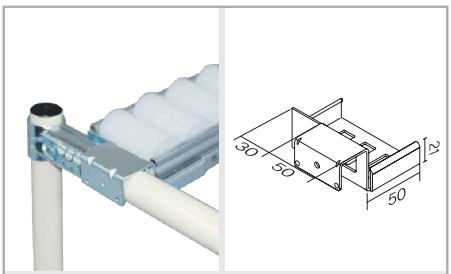

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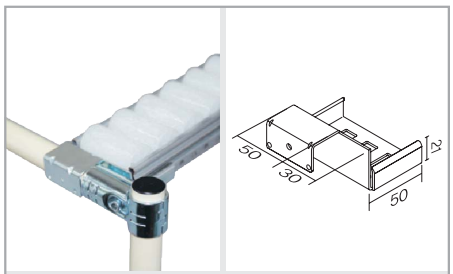

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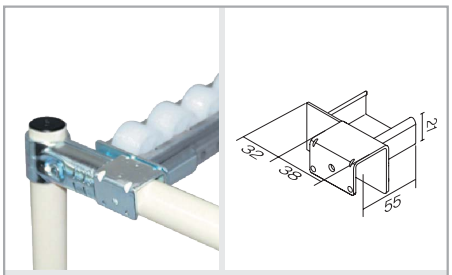

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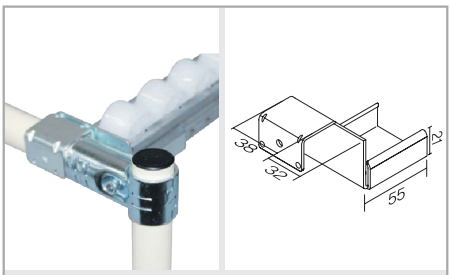

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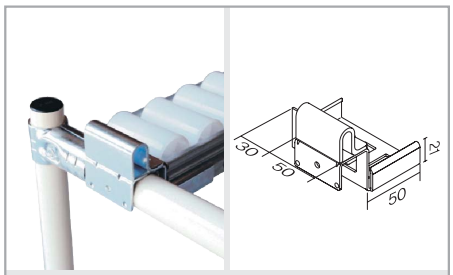

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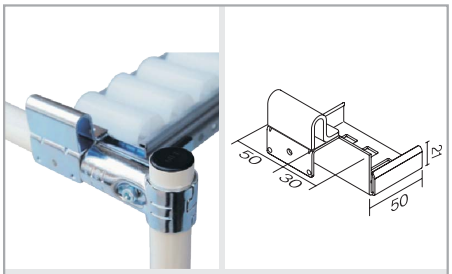

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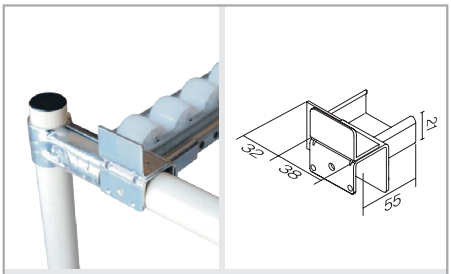

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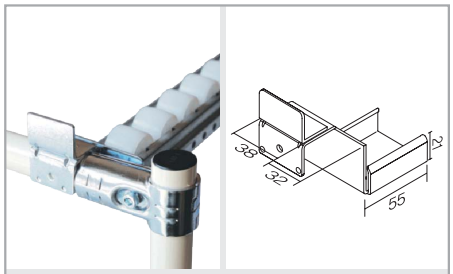


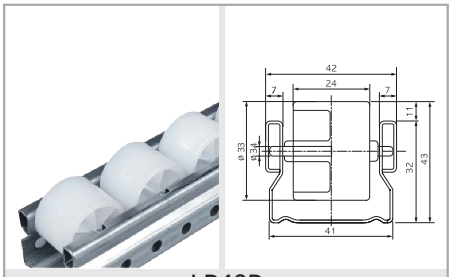
ML-23

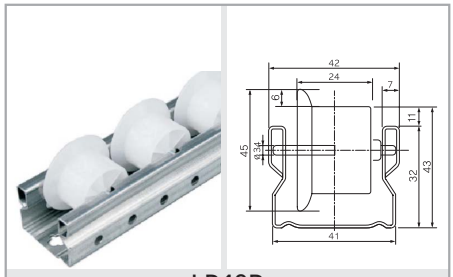
Listwy rolkowe Skate wheel conveyor

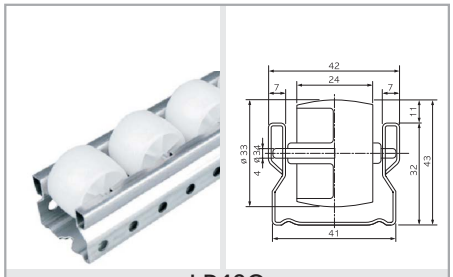
Listwy rolkowe wykonane są z blachy stalowej ocynkowanej o grubości 1 mm.
Rolki zamocowane na osi stalowej o średnicy 3mm.

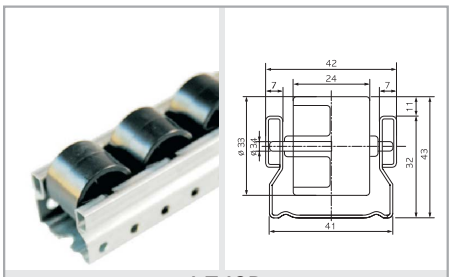
Skate wheel conveyors are made of 1 mm thick galvanised steel plate.
Wheels are fixed on a steel axis, 3 mm in diameter.

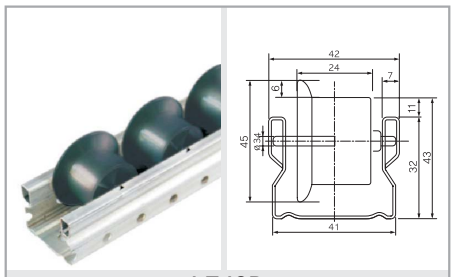
Typ listwy Skate wheel conveyor type	Materiał rolek Wheel material	Szerokość rolki Wheel width	Nośność statyczna rolki Static load capacity per wheel	Nośność / 1000 mm listwy Static load capacity per 1000 mm
LP40P, LP40R, LP40O LE40P, LEP40, LP40M	rolki PE, ESD PE, ESD wheel	40 mm	73 kg	245 kg
LP80P, LP80M	rolki PE PE wheel	80 mm	73 kg	245 kg


LP40P


LP40R


LP40O


LE40P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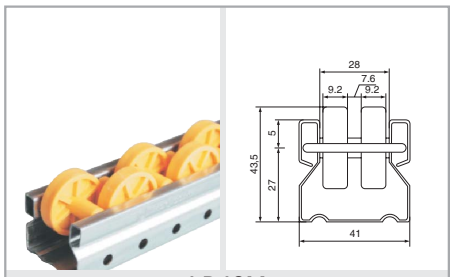
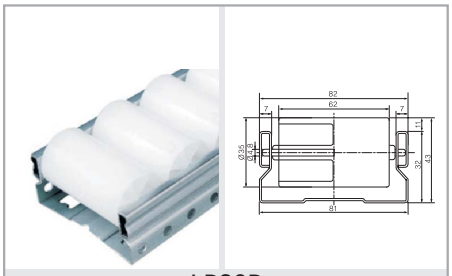
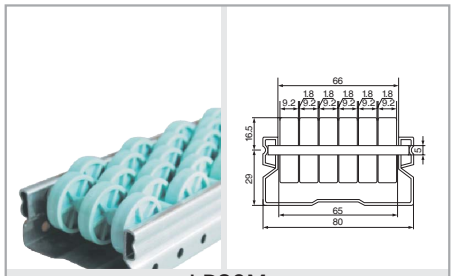
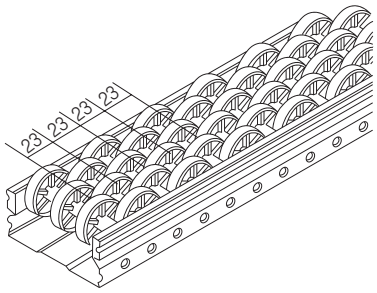
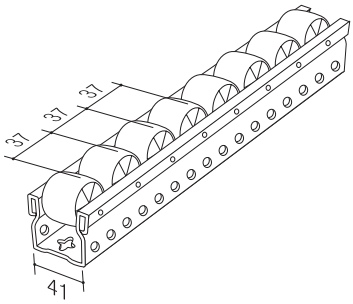
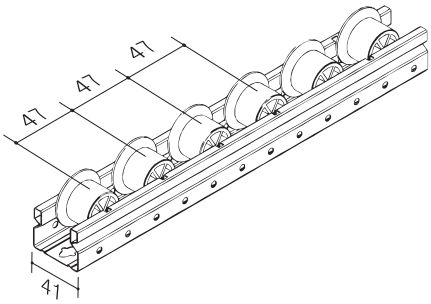

LP40M

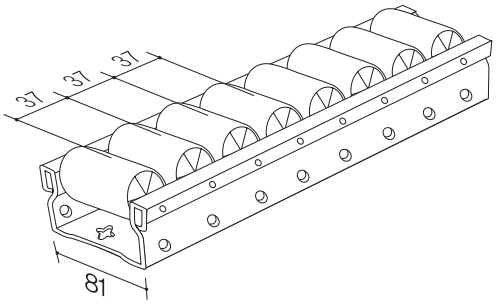

LP80P


LP80M









Koła Castors

Koła o średnicy 100 mm w zabudowie z blachy stalowej ocynkowanej. Płytka mocująca 105x85 mm, rozstaw otworów 80x60 mm, wysokość zabudowy 128 mm, nośność 150 kg. Więcej informacji na stronie **www.kola.pl**

Wheels, 100 mm in diameter, in galvanised steel plate casings. Fixing plate 105x85 mm, hole centres 80x60 mm, casing height 128 mm, load capacity 150 kg. More information: www.kola.pl

150-100-UAR

Felga koła z poliamidu, bieżnia z poliuretanu, łożysko koła rolkowe.

Wheel centre - polyamide, tread - polyurethane, roller bearing.

150-100-UAR-STS-P62 - zestaw skrętny / swivel castor
150-100-UAR-TTS-P62 - zestaw hamowany / brake castor
150-100-UAR-FTS-P62 - zestaw stały / fixed castor

150-100-UFR

Felga koła z poliamidu, bieżnia z gumy niebrudzącej, łożysko koła rolkowe.

Wheel centre - polyamide, tread - non-marking rubber, roller bearing.

150-100-UFR-STS-P62 - zestaw skrętny / swivel castor
150-100-UFR-TTS-P62 - zestaw hamowany / brake castor
150-100-UFR-FTS-P62 - zestaw stały / fixed castor

150-100-UOO

Felga koła z poliamidu, bieżnia z poliamidu, łożysko koła ślizgowe.

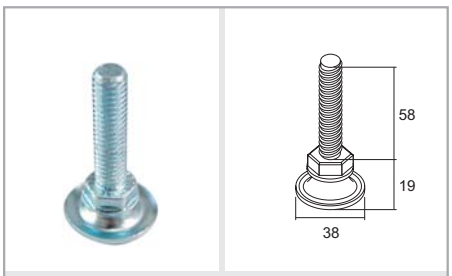
Wheel centre - polyamide, tread - polyamid, plain bearing.

150-100-UOO-STS-P62 - zestaw skrętny / swivel castor
150-100-UOO-TTS-P62 - zestaw hamowany / brake castor
150-100-UOO-FTS-P62 - zestaw stały / fixed castor

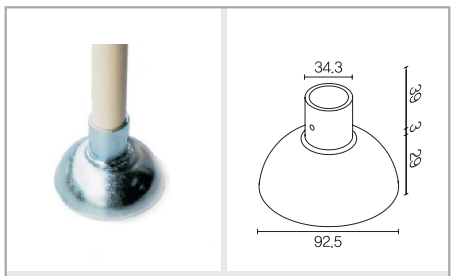
Stopy Adjustable foot

Stopy stałe i stopy z możliwością regulacji wykonane są z blachy stalowej ocynkowanej
Przykład oznaczenia: SO-1

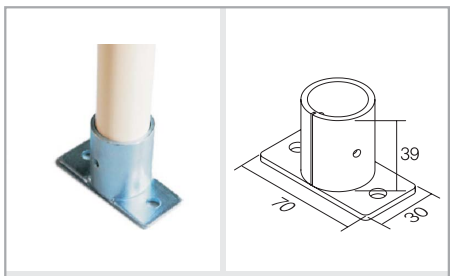
Feet and adjustable feet made of galvanised steel plate.
Example marking: SO-1



SO-1



SO-2

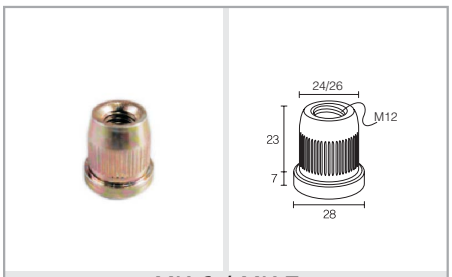


SO-3

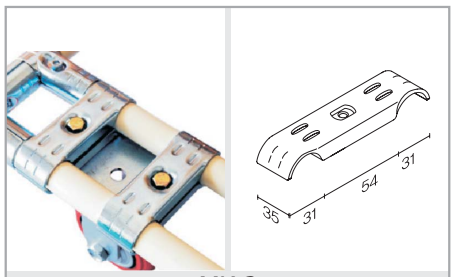
Mocowania kół i stóp Castors and foot fixing

Mocowania kół i stóp dostępne są w wersjach: N - niklowane, O - ocynkowane.
Przykład oznaczenia: MKO-1

Wheel and foot fixing elements are available in the following options: N - nickel-coated, O – galvanized.
Example marking: MKO-1



MK-6 / MK-7



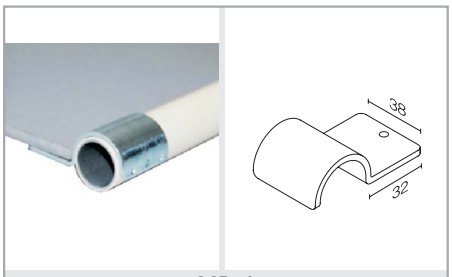
MK-3

MK-5

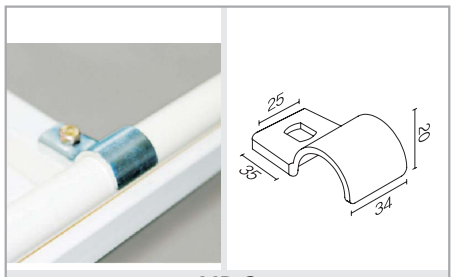
Mocowania płyty Plate fixing

Mocowania płyty dostępne są w wersjach: N - niklowane, O - ocynkowane.
Przykład oznaczenia: MPO-1

Plate fixing elements are available in the following options: N - nickel-coated, O – galvanized.
Example marking: MPO-1



MP-1



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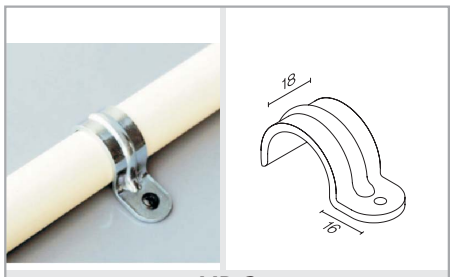
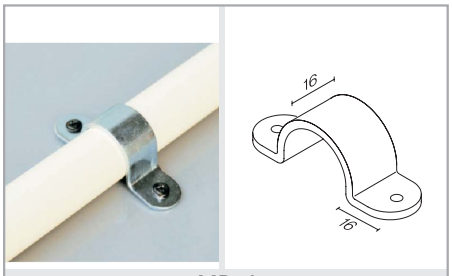


MP-3



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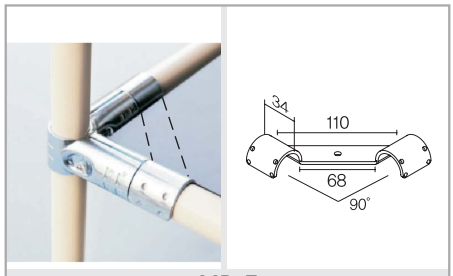

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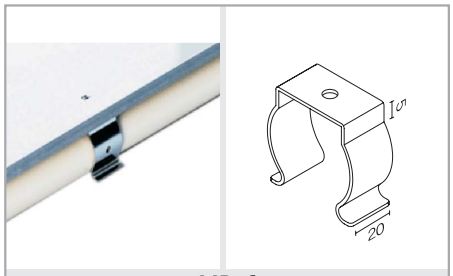

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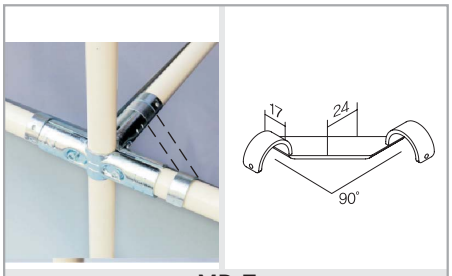
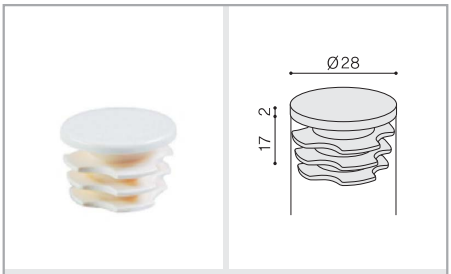


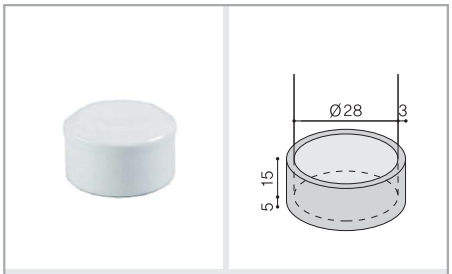
MP-7

Elementy wykończeniowe

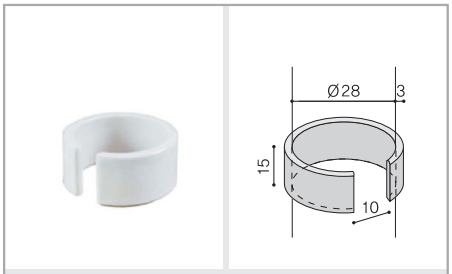
Finish elements



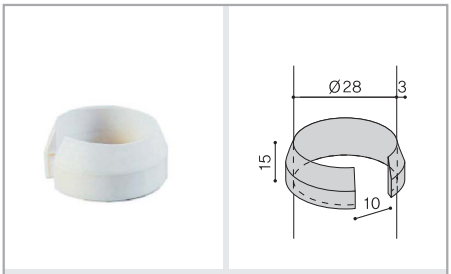
EW-1



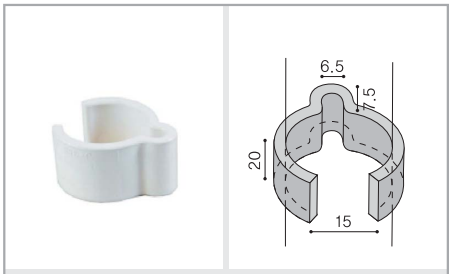
EW-2



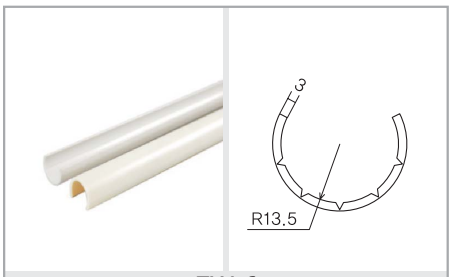
EW-3



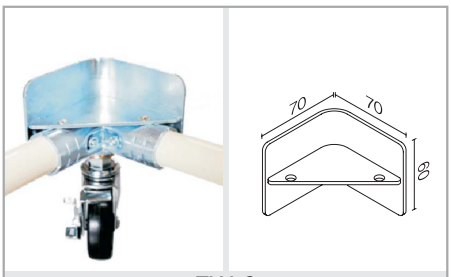
EW-4



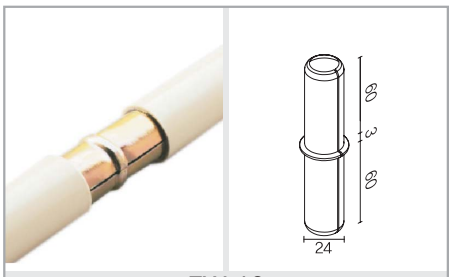
EW-5



EW-6



EW-9



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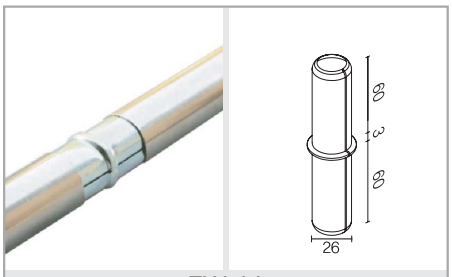

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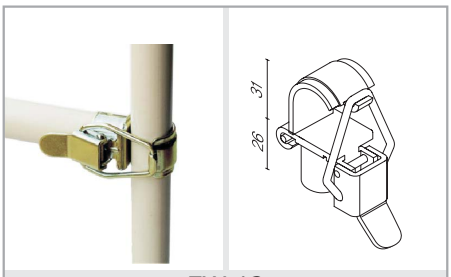

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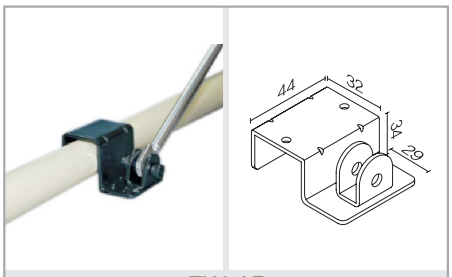

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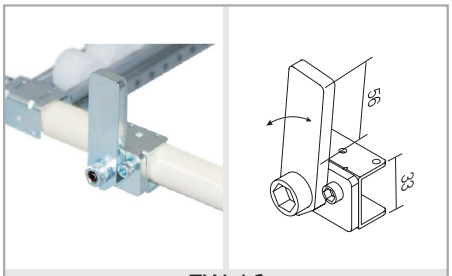
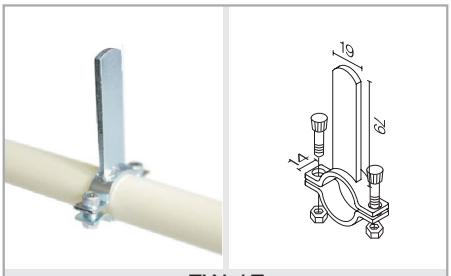
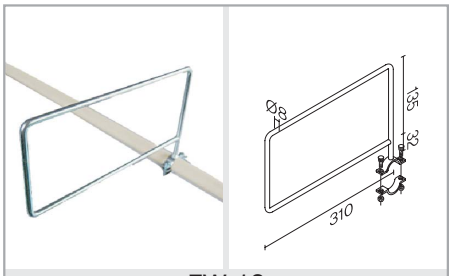


EW-16



EW-17



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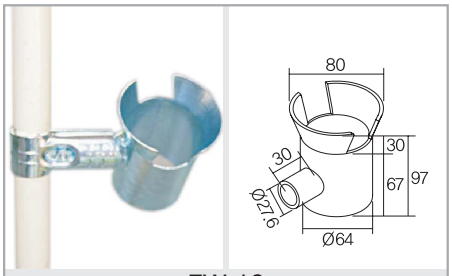

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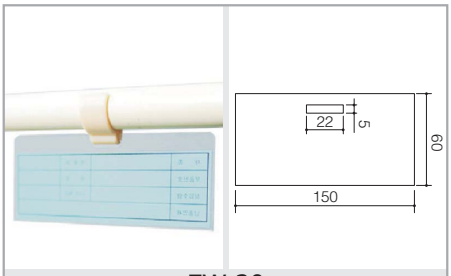
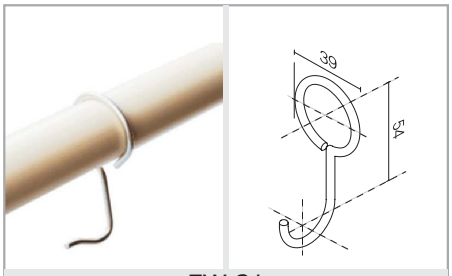


EW-20

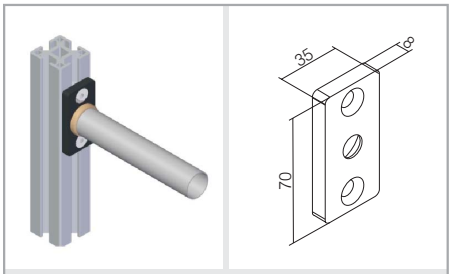


EW-21

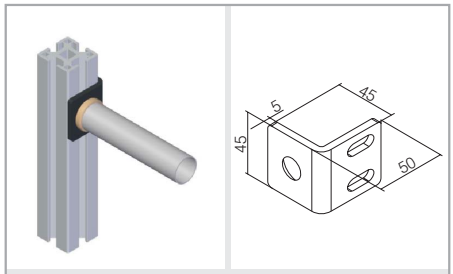
Mocowanie do alumiowych profili systemowych
Fixing elements for alu profile systems

Uniwersalne łączniki, służące do połączenia elementów Systemu PJ z aluminiowymi profilami systemowymi.

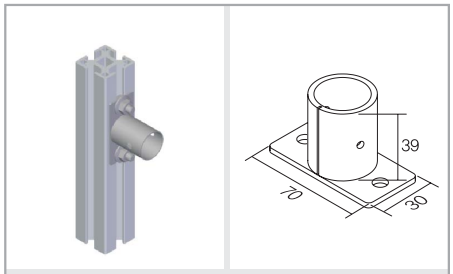
Universal joints to connect PJ System elements and alu profile system elements.



MS-1



MS-2



MS-3

Akcesoria Accessories

Akcesoria pozwalające rozszerzyć funkcjonalność urządzeń wykonanych z elementów Systemu PJ.

Accessories enabling the user to broaden the scope of functions of equipment made of PJ System components.

Blokada podłogowa / Floor lock

Zaczep dyszla / Coupling hook

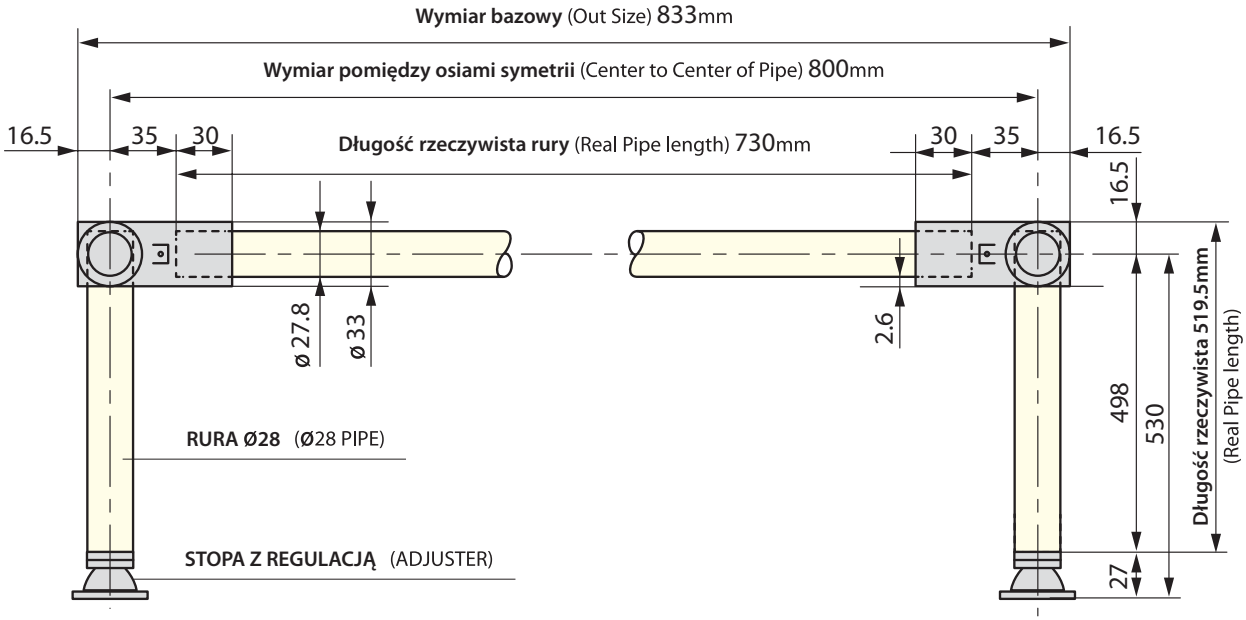
Dyszel / Tovbar

Elementy obiciowe Cover materials

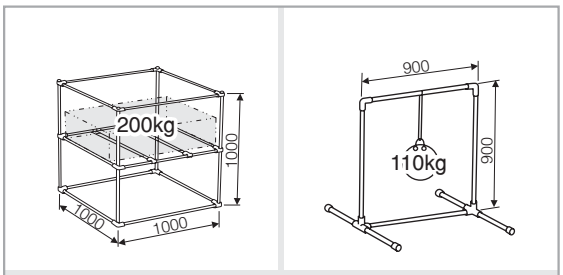
Oferujemy wiele rodzajów materiałów obiciowych: gumy mikroporowate, ryflowane, olejoodporne, antystatyczne, pianki zabezpieczające, osłony zabezpieczające z oplotem na rurę 28mm, płyty PE oraz folie teflonowe.

We offer a wide range of surface covering materials: micro-pore rubber, grooved rubber, oil-resistant rubber, antistatic rubber, protective foams, armoured hoses for protection of 28 mm pipe, PE plates, and Teflon films.

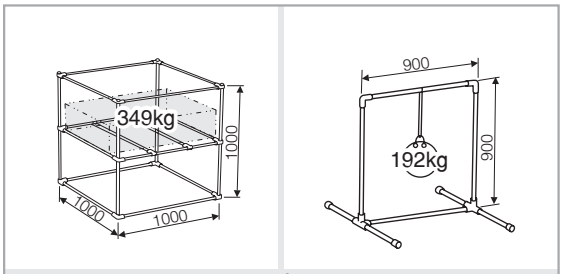
Obliczanie długości rur Length calculations



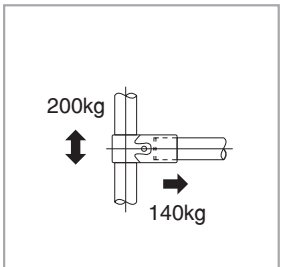
Wytrzymałość rur i złączek Pipe and joint resistance



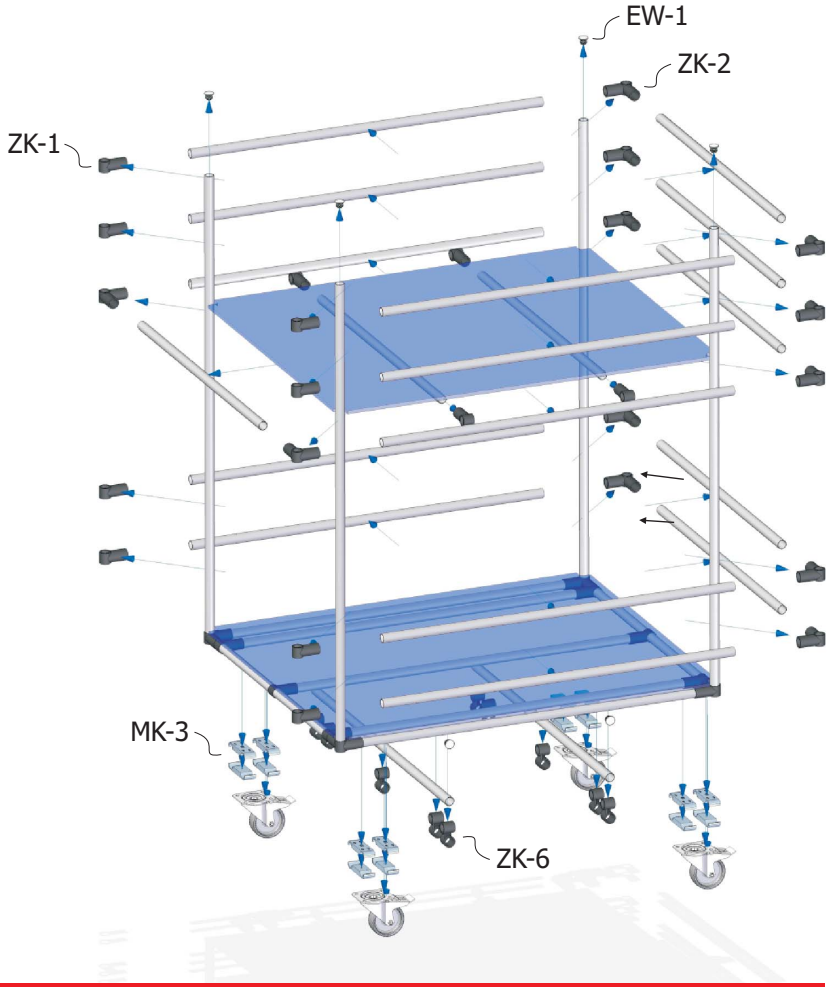
Rura RG / RG Pipe



Rura RN / RN Pipe



Złączka / Joint



O nas

Firma WAMECH jest jednym z wiodących polskich producentów wózków specjalistycznych.
Od 1989 roku projektuje i wdraża innowacyjne wózki do transportu komponentów, produktów gotowych, narzędzi oraz surowców. Głównymi odbiorcami jest przemysł motoryzacyjny, spożywczy oraz budowlany.
W swoim portfolio Firma posiada kilka tysięcy projektów dedykowanych, dzięki którym na co dzień przyczynia się do usprawniania procesów logistycznych.
Współpraca z największymi producentami z branży automotive przyczyniła się do wypracowania przez Firmę WAMECH efektywnego systemu realizacji nowych projektów, dając możliwość produkowania niewielkich serii przy stosunkowo niskich kosztach.
Firma stawia na innowacyjne, a zarazem proste rozwiązania, które dają gwarancję szybkiego zwrotu z inwestycji. Produkty dedykowane oferowane przez WAMECH cechuje minimalizm przestrzeni, bezpieczeństwo transportu oraz możliwość dostosowania do każdego profilu produkcji.
Firma Wamech zajmuje się również dystrybucją kół i zestawów kołowych do transportu wewnętrznego oraz elementów systemu PJ.
Ciągłe doskonalenie i rozwój stanowią nieodłączny element polityki Firmy. W roku 2000 Firma uzyskała certyfikat TÜV-CERT potwierdzający zgodność pracy Zakładu z normą PN-ISO 9001.

About us

WAMECH company is one of the leading Polish manufacturers of specialized trolleys.
Since 1989, it has been designing and constructing innovative carts for the transport of components, finished products, tools and raw materials.
The main customers are automotive, food and construction industries. The company’s portfolio includes several thousand of projects dedicated to facilitate every day logistics processes.
Cooperation with the largest manufacturers of automotive industry has contributed to the development of WAMECH’s effective system of implementation of new projects, enabling the production of short series at relatively low cost.
The company focuses on innovative, yet simple solutions. Only this can guarantee a quick return on investment . Products offered by WAMECH are a perfect solution where space is scarce, ensure safe transport and can be easily adapted to fit any production profile.
Wamech's additional line of business is the distribution of castors and castor sets for indoor transport and of PJ System components.
The Company is committed to continuous improvement and development. In 2000, Wamech was awarded a TÜV CERT certificate confirming the compliance with PN-ISO 9001.

Notatki Note

Notatki Note

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