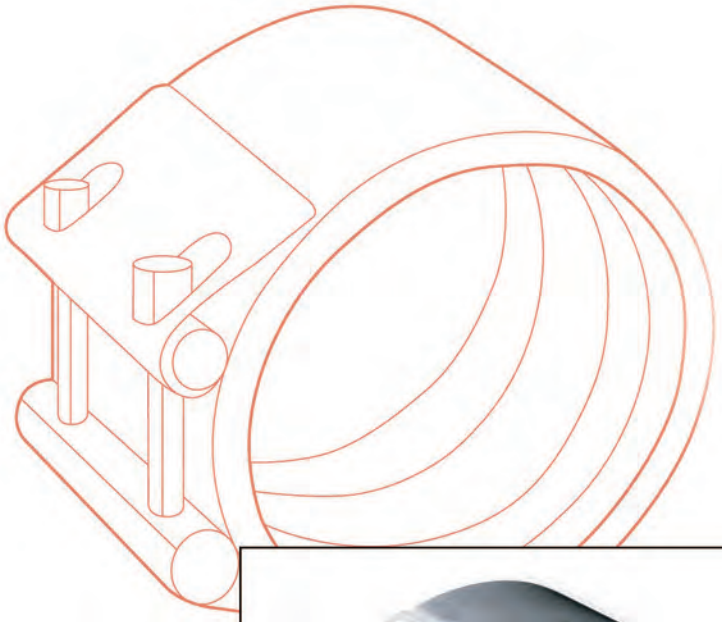
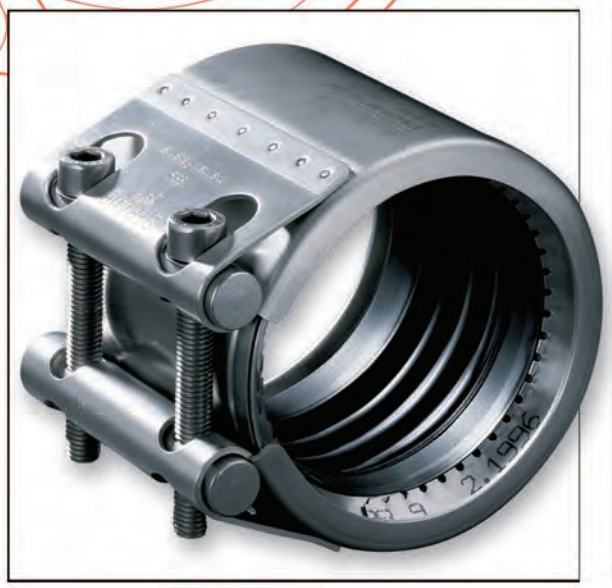
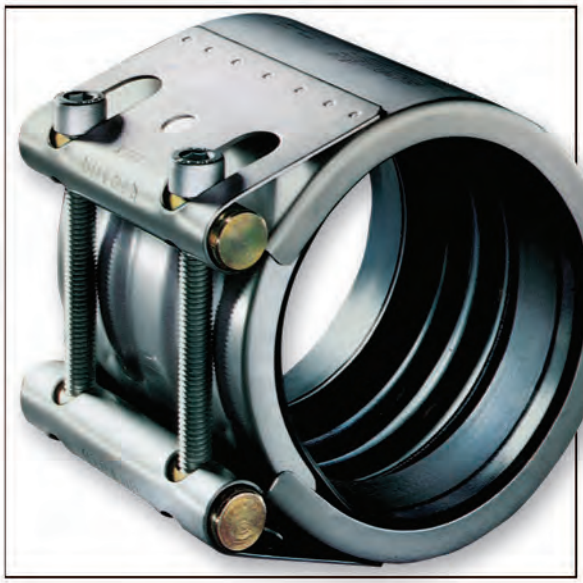


straub

2017

the right connection



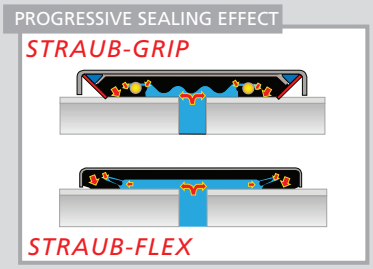


straub couplings

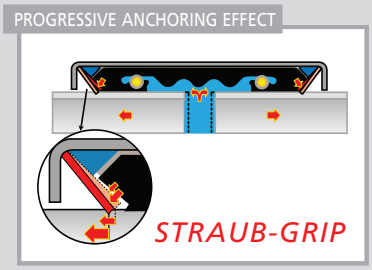
Trusted Pipe-Joining Solutions For Over Forty Years

STRAUB Pipe Couplings

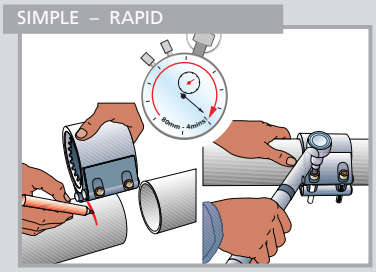
PROGRESSIVE SEALING EFFECT



PROGRESSIVE ANCHORING EFFECT

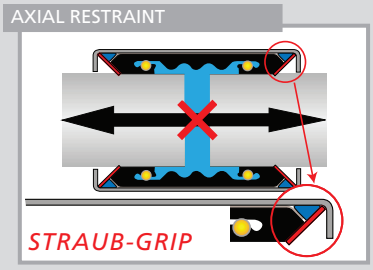


SIMPLE – RAPID

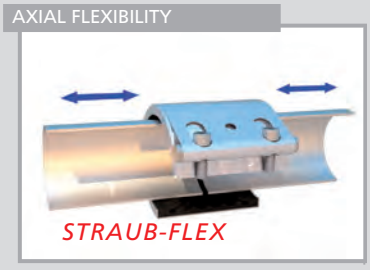


VIBRATION AND NOISE DAMPING

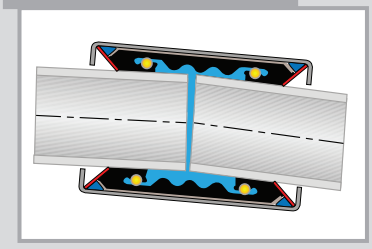
AXIAL RESTRAINT



AXIAL FLEXIBILITY



FLEXIBILITY



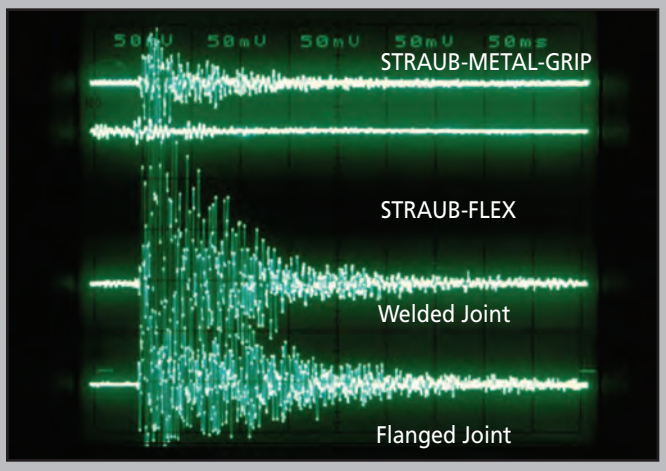
SPACE SAVING

- Joins different pipe materials
- Progressive lip seal technology
- Eliminates Welding. No Special tools Required.
- Detachable and reusable
- Fastest and easiest way to join pipes.
- Saves: Time - Labor - Money
- Over 180 approvals worldwide

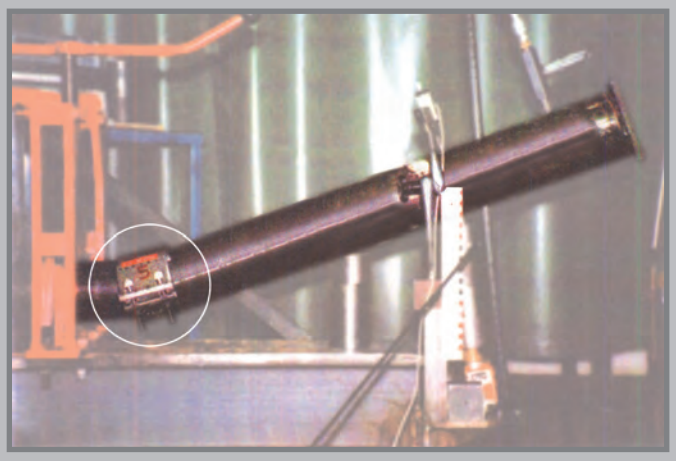
an Aliaxis company

HI-PERFORMANCE PIPE COUPLINGS

The dependable plain end coupling system that **SAVES TIME**, **SAVES MONEY** and **SAVES SPACE**.
The STRAUB coupling is a patented mechanical coupling system for joining plain end pipe in sizes ¾" through 144".



Noise & Vibration Damping



Angular Deflection: 20 degrees
Pressure: 300 PSI

FAST AND ECONOMICAL

- Stab fit design - ready to install
- No Special Tools Required
- Fits Plain-End Pipes
- Reusable

The STRAUB system eliminates the need for any pipe end preparation, saving time and money. Assembly requires only a torque wrench to secure the pipe joint. The unique low profile design closes around the circumference of the pipe or tube, creating a leak tight seal without the need for lubricant. STRAUB couplings are used to join virtually any plain end pipe or tube including steel, stainless steel, ductile iron, FRP, PVC, CPVC, C900, CPP, concrete pipe, copper, and CuNi.

FEATURES & BENEFITS

UNIVERSAL USE
- Suitable for almost any pipe material
- Joins pipes of the same or dissimilar materials
- Suitable for pressure, vacuum or suction lines
- Leakproof joint, due to the pressure responsive gasket
- Quick and simple repairs to existing pipe lines

ECONOMICAL
- Pre-assembled, stab-fit design ensures simple, rapid, installation
- For use on plain-end pipes without the need for costly pipe end preparation
- Simply cut pipes to length, center coupling and tighten bolts
- Suitable for thick or thin wall pipes
- Needs only a torque wrench - no other special tools required

RELIABLE
- Stress-free, flexible pipe joint
- Compensates for axial movement and angular deflection
- Pressure-resistant and leak-proof even with inaccurate pipe assembly
- Dampens water-hammer, vibration and structure-borne noise

EASY HANDLING
- Detachable and re-usable, maintenance free
- Eases pipe alignment problems
- Simple and quick to install, reduces installation costs
- No heat or fire hazard, can be fitted in fire risk or confined spaces without special equipment or permits

DURABLE
- Progressive sealing effect, higher pressures reinforce the seal
- Axial restraint versions available, prevents pipe pull-out
- Corrosion resistant; all stainless steel construction
- Good resistance to temperature and chemicals
- Reusable

SPACE-SAVING
- Compact design, saves space and allows pipes to be compactly installed
- Allows the use of low profile pipe insulation
- Can be accessed in confined areas, coupling can be rotated to provide ease of access to bolts
- Light weight

THE STRAUB CONCEPT

PRESSURE RESPONSIVE SEAL

- Seal is reinforced by increasing line pressure, ensuring long life performance.
- Seals on rough pipe surfaces
- No lubrication of gasket is required
- Pressure or vacuum service
- Absorbs noise and vibration
- Low torque/compression ensures long service life

COMPACT DESIGN

- Saves Space
- Allows pipes to be closely grouped
- Allows low profile installation
- Corrosion resistant construction

EASE OF HANDLING & ASSEMBLY

- Light weight
- Simple and quick to install
- Stab fit, no need to disassemble
- Low torque required
- No pipe end preparation
- Reusable
- Never needs retightening
- No welding

All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

STRAUB-METAL-GRIP & STRAUB-GRIP-L

The STRAUB-GRIP-L and STRAUB-METAL-GRIP couplings join plain end pipes with axial restraint. STRAUB-GRIP-L and STRAUB-METAL-GRIP provide pull out resistance in excess of the coupling's rated working pressure. Whether for pressure or suction lines, thick or thin wall pipe, the STRAUB-GRIP-L and STRAUB-METAL-GRIP couplings are installed quickly, safely and economically. Due to the unique design of the teeth, as internal pressure increases, the anchoring effect is progressively increased. The engagement of the teeth into the pipe's outside surfaces provides for electrical conductivity across the pipe joint.

STRAUB-FLEX

The STRAUB-FLEX coupling will join virtually any plain end pipe. Whether pressure or suction lines, thick or thin wall pipe, the STRAUB-FLEX coupling is installed quickly, safely and economically. STRAUB-FLEX couplings can accommodate pipe system expansion and contraction movement as well as angular deflection. STRAUB-FLEX couplings require the pipes to be axially restrained and are an economical alternative to rubber and metal expansion joints.

STRAUB-OPEN-FLEX

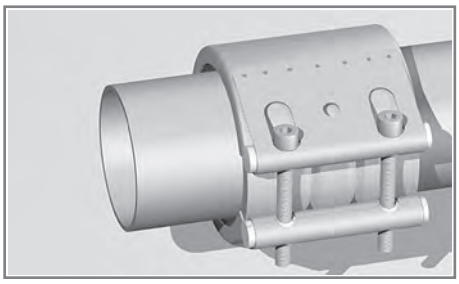
The STRAUB-OPEN-FLEX is a split coupling version of STRAUB-FLEX, offering all the STRAUB-FLEX benefits, plus being able to make repairs to in service pipe lines. With the STRAUB-OPEN-FLEX coupling, leaks due to faulty weld joints, pitting holes and short cracks can be temporarily or permanently repaired with minimal down time. The split gasket design can be wrapped around the pipe and installed without pipe disassembly. Assembly tools are available to ease the installation of the STRAUB-OPEN-FLEX coupling. When used to join pipe ends the STRAUB-OPEN-FLEX coupling provides the same flexibility features as the STRAUB-FLEX design. STRAUB-OPEN-FLEX couplings require the pipes to be axially restrained.

THE BASIC CONCEPT

Two types of Straub Couplings

• STRAUB-GRIP

PULL OUT RESISTANT



• STRAUB-FLEX/ OPEN-FLEX

NOT PULL-OUT RESISTANT

- Available with STRAUB-STRONG restraint system. Pricing and info on request.

STRAUB-GRIP

STRAUB-GRIP type couplings utilize a patented grip ring and are pull-out resistant to a minimum of four times the agency approval working pressure.*

STRAUB-FLEX/-OPEN-FLEX

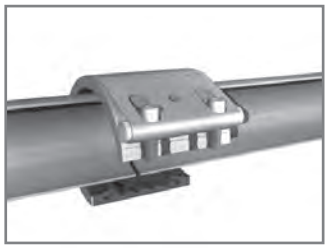
STRAUB-FLEX type couplings do not have a grip ring and are therefore suitable for applications requiring axial movement due to thermal growth or other factors. STRAUB-FLEX couplings are a suitable replacement for expansion joints.

STRAUB-OPEN-FLEX couplings are a split case version of the standard STRAUB-FLEX coupling.

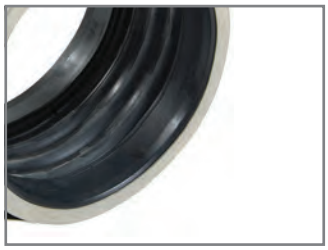
STRAUB-GRIP

PULL-OUT RESISTANT

STRAUB-FLEX/-OPEN-FLEX



NOT PULL-OUT RESISTANT



STRAUB-GRIP-L
PAGE 8, 15

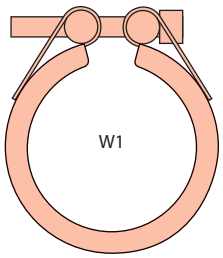
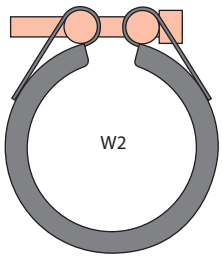
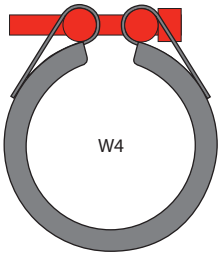
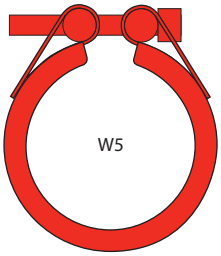
STRAUB-METAL-GRIP
PAGE 9

STRAUB-FLEX
PAGE 10-14

STRAUB-OPEN-FLEX
PAGE 10-14

*** Marine Approval Societies**

MATERIAL SPECIFICATIONS

Components	COUPLING TYPES							
								
	W1		**W2**		**W4**		**W5***	
	DIN	AISI	DIN	AISI	DIN	AISI	DIN	AISI
Casing	1.0570, galvanized	1024	1.4301/1.4404	304/316L	1.4301	304	1.4571	316 Ti/316L
Bolts	1.7220	4135	1.7220	4135	1.4404/1.4435	316L	1.4404/1.4435	316L
Bars	1.0737 galvanized	12L14	1.0737, galvanized	12L14	1.4404/1.4435	316L	1.4404/1.4435	316L
Anchoring ring	1.43110	301	1.4310/1.4301	301	1.4310/1.4301	301	1.4310	301
Strip insert (option)	1.44350	316L	1.4435	316L	1.4435	316L	1.4435	316L

* Lean and Super Duplex casings available for some product types.
Optional strip insert - AISI Type 316L Stainless Steel, HDPE or PVDF.
For casing designations refer to the size and pressure indicated in the STRAUB-FLEX and STRAUB-OPEN-FLEX selection chart.
All materials meets ANSI / AISI standards.

GASKET SPECIFICATIONS

GASKET MATERIAL:	GENERAL SERVICE APPLICATION:
EPDM -4˚ to +212˚F*	Water, dilute acids, alkalies, salts, and many chemical services not involving hydrocarbons, oils or gases. Excellent oxidation resistance. NOT FOR USE WITH HYDROCARBONS.
Nitrile -4˚ to +180˚F	Petroleum products, vegetable oils, mineral oils and air contaminated with petroleum oils. H-NBR available for higher temperature applications.
HNBR -4˚ to +257˚F (on request only, quantity sensitive)	Water, Gas, Oil, Fuel and other Hydrocarbons
FPM/FKM -4˚ to +356˚F Fluoroelastomer	High temperature resistance to oxidizing acids, petroleum oils, hydraulic fluids, halogenated hydrocarbons and lubricants. (Not available in all sizes/types).

* Maximum temperature limit is 212˚F (100˚C) with EPDM gasket material.
Higher temperature limits may be allowed subject to specific factory approval.
For specific chemical recommendations, please consult your Straub Professional.

HOW TO ORDER (Example)

PRODUCT DESIGNATION	NOMINAL PIPE SIZE OR PIPE O.D.	PIPE DESIGNATION	LOCK PARTS	GASKET MATERIAL	OPTIONAL STRIP INSERT
STRAUB-GRIP-L	10"	IPS	Stainless Steel "SS"	E - EPDM	SI
STRAUB-METAL-GRIP		CTS	Galvanized "G"	N - Nitrile	PVDF
STRAUB-FLEX + (casing type)		AWWA		V - Viton®	T
STRAUB-OPEN-FLEX + (casing type)		Other (Supply actual Pipe OD)			

Example: STRAUB-GRIP-L-10-IPS-SS-E-SI

Represents STRAUB-GRIP-L style coupling for 10" IPS pipe with stainless steel lock parts, an EPDM gasket and the optional stainless strip insert.

INTERNATIONAL CERTIFICATION

Some of the approvals for STRAUB couplings are shown above. STRAUB couplings are approved and listed by a large number of national and international agencies in various industries, including water engineering, fire protection, mining, shipbuilding & offshore, gas, petrochemical and general industry. Contact STRAUB for details. STRAUB is an ISO 9001 certified manufacturing facility and 14001 certified. US Patent Numbers: 5 280 969, 5 137 305, 3 877 733, 5 273 322, 4 119 333, 4 629 217, 5 280 970, 4 664 422, 5 310 223, 5 203 594.

STRAUB Couplings meet or exceed the requirements of ASTM 1476 & ISO/NP-15837/ 15838 & ANSI / AWWA C227-07

INDUSTRIES SERVED

- Shipbuilding & Offshore
- Water & Wastewater
- Gas Turbines
- Engine Manufacturing
- Locomotives
- Ultra - Filtration
- Compressors
- Landfills

COUPLING CHART NOTES

1	2		3	4		5		6		7	8
	PIPE OUTSIDE DIAMETER			COUPLING DIMENSIONS		ASSEMBLED DIMENSIONS		MAXIMUM DISTANCE BETWEEN PIPE ENDS (Rmax.)			
		OD Range	Working					Without	With		Approx.
Nominal IPS	Actual	+/-	Pressure	B	C	DV	KV	Strip insert		Torque Rate	Weight Each
Inches	*In./mm*	*In./mm*	*psi/bar*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*Ft.lbs./Nm*	*Lbs./kg*

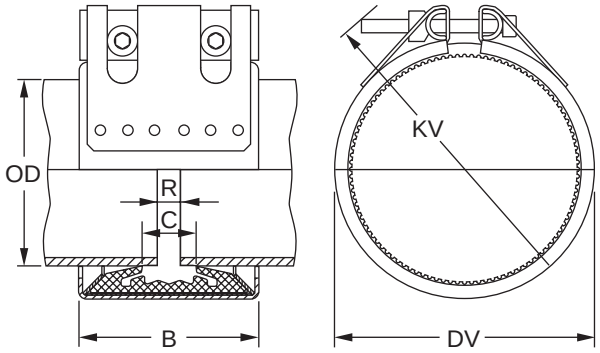
1. STRAUB Couplings are identified by either the nominal IPS pipe size, CTS tube size, or AWWA ductile iron pipe size in inches, or the pipe/tube OD in inches and millimeters.
2. Nominal outside diameter of pipe or tube that coupling will fit.
3. Maximum line pressure, including surge, to which the pipe joint should be subjected. Note: For a one-time field test the maximum joint working pressure may be increased to $1^1/_2$ times the figure shown.

   (For STRAUB-GRIP-L and STRAUB-METAL-GRIP couplings, an additional pressure rating column is shown. This is for applications that require authorization by Marine Approval Agencies such as Lloyds, ABS, DNV, etc.)
4. Coupling dimensions for reference purposes only.
5. The DV and KV assembled dimensions provided for reference.
6. Maximum allowable distance between pipe ends when assembled (with or without strip inserts).
7. Required Torque Rate. This is also printed on all couplings. Torque rate is suitable for all recommended pipe materials
8. Weight of complete coupling.

Axial-Restraint Pipe Coupling

STRAUB-GRIP-L COUPLING

For IPS Outside Diameter Pipe



3/4" - 2" couplings with 1 Bolt only.

STRAUB-GRIP L

Nominal IPS	PIPE OUTSIDE DIAMETER Actual	PIPE OUTSIDE DIAMETER OD Range	Working Pressure	Agency Approved Pressure*	COUPLING DIMENSIONS B	COUPLING DIMENSIONS C	ASSEMBLED DIMENSIONS DV	ASSEMBLED DIMENSIONS KV	MAXIMUM DISTANCE BETWEEN PIPE ENDS (Rmax.) Without Strip insert	MAXIMUM DISTANCE BETWEEN PIPE ENDS (Rmax.) With Strip insert	Torque Rate	Approx. Weight Each
Inches	*In./mm*	*In./mm*	*psi/bar*	*psi/bar*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*Ft.lbs./Nm*	*Lbs./kg*
¾	1.050 *26.9*	1.04 - 1.08 *26.4 - 27.4*	670 *46*	232 *16.0*	1.8 *46*	0.7 *18*	1.7 *43*	2.8 *71*	0.2 *5*	0.4 *10*	See label on coupling for proper torque rates	0.4 *0.2*
1	1.315 *33.7*	1.31 - 1.35 *33.2 - 34.2*	550 *38*	232 *16.0*	1.8 *46*	0.7 *18*	2 *51*	3 *76*	0.2 *5*	0.4 *10*		0.4 *0.2*
1¼	1.660 *42.4*	1.65 - 1.69 *41.9 - 42.9*	400 *30*	232 *16.0*	2.4 *61*	1 *25*	2.4 *61*	3.7 *94*	0.2 *5*	0.4 *10*		0.8 *0.4*
1½	1.900 *48.3*	1.88 - 1.92 *47.7 - 48.7*	440 *30*	232 *16.0*	2.4 *61*	1 *25*	2.6 *66*	3.9 *99*	0.2 *5*	0.4 *10*		0.9 *0.4*
2	2.375 *60.3*	2.35 - 2.40 *59.6 - 60.9*	320 *22*	232 *16.0*	3 *76*	1.5 *38*	3.1 *79*	4.3 *109*	0.4 *10*	0.6 *15*		1.2 *0.5*
2½	2.875 *73.0*	2.85 - 2.90 *72.3 - 73.6*	450 *31*	232 *16.0*	3.7 *94*	1.6 *41*	3.9 *99*	5.3 *135*	0.4 *10*	0.6 *15*		2.7 *1.2*
3	3.500 *88.9*	3.46 -3.54 *87.8 - 89.9*	320 *22*	232 *16.0*	3.7 *94*	1.6 *41*	4.4 *112*	5.9 *150*	0.4 *10*	1.0 *25*		2.6 *1.2*
3½	4.000 *101.6*	3.96 - 4.04 *100.5 - 102.6*	320 *22*	232 *16.0*	3.7 *94*	1.4 *36*	5.1 *130*	6.3 *160*	0.4 *10*	1.0 *25*		3.3 *1.5*
4	4.500 *114.3*	4.46 - 4.54 *113.2 - 115.3*	232 *16*	232 *16.0*	3.7 *94*	1.6 *41*	5.4 *137*	6.7 *170*	0.4 *10*	1 *25*		3.2 *1.5*
5	5.500 *139.7*	5.51 - 5.62 *139.9 - 142.7*	232 *16*	232 *16.0*	4.3 *109*	2.1 *53*	6.5 *165*	8.3 *211*	0.4 *10*	1.4 *36*		5.7 *2.6*
6	6.625 *168.3*	6.56 - 6.69 *166.6 - 169.9*	232 *16*	188 *13.0*	4.3 *109*	2.1 *53*	7.6 *193*	9.1 *231*	0.4 *10*	1.4 *36*		6.4 *2.9*
8	8.625 *219.1*	8.54 - 8.71 *216.9 - 221.2*	232 *16*	145 *10.0*	5.6 *142*	3.1 *79*	9.8 *249*	11.6 *295*	0.4 *10*	1.4 *36*		13.0 *5.9*
10	10.750 *273.0*	10.65 - 10.85 *270.5 - 275.5*	100 *7*	67 *4.6*	5.5 *140*	3.1 *79*	11.9 *302*	13 *330*	0.4 *10*	1.4 *36*		12.7 *5.8*
12	12.750 *323.9*	12.62 - 12.87 *320.5 - 326.8*	70 *5*	52 *3.6*	5.5 *140*	3.1 *79*	13.9 *353*	15 *381*	0.4 *10*	1.4 *36*		14.3 *6.5*
14	14.000 *355.6*	13.86 - 14.13 *352.0 - 358.9*	150 *10*	45 *3.1*	5.5 *140*	3.1 *79*	15.2 *386*	16.3 *414*	0.4 *10*	1.4 *36*		15.4 *7.0*
16	16.000 *406.4*	15.85 - 16.16 *402.5 - 410.4*	105 *7*	35 *2.4*	5.5 *140*	3.1 *79*	17.1 *434*	18.3 *465*	0.4 *10*	1.4 *36*		16.9 *7.7*
18	18.00 *457.2*	17.81 - 18.17 *452.3 - 461.5*	70 *5*	– –	5.5 *140*	3.1 *79*	19.2 *488*	20.5 *521*	0.4 *10*	1.4 *36*		18.5 *8.4*
20	20.00 *508.0*	19.82 - 20.18 *503.4 - 512.5*	60 *4*	– –	5.5 *140*	3.1 *79*	21.2 *538*	22.4 *569*	0.4 *10*	1.4 *36*		20.2 *9.2*
22	22.00 *558.8*	21.83 - 22.19 *554.4 - 563.6*	45 *3*	– –	5.5 *140*	3.1 *79*	23.2 *589*	24.4 *620*	0.4 *10*	1.4 *36*		21.8 *9.9*
24	24.00 *609.6*	23.82 - 24.17 *605.0 - 613.9*	30 *2*	– –	5.5 *140*	3.1 *79*	25.2 *640*	26.4 *671*	0.4 *10*	1.4 *36*		23.3 *10.6*
28	28.00 *711.2*	27.83 - 28.15 *707.0 - 715.0*	15 *1*	– –	5.5 *140*	3.1 *79*	29.2 *742*	30.3 *770*	0.4 *10*	1.4 *36*		28.0 *12.7*

**Agency approved pressures are for applications that require authorization of Classification Societies, such as Marine Approval Bodies.*

Other sizes available upon request.

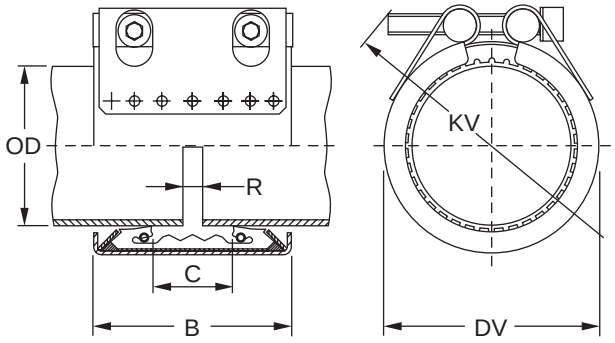
¾" - 8": W5 only
10" - 24": W2 or W5**
** Lean Duplex casings: 355.6 - 711.2

All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

Axial-Restraint Pipe Coupling

STRAUB-METAL GRIP COUPLING

For IPS Outside Diameter Pipe



STRAUB-METAL GRIP

Nominal IPS	PIPE OUTSIDE DIAMETER Actual	OD Range +/-	Working Pressure	Agency Approved Pressure*	COUPLING DIMENSIONS B	C	ASSEMBLED DIMENSIONS DV	KV	MAXIMUM DISTANCE BETWEEN PIPE ENDS (Rmax.) Without Strip insert	With Strip insert	Torque Rate	Approx. Weight Each
Inches	*In./mm*	*In./mm*	*psi/bar*	*psi/bar*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*Ft.lbs./Nm*	*Lbs./kg*
1	1.315	1.31 - 1.35	900	232	2.6	0.7	1.7	2.6	0.2	0.6	7.5	0.7
	33.7	*33.2 - 34.2*	*62.1*	*16.0*	*66*	*18*	*43*	*66*	*5*	*15*	*10*	*0.3*
1¼	1.660	1.65 - 1.69	770	232	2.4	0.8	2.4	3.5	0.2	0.6	11	1.1
	42.4	*41.9 - 42.9*	*53.1*	*16.0*	*61*	*20*	*61*	*89*	*5*	*15*	*15*	*0.5*
1½	1.900	1.88 - 1.92	640	232	2.4	0.8	2.7	3.7	0.2	0.6	11	1.1
	48.3	*47.7 - 48.7*	*44.1*	*16.0*	*61*	*20*	*69*	*94*	*5*	*15*	*15*	*0.5*
2	2.375	2.35 - 2.40	540	232	3	1.5	3.2	4.3	0.4	1.0	15	1.7
	60.3	*59.6 - 60.9*	*37.2*	*16.0*	*76*	*38*	*81*	*109*	*10*	*25*	*20*	*0.8*
3	3.500	3.46 - 3.54	540	232	3.7	1.5	4.6	5.7	0.4	1.0	26	3.2
	88.9	*87.8 - 89.9*	*37.2*	*16.0*	*94*	*38*	*117*	*145*	*10*	*25*	*35*	*1.5*
4	4.500	4.46 - 4.54	490	232	3.7	1.5	5.5	6.5	0.4	1.0	26	3.8
	114.3	*113.2 - 115.3*	*33.8*	*16.0*	*94*	*38*	*140*	*165*	*10*	*25*	*35*	*1.7*
5	5.500	5.44 - 5.56	470	232	4.3	1.7	6.6	7.9	0.6	1.4	45	7.8
	139.7	*138.7 - 141.2*	*32.4*	*16.0*	*109*	*43*	*168*	*201*	*15*	*36*	*60*	*3.5*
6	6.625	6.56 - 6.69	420	232	4.3	1.7	7.9	9.1	0.6	1.4	45	8.8
	168.3	*166.6 - 169.9*	*28.8*	*16.0*	*109*	*43*	*201*	*231*	*15*	*36*	*60*	*4.0*
8	8.625	8.54 - 8.71	380	232	5.9	2.4	10.2	11.6	0.6	1.4	75	20.6
	219.1	*216.9 - 221.2*	*26.2*	*16.0*	*150*	*61*	*259*	*295*	*15*	*36*	*100*	*9.4*
10	10.750	10.65 - 10.85	300	174	5.8	2.6	12.5	14.6	0.6	1.4	135	33.5
	273.0	*270.5 - 275.5*	*20.7*	*12.0*	*147*	*66*	*318*	*371*	*15*	*36*	*180*	*15.2*
12	12.750	12.62 - 12.87	250	145	5.8	2.6	14.5	16.5	0.6	1.4	170	37.8
	323.9	*320.5 - 326.8*	*17.2*	*10.0*	*147*	*66*	*368*	*419*	*15*	*36*	*230*	*17.2*
14	14.000	13.86 - 14.13	250	116	5.8	2.6	15.8	17.7	0.6	1.4	170	40.3
	355.6	*352.0 - 358.9*	*17.2*	*8.0*	*147*	*66*	*401*	*450*	*15*	*36*	*230*	*18.3*
16	16.000	15.85 - 16.16	200	116	5.8	2.6	17.8	19.7	0.6	1.4	170	54.3
	406.4	*402.5 - 410.4*	*13.8*	*8.0*	*147*	*66*	*452*	*500*	*15*	*36*	*230*	*24.7*
18	18.000	17.81 - 18.19	120	94	5.8	2.6	20	22	0.6	1.4	185	59.4
	457.2	*452.3 - 462.0*	*8.3*	*6.4*	*147*	*66*	*508*	*559*	*15*	*36*	*250*	*27.0*
20	20.000	19.80 - 20.20	90	80	5.8	2.6	22	24	0.6	1.4	185	64.2
	508.0	*502.9 - 513.0*	*6.2*	*5.5*	*147*	*66*	*559*	*610*	*15*	*36*	*250*	*29.2*
24	24.000	23.80 - 24.19	70	65	5.8	2.6	26	28	0.6	1.4	221	74.2
	609.6	*604.5 - 614.4*	*4.9*	*4.4*	*147*	*66*	*660*	*711*	*15*	*36*	*300*	*33.7*

**Agency approved pressures are for applications that require authorization of Classification Societies, such as Marine Approval Bodies.*

Other sizes available upon request.

1" - 8": W2 or W4
10" - 24": W1 only

All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

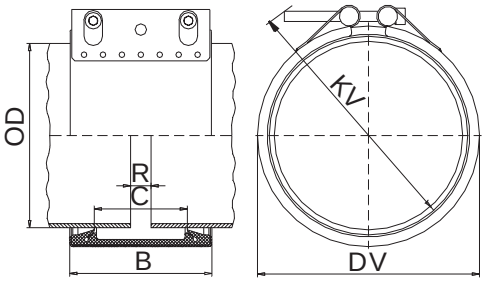
STRAUB-OPEN-FLEX-IL

Non-Axial Restraint Pipe Coupling

STRAUB-FLEX 1L & STRAUB-OPEN-FLEX 1L COUPLING

For IPS Outside Diameter Pipe

- Open-Flex Meets AWWA C-230 & C-227
- Pipes must be properly anchored and supported.
- STRAUB-FLEX & STRAUB-OPEN-FLEX Couplings are NOT pull-out resistant.
- STRAUB-STRONG Special Restraint System. (Info and pricing available on request.)

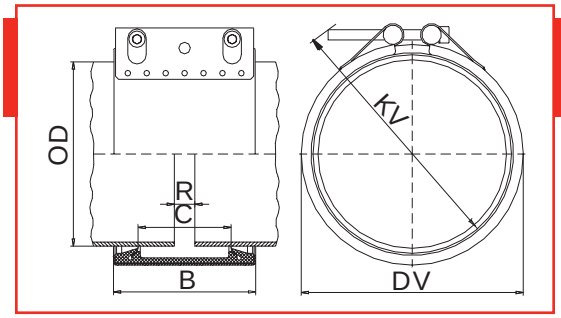


STRAUB-FLEX 1L & STRAUB-OPEN-FLEX 1L

Nominal IPS	PIPE OUTSIDE DIAMETER Actual	OD Range +/-	Working Pressure	COUPLING DIMENSIONS B	C	ASSEMBLED DIMENSIONS DV	KV	MAXIMUM DISTANCE BETWEEN PIPE ENDS (Rmax.) Without Strip insert	With Strip insert	Approx. Weight Each
Inches	*In./mm*	*In./mm*	*psi/bar*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*Lbs./kg*
1½	1.900	1.85 - 1.95	363	3.0	1.4	2.8	3.3	0.2	0.6	1.1
	48.3	*46.9 - 49.5*	*25*	*76*	*35*	*71*	*85*	*5*	*15*	*0.5*
2	2.375	2.32 - 2.42	232	3.0	1.4	3.2	3.7	0.2	0.6	1.3
	60.3	*58.9 - 61.4*	*16.0*	*76*	*35*	*81*	*95*	*5*	*15*	*0.6*
2½	2.875	2.81 - 2.93	232	3.0	1.4	3.2	3.7	0.2	1.0	1.76
	73.0	*71.3 - 74.4*	*16.0*	*76*	*35*	*81*	*95*	*5*	*25*	*.8*
3	3.500	3.44 - 3.56	232	3.7	2.0	4.4	4.9	0.2	1.0	2.1
	88.9	*87.3 - 90.4*	*16.0*	*94*	*51*	*112*	*125*	*5*	*25*	*1.0*
4	4.500	4.43 - 4.57	232	3.7	2.0	5.4	5.9	0.2	1.0	2.3
	114.3	*112.5 - 116.0*	*16.0*	*94*	*51*	*137*	*150*	*5*	*25*	*1.1*
5	5.500	5.45 - 5.57	232	4.2	2.4	6.4	7.1	0.2	1.4	3.1
	139.7	*138 - 141.5*	*16.0*	*107*	*61*	*163*	*180*	*5*	*35*	*1.4*
6	6.625	6.54 - 6.71	232	4.2	2.4	7.5	8.1	0.2	1.4	3.7
	168.3	*166.1 - 170.4*	*16.0*	*107*	*61*	*191*	*206*	*5*	*35*	*1.7*

* W2 or W5 OPEN-FLEX 1L in hinged style only

Other sizes available upon request.



STRAUB-FLEX & STRAUB-OPEN-FLEX COUPLING

Coupling Dimensions

STRAUB-FLEX 2 & STRAUB-OPEN-FLEX 2 Dimensions

STRAUB-FLEX or STRAUB-OPEN-FLEX TYPE	COUPLING DIMENSIONS B	C	ASSEMBLED DIMENSIONS DV	Maximum Distance Between Pipe Ends (Rmax.) Without Strip insert	With Strip insert
	In./mm	*In./mm*	*In./mm*	*In./mm*	*In./mm*
2L	5.4	3.6	OD+.91	0.39	1.38
	138	*91*	*OD+23*	*10*	*35*
2LS	5.5	3.6	OD+.95	0.39	1.38
	140	*91*	*OD+24*	*10*	*35*
2LU	5.5	3.6	OD+.95	0.39	1.38
	141	*91*	*OD+24*	*10*	*35*
2H	5.6	3.6	OD+1.02	0.39	1.38
	142	*91*	*OD+26*	*10*	*35*
2XS	5.8	3.6	OD+1.26	0.39	1.38
	148	*91*	*OD+32*	*10*	*35*

W1, W2, or W5, Consult factory for details

OPEN-FLEX 2 not available in hinged style.

2LV version in lean duplex available. Price on request only.

STRAUB-FLEX 3 & STRAUB-OPEN-FLEX 3 Dimensions

STRAUB-FLEX or STRAUB-OPEN-FLEX TYPE	COUPLING DIMENSIONS B	C	ASSEMBLED DIMENSIONS DV	Maximum Distance Between Pipe Ends (Rmax.) Without Strip insert	With Strip insert
	In./mm	*In./mm*	*In./mm*	*In./mm*	*In./mm*
3L	8.3	5.0	OD+1.42	0.59	2.36
	210	*127*	*OD+36*	*15*	*60*
3LS	8.3	5.0	OD+1.46	0.59	2.36
	210	*127*	*OD+37*	*15*	*60*
3LU	8.4	5.0	OD+1.50	0.59	2.36
	213.4	*127*	*OD+38*	*15*	*60*
3H	8.35	5.0	OD+1.5	0.59	2.36
	212	*127*	*OD+38*	*15*	*60*
3X	8.58	5.0	OD+1.73	0.59	2.36
	218	*127*	*OD+44*	*15*	*60*

W1, W2, or W5, See Page 6 for details.

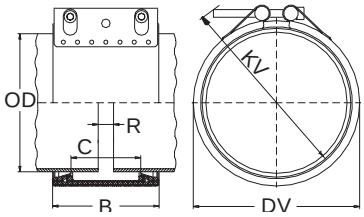
OPEN-FLEX 3 not available in hinged style.

3LV version available in lean duplex steel. Price on request only.

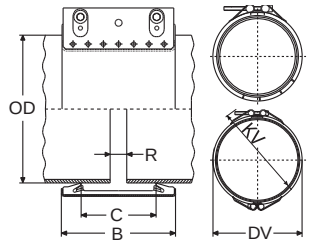
All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

STRAUB-FLEX 2 & STRAUB-OPEN-FLEX 2 COUPLING

For IPS Outside Diameter Pipe



STRAUB-FLEX



STRAUB-OPEN-FLEX

(Slotted Type)

Non-Axial Restraint Pipe Couplings

- Pipes must be properly anchored and supported.
- STRAUB-FLEX & STRAUB-OPEN-FLEX Couplings are NOT pull-out resistant.
- STRAUB-STRONG Special Restraint System. (Info and pricing available on request.)
- STRAUB-OPEN-FLEX Installation tool available

STRAUB-FLEX 2 & STRAUB-OPEN-FLEX 2 Selection Chart

Nominal IPS Pipe Size	Pipe Outside Diameter	2L Working Pressure	2LS Working Pressure	2LU Working Pressure	2H Working Pressure	2XS Working Pressure
(Inches)	*In./mm*	*psi/bar*	*psi/bar*	*psi/bar*	*psi/bar*	*psi/bar*
6	6.625	189	225	387	–	–
	168.3	*13*	*17.6*	*26.7*	–	–
8	8.625	145	198	367	–	–
	219.1	*10*	*13.5*	*25*	–	–
10	10.750	116	161	323	367	–
	273.1	*8*	*11*	*22*	*25*	–
12	12.750	102	132	264	367	–
	323.9	*7*	*9.5*	*18.5*	*25*	–
14	14.000	87	117	249	367	–
	355.6	*6*	*8.5*	*17*	*25*	–
16	16.000	80	102	220	323	367
	406.4	*5.5*	*7.5*	*15*	*22*	*25*
18	18.000	73	94	191	279	367
	457.2	*5*	*6.5*	*13*	*19*	*25*
20	20.000	65	88	176	249	367
	508.0	*4.5*	*6*	*12*	*17*	*25*
24	24.000	51	73	147	205	367
	609.6	*3.5*	*5*	*10*	*14*	*25*
28	28.000	–	58	117	176	367
	711.2	–	*4*	*8*	*12*	*25*
30	30.000	–	58	117	176	338
	762.0	–	*4*	*8*	*12*	*23*
32	32.000	–	51	110	161	323
	812.8	–	*3.5*	*7.5*	*11*	*22*
36	36.000	–	51	95	147	294
	914.4	–	*3.5*	*6.5*	*10*	*20*
42	42.000	–	44	80	147	249
	1066.8	–	*3*	*5.5*	*10*	*17*
48	48.000	–	36	73	102	220
	1219.2	–	*2.5*	*5*	*7*	*15*

For pressure ratings see **Selection Charts.**

2L, 2LS, 2LU: W2 & W5
2H, 2XS: W1

The selection charts are used to select the proper type of STRAUB-FLEX or STRAUB-OPEN-FLEX coupling for the application pressure. Separate charts are used for the TYPE 2 and 3 designs.

For complete dimensional data, see Page 10 or please consult the factory, STRAUB Technical Manual, or an authorized STRAUB Distributor.

Other sizes available upon request.

*STRAUB-FLEX is also available in a two-piece construction - useful for very tight spaces and for ease of handling.

STRAUB-OPEN-FLEX 2 couplings are available in two different styles depending on model and size:

- Slotted Casing
- 2-Piece Execution

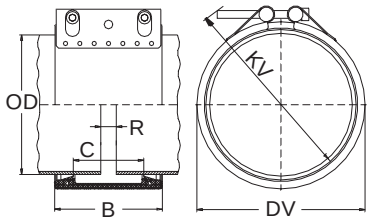
STRAUB-OPEN-FLEX gaskets are cut and riveted to casing.

Please consult your STRAUB professional for more information

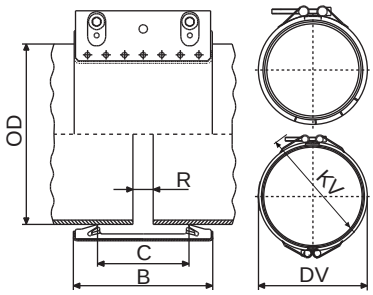
All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

STRAUB-FLEX 3 & STRAUB-OPEN-FLEX 3 COUPLING

For IPS Outside Diameter Pipe



STRAUB-FLEX-3



STRAUB-OPEN-FLEX

Non-Axial Restraint Pipe Couplings

- Pipes must be properly anchored and supported.
- STRAUB-FLEX & STRAUB-OPEN-FLEX Couplings are NOT pull-out resistant.
- STRAUB-STRONG Special Restraint System. (Info and pricing available on request.)

STRAUB-FLEX 3 & STRAUB-OPEN-FLEX 3 Selection Chart

Nominal IPS Pipe Size *(Inches)*	Diameter *In./mm*	3L Working Pressure *psi/bar*	3LS Working Pressure *psi/bar*	3LU Working Pressure *psi/bar*	3H Working Pressure *psi/bar*	3X Working Pressure *psi/bar*
8	8.63	150	187	–	–	–
	219.1	*10.3*	*12.9*	–	–	–
10	10.75	150	187	–	–	–
	273.1	*10.3*	*12.9*	–	–	–
12	12.750	143	189	363	–	–
	323.9	*9.9*	*13.0*	*25.0*	–	–
14	14.000	119	160	363	–	–
	355.6	*8.2*	*11.0*	*25.0*	–	–
16	16.000	107	140	328	363	–
	406.4	*7.4*	*9.7*	*22.6*	*25.0*	–
18	18.000	95	125	292	363	–
	457.2	*6.6*	*8.6*	*20.1*	*25.0*	–
20	20.000	85	112	263	363	–
	508.0	*5.9*	*7.7*	*18.1*	*25.0*	–
24	24.000	71	94	203	251	363
	609.6	*4.9*	*7.0*	*14*	*17.3*	*25.0*
28	28.000	59	81	174	218	363
	711.2	*4.1*	*5.6*	*12*	*15.0*	*25.0*
30	30.000	55	74	160	203	363
	762.0	*3.8*	*5.1*	*11*	*14.0*	*25.0*
32	32.000	55	71	152	189	363
	812.8	*3.8*	*4.9*	*10.5*	*13.0*	*25.0*
36	36.000	46	64	123	187	334
	914.4	*3.2*	*4.4*	*8.5*	*11.5*	*23.0*
42	42.000	39	54	107	145	261
	1066.8	*2.7*	*3.7*	*7.3*	*10.0*	*18.0*
48	48.000	34	51	94	123	247
	1219.2	*2.3*	*3.5*	*6.5*	*8.5*	*17.0*
54	54.000	30	42	81	113	223
	1371.6	*2.1*	*2.9*	*5.5*	*7.5*	*15.4*
60	60.000	26	36	73	102	203
	1524.0	*1.8*	*2.5*	*5.0*	*7.0*	*14.0*
66	66.000	22	36	60	89	182
	1676.4	*1.5*	*2.4*	*4.1*	*6.0*	*12.5*
72	72.000	20	29	51	80	160
	1828.8	*1.3*	*2.0*	*3.5*	*5.5*	*11.0*

3L, 3LS, 3LU: W2 & W5
3H, 3X: W1

For complete dimensional data, see page 10 or please consult the factory, STRAUB Technical Manual, or an authorized STRAUB Distributor.

STRAUB-FLEX-3 & STRAUB-OPEN FLEX-3 are designed with 3-BOLTS

Other sizes available upon request.

STRAUB-OPEN-FLEX 3 couplings are available in two different styles depending on model and size:

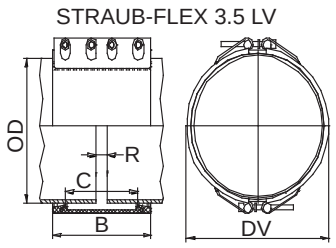
- Slotted Casing
- 2-Piece Execution

OPEN-FLEX gaskets are cut and riveted to casing

Please consult your STRAUB professional for more information

All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

STRAUB-FLEX & STRAUB-OPEN-FLEX COUPLING



STRAUB-FLEX-3.5

DV = Outside diameter of the assembled pipe joint (mm) = OD + 38mm
B = Width of the pipe joint (mm)
FLEX 3.5LU = 310mm
FLEX 3.5H = 311mm
C = Distance between sealing lips = 227mm
Rmax. = Distance between pipe ends
Rmax. with strip insert = 120mm
Rmax. without strip insert = 20mm

Non-Axial Restraint Pipe Couplings

- Pipes must be properly anchored and supported.
- STRAUB-FLEX 3.5 & STRAUB-FLEX 4 Couplings are NOT pull-out resistant.
- STRAUB-STRONG Special Restraint System.
  (Info and pricing available on request.)

Other sizes available upon request.

NEW PRODUCTS: CONSULT FACTORY FOR COUPLING & FITTING TOLERANCES

1 "= 25.4mm

1 bar=14.7 psi

STRAUB-FLEX 3.5 & STRAUB-OPEN-FLEX 3.5 Selection Chart

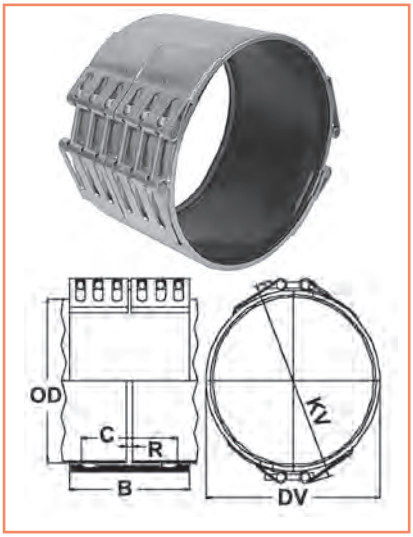
Pipe	Clamping range	Working Pressure PS FLEX 3.5		Torque rate FLEX 3.5		Locking bolts FLEX 3.5	
OD (mm)	(mm)	LU (bar)	H (bar)	LU (Nm)	H (Nm)	LU	H
323.9	320 - 327	18	25	30	30		
355.6	352 - 359	17	25	30	30		
406.4	403 - 409	15	22	30	30		
457.2	454 - 460	13	21	30	30		
508.0	505 - 512	12	20	30	40		
558.8	555 - 562	11	19	40	40		
609.6	606 - 613	10	17	40	40		
655.0	652 - 658	9	16	40	40		
711.2	707 - 715	9	15	40	40		
762.0	758 - 766	8	14	40	50	4 x M16 with socket head 14 mms	4 x M16 with socket head 14 mm
812.8	809 - 817	8	13	40	50		
914.4	910 - 918	7	12	50	60		
1016.0	1012 - 1020	6	11	50	60	8x M16 for 2 pcs. type	8x M16 for 2 pcs. type
1117.6	1113 - 1122	6	10	60	70		
1219.2	1215 - 1224	5	9	60	70		
1422.4	1418 - 1427	4	8	70	80		
1524.0	1519 - 1529	4	7	80	90		
1625.0	1621 - 1631	4	7	80	100		
1727.2	1722 - 1732	3	6	90	100		
1828.8	1824 - 1834	3	6	90	110		
1930.4	1925 - 1935	3	5	100	110		
2032.0	2027 - 2037	2	5	100	120		

Available for all pipe sizes from 558.8 mm up to 3000.0 mm (larger and smaller ø to special order)

3.5 LU:W5

3.5 H:W1

For Both STRAUB-FLEX 3.5 & STRAUB-FLEX 4	*Components/Materials*	*W1*	*W5*
	Casing	*AISI 1024, hot-dip galv.*	*AISI 316 Ti*
	Screws	*AISI 4135***	*AISI 316 L*
	Bolts	*AISI 12L 14, galvanized*	*AISI 316 L*
	Strip insert (option)	*AISI 316 L / HDPE*	*AISI 316 L / HDPE*
STRAUB-FLEX 3.5 ONLY	**Sealing sleeve EPDM**	*Temp.: -4° F up to +212°F*	
		Medium: all qualities of water, waste water, air, soiids and chemical products	
	Sealing sleeve NBR	*Temp.: -4°F up to +180°F*	
		Medium: water, gas, oil, fuel and other hydrocarbons	



STRAUB-FLEX 4

DV = Outside diameter of the assembled pipe joint (mm) = OD + 48 mm
KV = OD + 90
B = Width of the pipe joint (mm)
FLEX 4LU = 444 mm
FLEX 4H = 445 mm
C = Distance between sealing lips = 350 mm
Rmax. = Distance between pipe ends
Rmax. with strip insert = 200 mm
Rmax. without strip insert = 20 mm

STRAUB-FLEX 4 & STRAUB-OPEN-FLEX 4 Selection Chart

Pipe	Clamping range	Working Pressure PS FLEX 4		Torque rate FLEX 4		Locking bolts FLEX 4	
OD (mm)	(mm)	LU (bar)	H (bar)	LU (Nm)	H (Nm)	LU	H
323.9	320 - 327	18	25	30	60	12 x M20 with socket head 17mms	12 x M20 with socket head 17mm
609.6	606 - 613	10	14	40	60		
762.0	758 - 766	8	11	40	80		
1670.0	1666 - 1674	4	5	80	100		

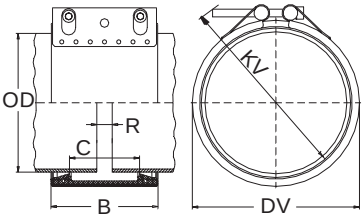
Available for all pipe sizes from 323.9 mm up to 3000.0 mm (larger and smaller ø to special order)

Legend: *- W1 - W5 according to DIN Standard 86128 (ASTM F 1476 / F1548, ISO/NP-15837 / 15838).*
*** Property class 12.9, Dacromet 500 (zinc-chromate with integrated lubricant).*

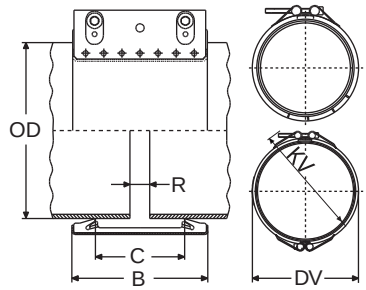
Remarks: *- Available in 2 pc. only*
- Follow fitting / disassembly instructions.
- Test pressure = 1,5 x working pressure
- Admissible maximum axial movement of the pipes Dl : 20 mm.
- Strip insert are required when the gap between the pipe ends is excessive, in presence of swelling, at vacuum/depression (suction line), or external pressure. Strip inserts are available, under separate order, at additional costs.

STRAUB-FLEX & STRAUB-OPEN-FLEX COUPLINGS

For AWWA Ductile Iron Pipe Sizes



STRAUB-FLEX



STRAUB-OPEN-FLEX 2
(2-piece execution shown)

Non-Axial Restraint Pipe Couplings

*W1, W2, or W5
Consult Factory for details

- Pipes must be properly anchored and supported.
- STRAUB-FLEX & STRAUB-OPEN-FLEX Couplings are NOT pull-out resistant.
- STRAUB-STRONG Special Restraint System. (Info and pricing available on request.)

STRAUB-FLEX 2 & STRAUB-OPEN-FLEX 2 Selection

Nominal Ductile Iron Pipe Sizes	Pipe Outside Diameter	2L Working Pressure	2LS Working Pressure	2LU Working Pressure	2H Working Pressure	2XS Working Pressure
Inches	*In./mm*	*psi/bar*	*psi/bar*	*psi/bar*	*psi/bar*	*psi/bar*
4	4.800	232	–	–	–	–
	121.9	*16.0*	–	–	–	–
6	6.900	232	–	–	–	–
	175.3	*16.0*	–	–	–	–
8	9.050	145	196	363	–	–
	229.9	*10*	*13.5*	*25.0*	–	–
10	11.100	116	160	319	–	–
	281.9	*8*	*11.0*	*22*	–	–
12	13.200	102	145	280	290	–
	335.3	*7*	*10.0*	*19.3*	*20.0*	–
14	15.300	87	123	230	290	–
	388.6	*6*	*8.4*	*15.8*	*20.0*	–
16	17.400	80	109	210	287	290
	442.0	*5.5*	*7.5*	*14.4*	*19.8*	*20.0*
18	19.500	73	94	174	260	290
	495.3	*5*	*6.4*	*12.0*	*17.9*	*20.0*
20	21.600	65	80	152	235	290
	548.6	*4.5*	*5.5*	*10.4*	*16.2*	*20.0*
24	25.800	51	70	145	197	290
	655.3	*3.5*	*4.8*	*10*	*13.6*	*20.0*
30	32.000	–	50	109	148	290
	812.8	–	*3.4*	*7.5*	*10.2*	*20.0*
36	38.300	–	45	85	125	290
	972.8	–	*3.1*	*5.8*	*8.6*	*20.0*
42	44.500	–	35	80	105	290
	1130.3	–	*2.4*	*5.5*	*7.2*	*20.0*

STRAUB-FLEX 3 & STRAUB-OPEN-FLEX 3 Selection

Nominal Ductile Iron Pipe Sizes	Pipe Outside Diameter	3L Working Pressure	3LS Working Pressure	3LU Working Pressure	3H Working Pressure	3X Working Pressure
(Inches)	*In./mm*	*psi/bar*	*psi/bar*		*psi/bar*	*psi/bar*
12	13.200	143	189	363	–	–
	335.3	*9.9*	*13.0*	*25.0*	–	–
14	15.300	119	160	363	–	–
	388.6	*8.2*	*11.0*	*25.0*	–	–
16	17.400	105	140	328	363	–
	442.0	*7.2*	*9.7*	*22.6*	*25.0*	–
18	19.500	95	123	292	363	–
	495.3	*6.6*	*8.5*	*20.1*	*25.0*	–
20	21.600	85	110	263	363	–
	548.6	*5.9*	*7.6*	*18.1*	*25.0*	–
24	25.800	71	94	203	251	363
	655.3	*4.9*	*7.0*	*14*	*17.3*	*25.0*
30	32.000	55	74	160	203	363
	812.8	*3.8*	*5.1*	*11*	*14.0*	*25.0*
36	38.300	46	64	123	167	334
	972.8	*3.2*	*4.4*	*8.5*	*11.5*	*23*
42	44.500	39	54	107	145	261
	1130.3	*2.7*	*3.7*	*7.3*	*10.0*	*18*
48	50.800	34	51	94	123	247
	1290.3	*2.3*	*3.5*	*6.5*	*8.5*	*17*
54	57.560	30	42	81	113	223
	1462.0	*2.1*	*2.9*	*5.5*	*7.8*	*15.4*
60	61.610	26	36	73	102	203
	1564.9	*1.8*	*2.5*	*5.0*	*7.0*	*14*
72	75.340	20	29	51	80	160
	1913.6	*1.3*	*2.0*	*3.5*	*5.5*	*11*

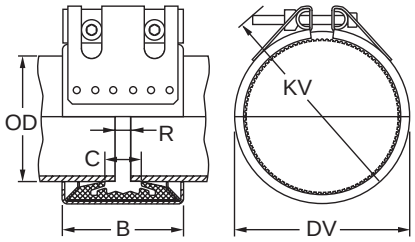
All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

STRAUB-GRIP-L
for Copper Tube

STRAUB COUPLINGS FOR COPPER TUBE

Axial Restraint Pipe Couplings

• Pipes must be properly anchored and supported.



STRAUB-GRIP-L Copper Tube Sizes (CTS)

Nominal Tubing Size	PIPE OUTSIDE DIAMETER Actual	OD Range +/-	Working Pressure	COUPLING DIMENSIONS B	C	ASSEMBLED DIMENSIONS DV	KV	Maximum Distance Between Pipe Ends (Rmax.) Without Strip insert	With Strip insert	Torque Rate	Approx. Weight Each
Inches	*In./mm*	*In./mm*	*psi/bar*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*In./mm*	*Ft. lbs./Nm*	*Lbs./kg*
2"	2.125	2.10 - 2.15	250	3.0	1.5	3.0	4.1	0.4	0.6	See label on coupling for proper torque rates	1.1
	54.0	*53.5 - 54.5*	*17.2*	*76*	*37*	*75*	*105*	*10*	*15*		*0.5*
2½"	2.625	2.55 - 2.65	390	3.7	1.4	3.5	5.0	0.4	0.6		1.54
	66.6	*64.9 - 67.3*	*27*	*94*	*36*	*89*	*127*	*10*	*15*		*0.7*
3"	3.125	3.09 - 3.16	333	3.7	1.4	4.0	5.4	0.4	0.6		2.86
	79.4	*78.7 - 80.3*	*23*	*94*	*36*	*102*	*137*	*10*	*15*		*1.3*
4"	4.125	4.08 - 4.17	250	3.7	1.4	5.3	6.1	0.4	1.0		3.3
	104.8	*103.8 - 105.8*	*17.2*	*94*	*36*	*135*	*155*	*10*	*25*		*1.5*
6"	6.125	6.06 - 6.19	200	4.3	1.9	7.3	8.3	0.4	1.2		6.6
	155.6	*154.1 - 157.1*	*13.8*	*110*	*48*	*185*	*210*	*10*	*30*		*3.0*
8"	8.125	8.04 - 8.20	100	5.5	3.1	9.3	10.4	0.4	1.4		12.1
	206.4	*204.4 - 208.4*	*6.9*	*140*	*80*	*235*	*264*	*10*	*35*		*12.1*

*W5 only

STRAUB-PLAST-PRO

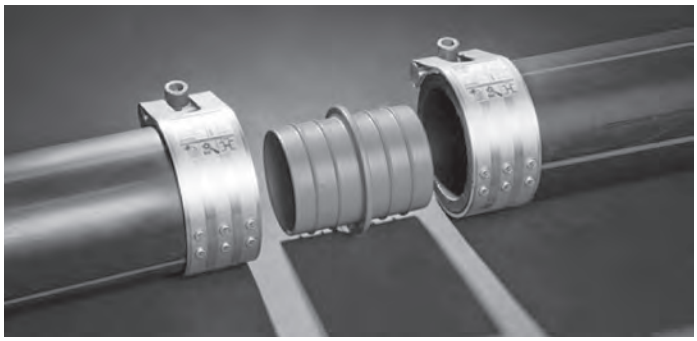
Axial restraint connection of PE80 and PE100 pipes

Axially restrained full set allowing a quick and simple installation of pressure pipes made of polyethylene(PE). The full sets are available for pipes in dimension SDR 11 (63.0 - 110.0 mm, PN16) and SDR 17 (>110.0 -355.0 mm, PN10). STRAUB-PLAST-PRO is particularly suitable for water, waste water, industrial plants and maintenance applications.

STRAUB-PLAST-PRO is applicable, whenever pipes cannot be connected by conventional technologies, like electro fusion. The unique full set offers the great advantage that pipes can easily be connected, without the need for an external power supply and pipe end preparations, even under demanding external circumstances.

The pipes made of PE 80 or PE 100 are connected with a combination of liner and two connectors. STRAUB-PLAST-PRO is highly resistant to corrosion, thanks to the usage of first class materials.

PE pipes with added protective layer and diffusion barrier layer are normally used, when drinking waterlines have to be installed in contaminated soils. If the pipes are connected in a conventional manner, it is essential that the aluminum layer is removed. This operation is not necessary if STRAUB-PLAST-PRO will be used. STRAUB-PLAST-PRO connects such barrier layer pipes easily and safely without any pipe end preparation.



PE80 and PE100 pipes according to DIN 12201 / DIN 8074

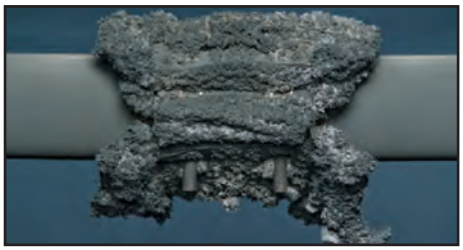
STRAUB-PLAST-PRO Liner (illustrated STRAUB-PLAST-PRO L)

PE Pipe with aluminum layer

SPECIALTY COUPLINGS

STRAUB FIRE-FENCE

The fire resistant coupling - for use wherever fire protection is required by law.

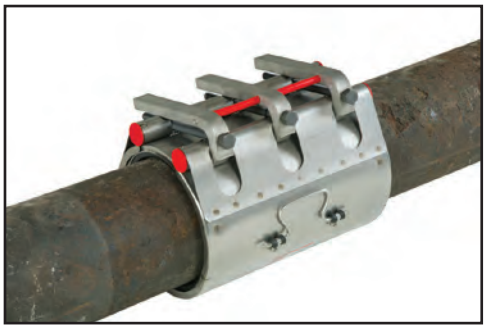


STRAUB REP-FLEX

STRAUB-REP-FLEX is used to reliably repair broken pipes and the leakage of water or drinking water pipes caused by corrosion.

The proven STRAUB sealing lip system is a dependable and durable solution for numerous pipe materials such as steel, cast iron, ductile cast iron, fiber cement, PVC or PE. It will also repair pipes of two different materials.

The EPDM sealing sleeve meets all SVGW, OVGW, WRC and NSF requirements as well as W270 and KEY according to DVGW.

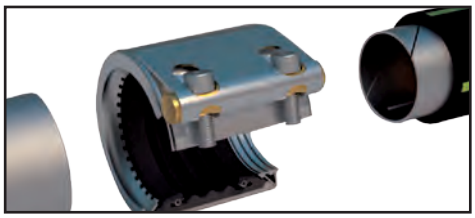


Example for ordering:
STRAUB-REP-FLEX 460mm,
EPDM/SS Overall length 200,
ND 40, Ø 46-53mm

STRAUB COMBI-GRIP/PLAST-GRIP

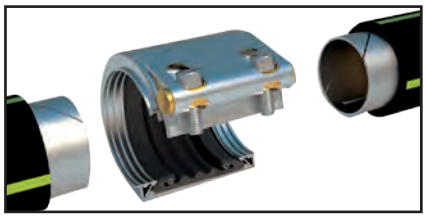
Practical for Transitions

The *STRAUB-COMBI-GRIP* ensures a perfect connection at transitions between plastic and metal pipes by compensating for different outside diameters. The advanced technology and high-specification manufacture ensure increased safety and reliability wherever this coupling is used.



Universal for plastic pipe

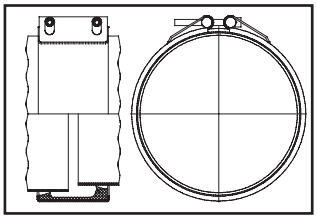
The *STRAUB-PLAST-GRIP* is the ideal combination for thick- and thin-walled plastic pipes. It is used for gas and water supply applications, for industrial pipeline constructions, suction and pressure lines.

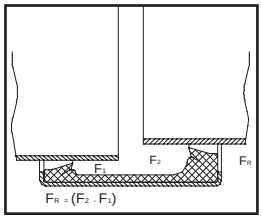


STRAUB STEP-FLEX

The pipe connection for different pipe diameters

STRAUB STEP-FLEX overcomes large diameter differences from 10 to 30 mm. In order to protect the sealing sleeve, a stainless steel strip insert is included.





DIMENSIONS AND MINIMUM PIPE WALL THICKNESS

1 mm = .03937 in

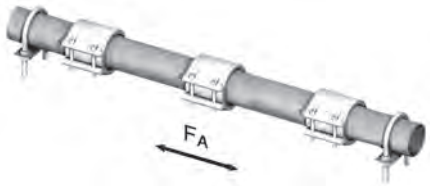
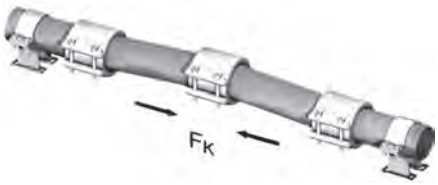
Pipe Diameter		Pipe OD		Minimum Wall Thickness	
IPS	Metric	IPS	Metric	Stainless Steel STRAUB-GRIP-L & METAL-GRIP	Copper-Nickel CuNi Class 200 STRAUB-GRIP-L
(Nominal)	(DIN Std.)	inch	mm	mm	in/mm
¾	20	1.050	26.9	1.5	.04/1.02
	25	1.180	30.0	1.5	
1	25	1.325	33.7	1.5	.05/1.27
	32	1.495	38.0	1.5	
1¼	32	1.670	42.4	1.5	.05/1.27
	40	1.750	44.5	1.5	
1½	40	1.900	48.3	1.5	.05/1.27
	50	2.125	54.0	1.5	
	50	**2.245**	**57.0**	**1.5**	
2	50	2.375	60.3	1.5	.06/1.52
	65	**2.625**	**66.6**	**2.0**	
	65	2.756	70.0	2.0	
2½	65	2.875	73.0	2.0	.07/1.78
	65	3.000	76.1	2.0	
	65	**3.125**	**79.4**	**2.0**	
	80	3.305	84.0	2.0	
3	80	3.500	88.9	2.0	.08/2.03
3½	80	3.960	100.6	2.0	.08/2.03
	90	**4.000**	**101.6**	**2.0**	
	100	4.095	104.0	2.0	
	100	**4.125**	**104.8**	**2.0**	
	100	4.250	108.0	2.0	
4	100	4.500	114.3	2.0	.09/2.29
	100	5.000	127.0	2.3	
	125	**5.080**	**129.0**	**2.3**	
	125	5.125	130.2	2.3	
			131.0*	**3.0**	
	125	5.235	133.0	2.3	
5	125	5.500	139.7	2.3	.10/2.54
	125	5.565	141.3	2.3	
	150	**6.065**	**154.0**	**2.3**	
			155.6*	2.5	
	150	**6.260**	**159.0**	**2.3**	
6	150	6.625	168.3	2.3	.12/3.05
	200	**7.625**	**193.7**	**3.0**	
			206.4		
8	200	8.625	219.1	3.0	.15/3.81
Minimum Wall Data Below For STRAUB-GRIP-L Only *					
	225	**9.625**	**244.5**	**3.0**	
	250	**10.510**	**267.0**	**3.0**	
10	250	10.750	273.0	3.0	.19/4.82
			306.0	**3.0**	
12	300	12.750	323.9	3.0	.22/5.50
14	350	14.000	355.6	3.0	.24/6.10
16	400	16.000	406.4	3.0	.27/6.86
18	450	18.000	457.2	3.0	.30/7.62
20	500	20.000	508.0	3.0	.33/8.38
22	550	22.000	558.8	3.0	.36/9.14
24	600	24.000	609.6	3.0	.40/10.16

standard IPS diameter

*For STRAUB-METAL-GRIP data on these sizes please consult factory.

FORCES TO AVOID

STRAUB PIPE COUPLINGS

Pull-Out Forces	Axial Force (F_A)  OK for STRAUB-GRIP Type. Not resisted by STRAUB-FLEX/OPEN-FLEX
Sheer Loads* **(consult factory for specific data)**	Weight (F_R)  Not resisted by STRAUB-FLEX or STRAUB-GRIP
Knee	Buckling (F_K)  Not resisted by STRAUB-FLEX or STRAUB-GRIP. Pipes must be properly guided.

*Please consult the factory or an authorized STRAUB Distributor for any installation or application questions.

COUPLING/PIPE COMPATIBILITY:

Pipe Materials	Stiffening Ring	STRAUB-METAL GRIP/ STRAUB-GRIP-L	STRAUB-FLEX/STRAUB-OPEN-FLEX	STRAUB-COMBI GRIP/ PLASTI GRIP	Remarks
Steel, Stainless Steel	-	Yes	Yes	Yes	Straub flex must be properly anchored
HDPE, PP, Noryl	Required	-	Yes	Yes	For STRAUB-FLEX pipes must be properly anchored
PVC, ABS, CPVC, C900	-	Yes	Yes	Yes	Stiffening Ring required for temps above 105°F
CFK, CRP, FRP, GRP (Centrifugal wound pipes)	-	-	Yes	-	Seal pipe surface at the cutting edge
Asbestos cement	-	-	Yes	-	
Concrete, CPP	-	-	Yes	-	Equalize rough surface with coating or filler
Cast (ductile, grey)	-	Yes	Yes	Yes	
Glass, Ceramic	-	-	Yes		
Copper-Nickel	-	Yes	Yes	Yes	Soft Copper with Stiffening Ring only
Aluminum	-	Yes	Yes	Yes	

INSTALLATION INFORMATION

STRAUB PIPE COUPLINGS
INSTALLATION AND REMOVAL INSTRUCTIONS

INSTALLATION

Do not disassemble coupling.
Coupling comes ready to install.
Cut pipes to desired lengths.
Clean and de-burr pipe ends.
Pipes must be properly supported.
Center coupling over gap between pipe ends.
Do not exceed maximum allowed gap between pipe ends.
Using a torque wrench, tighten bolts to torque value printed on coupling.
Ensure that all bolts have been correctly torqued.

REMOVAL

Make sure there is no pressure or product in the system.
Loosen bolts. Do not remove bolts completely.
Carefully pry up and tap casing to release grip ring and gasket from pipe surface.
Slide coupling to side for removal.

CAUTION

Do not attempt to move coupling over pipe after tightening.
After coupling has been correctly installed, do not re-torque.
Do not hang weight of pipe in coupling.
Insure that pipes are properly supported.
STRAUB-FLEX Type couplings require anchored pipes.
STRAUB-FLEX Type couplings are not pull out resistant.

IMPORTANT APPLICATION INFORMATION

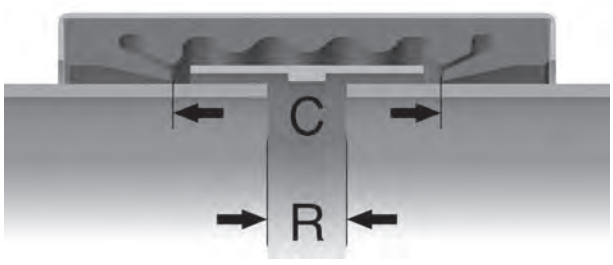
- A strip insert is required for vacuum service or for external pressure. See Column 6 for maximum gap requirements.
- STRAUB couplings are assembled with an internal silicone lubricant, special order when silicone-free product is required.
- STRAUB couplings are not designed to accommodate shear loading, or rotational (torsional) pipe movement. The weight of the pipe and contents must be supported. Only “STRAUB-GRIP” type couplings provide axial restraint.
- STRAUB-FLEX type couplings “DO NOT PROVIDE FOR AXIAL TYPE RESTRAINT”. When using STRAUB-FLEX type couplings, pipes must be properly anchored and supported.
- All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

CONDUCTIVITY CLIPS

STRAUB-GRIP type couplings are conductive by design. STRAUB-FLEX type couplings require the use of STRAUB Conductivity Clips to insure electric current continuity between pipes. Conductivity Clips are not standard and must be ordered separately.

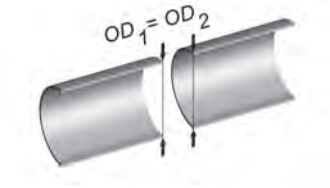
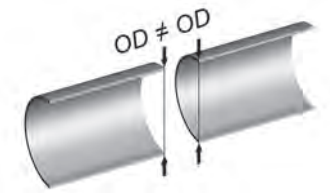
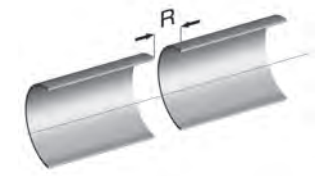
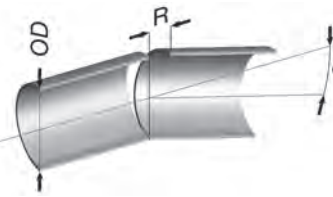
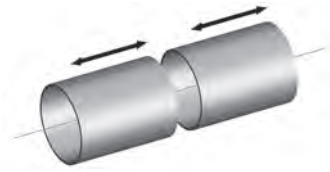
STRIP INSERTS

Strip inserts need only be used if required. Strip inserts protect the sealing sleeve against mechanical or chemical damage in the pipe gap area. Strip inserts are required when the distance between pipe ends is excessive or when axial movement is combined with angular deflection or axial "misalignment". The installation can be pre-fitted for all pipe coupling types. Strip inserts are also required for vacuum service or when aggressive media may be expected to degrade the rubber gasket. Selection of insert material to be dictated by the medium.
“T” type inserts (shown) also available for special applications.



All STRAUB couplings require the correct use of a torque wrench for a safe and proper installation. STRAUB couplings must be torqued to the specified value as printed on each individual coupling. Failure to do so can result in injury or death.

FITTING TOLERANCES

1		**Clamping Range** Connecting of two pipes with same outside diameter.
2		**Different Diameters** Connecting of two pipes with different outside diameter.
3		**Setting Gap Between Pipe Ends R** Connecting of two pipes with or without setting gap [R].
4		**Angular Deflection** α Setting gap between pipe ends through angular deflection. Maximum angular deflection (dynamic and static).
5		**Axial Movement** Δl STRAUB-FLEX/OPEN-FLEX couplings are pipe connectors and expansion joints combined into one unit.
6		**Axial Misalignment** Connecting of two pipes with axial misalignment. Maximum allowed 1% of outside diameter (max. 3 mm).

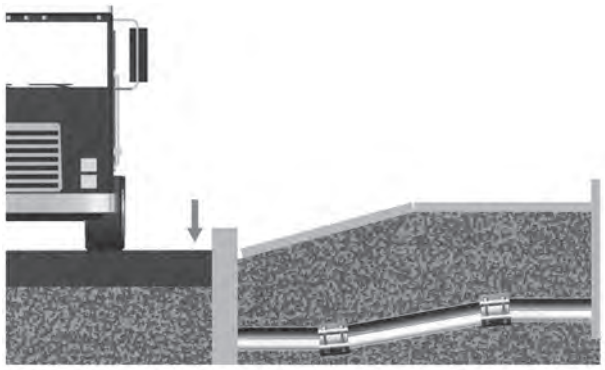
----> For Approximate values see chart on the next page

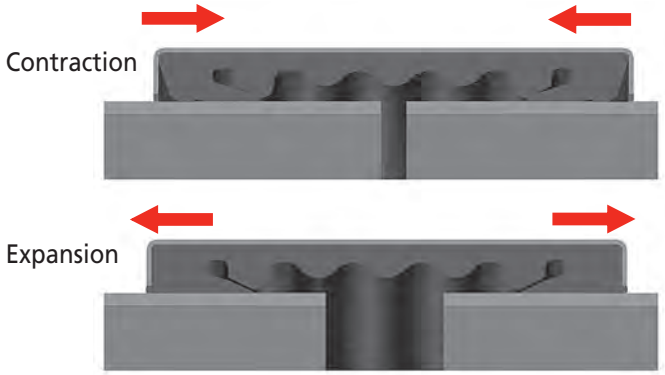
FITTING TOLERANCES

Approximate Values for fitting tolerances.

1 mm = .03937 in

STRAUB Type		Pipe OD	1 Clamping range per OD	2 Different diameters	3 Setting gap between pipe ends R	
					without Strip insert	with Strip insert
		OD-Range mm	+/- mm / %	mm / %	mm	mm
STRAUB-METAL-GRIP		33.7 - 54.0	0.5 mm	2 mm	5	15
		57.0 - 88.9	1.0%	2 mm	10	25
		104.0 - 114.3	1.0%	2%	10	25
		133.0/139.7/159.0/168.3	1.0%	2%	15	30
		129.0/154.0/219.1/273.0	1.0%	2%	15	35
		323.9 - 609.6	1.0%	6 mm	15	35
STRAUB-GRIP-L		26.9 - 33.7	1.0%	2 mm	5	5
		38.0 - 48.3	1.0%	2 mm	5	10
		54.0 - 60.3/84.0	1.0%	2 mm	10	15
		73.0/76.1/88.9	1.0%	2 mm	10	25
		100.6 - 104.8	1,0%	2%	10	25
		108.0/114.3	1.0%	2%	10	25
		154.0	1.0%	2%	10	30
		127.0 - 141.3/159.0 - 273.0	1.0%	2%	10	35
		304.0-609.8	1.0%	6 mm	10	35
STRAUB-FLEX 1	STRAUB-OPEN-FLEX 1	48.3 - 60.3	0.5%	2	5	15
		76.1 - 88.9	1.0%	2	5	25
		100.6 - 114.3	1.0%	2%	5	25
		127.0 - 168.3	1.0%	2%	5	35
STRAUB-FLEX 2	STRAUB-OPEN-FLEX 2	180.0 - 300.0	1.0%	2%	10	35
		301.0 - 1219.2	3 mm	6 mm	10	35
STRAUB-FLEX 3		558.8 - 2032.0	3 mm	6 mm	15	60
STRAUB-OPEN-FLEX 3		558.8 - 1219.2	3 mm	6 mm	15	60





4 Angular Deflection		
Outside Diameter OD mm		Degree
GRIP	FLEX/OPEN-FLEX	
≤ 60.3mm	≤ 60.3mm	5
60.3 mm - 219. 1 mm	60.3 mm - 219. 1 mm	4
≥ 219.1mm	≥ 219.1mm	2

5 Max. Axial Movement	
STRAUB-Type	mm/in
FLEX 1/OPEN-FLEX 1	5 mm/.2"
FLEX 2/OPEN-FLEX 2	10 mm/.4"
FLEX 3/OPEN-FLEX 3	15mm/.6"
FLEX 3.5/OPEN-FLEX 3.5	15mm
FLEX 4/OPEN-FLEX 4	20mm/.8"

INSTALLATION TIMES

INSTALLATION TIMES AND DIMENSION COMPARISON

The installation time includes:

- Marking of half the coupling width on both pipe ends.
- Fitting the coupling over pipe ends and correct alignment.
- Tightening the bolts with a torque wrench.

Nominal Pipe Size		Pipe O.D.		Fitting Time Per Coupling
IPS	Metric	IPS	Metric	
Nominal	DIN Std.	Inch	mm	min
0.75	20	1.050	26.7	2
-	25	1.180	30.0	2
1.00	25	1.325	33.7	2
-	32	1.495	38.0	2
1.25	32	1.670	42.4	2
-	40	1.750	44.5	2
1.50	40	1.900	48.3	2
-	50	2.125	54.0	3
-	50	2.245	57.0	3
2.00	50	2.375	60.3	3
	65	2.625	66.6	4
2.50	65	2.875	73.0	4
-	65	(3.000)	76.1	4
-	65	3.125	79.5	4
-	80	3.305	84.0	4
3.00	80	3.500	88.9	4
	80	3.960	100.6	5
3 1/2	90	(4.000)	101.6	5
-	100	4.095	104.0	5
-	100	4.125	104.8	5
-	100	4.250	108.0	5
4.00	100	4.500	114.3	5
-	100	5.000	127.0	6
-	125	5.080	129.0	6
-	125	5.125	130.2	6
-	125	5.235	133.0	6
5	125	(5.500)	139.7	6
-	125	5.565	141.3	6
-	150	6.065	154.0	7
-	150	6.260	159.0	7
6	150	6.625	168.3	7
8	200	8.625	219.1	9
-	225	9.625	244.5	10
-	250	10.510	267.0	10
10	250	10.750	273.0	10
12	300	12.750	323.9	12
14	350	14.000	355.6	12
16	400	16.000	406.4	12
18	450	18.000	457.2	12
20	500	20.000	508.0	12
22	550	22.000	558.8	12
24	600	24.000	609.6	12

standard IPS diameter

STRAUB PRODUCTS

STRAUB-METAL-GRIP

STRAUB-METAL-GRIP
FIRE-FENCE

STRAUB-ECO-GRIP

STRAUB-GRIP-L

STRAUB-GRIP-L
FIRE-FENCE

STRAUB-COMBI-GRIP

STRAUB-PLAST-GRIP

STRAUB-PLAST-PRO

STRAUB-STEP-GRIP

STRAUB-FLEX

STRAUB-OPEN-FLEX

STRAUB-OPEN-FLEX GT

STRAUB-CLAMP SCE

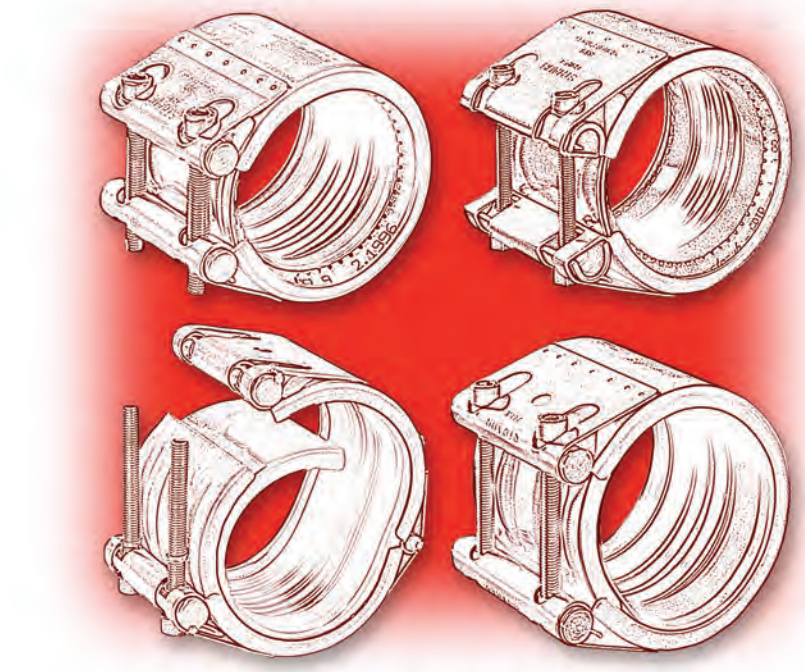
STRAUB-CLAMP SCZ

STRAUB-
DISMANTLING JOINTS

STRAUB-
FLANGE ADAPTER

straub®

the right connection



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