



RIGID COUPLINGS AND SPARES

DETAILED ENGINEERING CATALOGUE 2026

Flange sleeve split clamp and custom couplings
Shaft interfaces | Selection | Spare parts
Materials inspection and service

DRIVING INDUSTRY FORWARD

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RIGID COUPLING PRODUCT RANGE

STT rigid couplings join aligned shafts through a solid mechanical connection. This industrial range covers keyed flange, sleeve, split-clamp and engineered adapter arrangements with serial-specific spare parts.

PRODUCT FAMILIES

Code	Construction	Typical application
RC-FL	Rigid flange pair	Gearbox and machinery shaft connection
RC-SL	Solid sleeve	Compact keyed aligned-shaft drive
RC-SC	Split clamp	Radial assembly and service access
RC-AD	Rigid adapter	Shaft-to-flange or different interfaces
RC-CU	Custom replacement	Legacy and customer-drawing units

SELECTION BASIS

Rigid couplings provide no designed accommodation for angular, parallel or axial misalignment. Confirm shaft alignment, bearing arrangement and thermal growth before choosing this connection.

SUPPLY BASIS

Family codes define the quotation range. Bore sizes, envelope dimensions, materials, torque, RPM and stock availability are confirmed per approved unit drawing. No independently certified STT performance table is released in this issue.



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BORE SCHEDULE AND IDENTIFICATION

The following preferred enquiry diameters organize quotation and drawing requests. They are shaft-size identifiers, not guaranteed model capacity or a published maximum-bore range.

PREFERRED METRIC ENQUIRY SCHEDULE

Band	Shaft diameters in mm	Review focus
Compact	20, 25, 30, 35, 40	Fits, keyways and assembly space
Industrial	45, 50, 55, 60, 65, 70, 75, 80	Hub and shaft torque path
Heavy drive	90, 100, 110, 120, 125, 140	Peak loads and flange fasteners
Large engineered	150, 160, 180, 200	Application and full design review

UNEQUAL AND SPECIAL BORES

Different shaft diameters may be specified on each half. Imperial, tapered, splined and other metric diameters require their exact interface details. Final allowable bores depend on material, hub section, flange geometry, keyway and duty.

EXAMPLE IDENTIFIER

RC-FL-D60-D75-K | two flange halves | 60 mm and 75 mm keyed bores. The identifier alone does not define bolt pattern, envelope, torque capacity or speed limit.



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COMPACT AND INDUSTRIAL COUPLING SIZE CHART

Proposed STT size codes for equal-bore assemblies. The number identifies the reference shaft diameter in mm; it is not a released load rating or envelope size.

PROPOSED SIZE SCHEDULE

Size code	Equal bores mm	Torque rating	Maximum RPM
RC-020	20	Engineering review	Engineering review
RC-025	25	Engineering review	Engineering review
RC-030	30	Engineering review	Engineering review
RC-035	35	Engineering review	Engineering review
RC-040	40	Engineering review	Engineering review
RC-045	45	Engineering review	Engineering review
RC-050	50	Engineering review	Engineering review
RC-055	55	Engineering review	Engineering review
RC-060	60	Engineering review	Engineering review
RC-065	65	Engineering review	Engineering review
RC-070	70	Engineering review	Engineering review
RC-075	75	Engineering review	Engineering review
RC-080	80	Engineering review	Engineering review

ORDERING AND RELEASE

Specify construction and both shaft bores, for example RC-FL-D60-D75-K. Size codes are proposed enquiry identifiers. Flange and hub dimensions, bolt pattern, bore fits, keyways, torque and RPM require the approved drawing; the chart does not establish interchangeability.



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HEAVY AND LARGE ENGINEERED COUPLING SIZE CHART

Proposed STT size codes for equal-bore assemblies. The number identifies the reference shaft diameter in mm; it is not a released load rating or envelope size.

PROPOSED SIZE SCHEDULE

Size code	Equal bores mm	Torque rating	Maximum RPM
RC-090	90	Engineering review	Engineering review
RC-100	100	Engineering review	Engineering review
RC-110	110	Engineering review	Engineering review
RC-120	120	Engineering review	Engineering review
RC-125	125	Engineering review	Engineering review
RC-140	140	Engineering review	Engineering review
RC-150	150	Engineering review	Engineering review
RC-160	160	Engineering review	Engineering review
RC-180	180	Engineering review	Engineering review
RC-200	200	Engineering review	Engineering review

ORDERING AND RELEASE

Specify construction and both shaft bores, for example RC-FL-D60-D75-K. Size codes are proposed enquiry identifiers. Flange and hub dimensions, bolt pattern, bore fits, keyways, torque and RPM require the approved drawing; the chart does not establish interchangeability.



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LOVEJOY FRR TORQUE AND SPEED REFERENCE

Published Lovejoy/Sier-Bath FRR rigid-rigid values, Gear2010 catalogue, printed page G-58. These are manufacturer benchmark ratings, not calculated or certified STT ratings.

PUBLISHED FRR PERFORMANCE

FRR size	Torque N.m	RPM unbal.	RPM balanced	Max bore mm*
1	850	6,000	9,000	56
1.5	2,140	5,500	8,250	76
2	3,560	5,000	7,500	95
2.5	6,410	4,400	6,600	114
3	10,700	4,000	6,000	134
3.5	17,100	3,500	5,250	150
4	24,900	3,000	4,500	176
4.5	34,200	2,700	4,050	202
5	49,100	2,500	3,750	230
5.5	64,800	2,200	3,300	260
6	84,700	2,100	3,150	285
7	113,900	2,000	3,000	320

RATING CONDITIONS

Use the exact FRR design and approved mounting conditions. The balanced limit requires the appropriate balanced assembly; it is not the default operating limit. Rated torque, bore, shaft interface, duty and speed must be checked together.

BORE DATA CAUTION

*Metric maximum bores are reproduced as printed. They do not consistently equal exact conversions of the adjacent inch bores. Confirm the required bore and keyway directly with Lovejoy before selection or manufacture. No mapping to STT RC-020 through RC-200 is established.

REFERENCE SOURCE

Lovejoy Gear2010.pdf, G-58. <https://www.lovejoy-inc.com/wp-content/uploads/2024/02/Gear2010.pdf> | Accessed 30 September 2026. Legacy manufacturer reference; confirm current product data before purchase.



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LOVEJOY FRR DIMENSIONAL REFERENCE

Derived metric envelope dimensions from the published inch values on Lovejoy Gear2010 printed page G-59.
Conversion: 1 inch = 25.4 mm; results rounded to 0.1 mm.

CONVERTED ENVELOPE DIMENSIONS IN MM

FRR size	OAL	LTB	BSE	Flange FD	Hub HD
1	84.1	39.6	4.8	115.8	77.7
1.5	98.6	46.7	4.8	152.4	100.8
2	120.6	57.9	4.8	177.8	123.4
2.5	152.4	73.9	4.8	212.9	148.3
3	177.8	86.6	4.8	239.8	173.7
3.5	206.5	100.8	4.8	279.4	200.9
4	234.9	112.8	9.7	317.5	234.9
4.5	265.2	127.8	9.7	346.2	263.7
5	298.4	144.5	9.7	388.9	293.6
5.5	322.3	156.5	9.7	425.4	323.1
6	378.0	184.1	12.7	457.2	355.6
7	457.2	220.7	16.0	527.0	400.0

DIMENSION DEFINITIONS

OAL: overall length; LTB: length through bore of one hub; BSE: shaft-end separation; FD: flange outside diameter; HD: hub outside diameter. These envelope values do not constitute a manufacturing drawing.

MISSING PRODUCTION DETAILS

Steel grade, bolt PCD, fastener specifications and full manufacturing geometry require the exact manufacturer drawing or an independently released STT design.

SPARE PARTS REFERENCE

Lovejoy instruction Figure 1 lists rigid hub, gasket, hex-head cap screw and PT nut. Quantities and gasket use follow the exact assembly. Do not substitute parts by nominal size.

SOURCES

Lovejoy Gear2010.pdf, G-59; RigidCouplinginstructions.pdf, Figure 1. Both published on lovejoy-inc.com.



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FLANGE COUPLING ASSEMBLY AND SPARES

A representative keyed rigid flange assembly uses two hub-flange halves and an engineered fastener joint. The item numbers below form the STT spare-parts enquiry structure.

REPRESENTATIVE PARTS SCHEDULE

Item	Part / suffix	Quantity per assembly
01	Hub-flange A / HFA	1
02	Hub-flange B / HFB	1
03	Flange fastener set / FST	1 matched set; bolt count per drawing
04	Key A / KYA	1 if keyed interface specified
05	Key B / KYB	1 if keyed interface specified
06	Retention hardware / RET	Only if released design includes it
07	Register / spacer / ADP	Only if released design includes it

FASTENER SET CONTENT

The released BOM specifies bolt count, diameter, length, thread, material/strength grade, head form and the required nuts, washers or locking components. Fitted bolts and clearance bolts are distinct designs; substitution requires review.

TORQUE TRANSMISSION

The approved joint specifies whether torque passes through bolt shear, clamped-face friction or another designed feature. A locating pilot is not automatically a torque-transmitting feature.

REPLACEMENT HALVES

A new flange half must match the existing register, face, bolt pattern and datum alignment. Review wear, fretting and distortion on the retained half; a new pair may be required.



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SLEEVE AND SPLIT CLAMP SPARE PARTS

The sleeve and split-clamp families use different mounting and torque paths. Spare-part quantities and reuse rules follow the serial-specific assembly drawing.

SPARE PARTS BY CONSTRUCTION

Part	RC-SL solid sleeve	RC-SC split clamp
Main body	1 sleeve	1 matched split-body set
Keys	Per shaft interface	Only if keyed design specified
Clamp screws	Not used unless designed	1 matched set; count per drawing
Retention screws	Only if designed	Only if designed
Washers / locking parts	Only if designed	As listed on BOM
Locating pins	Only if designed	Only if designed

SPLIT HALVES

Supply split bodies as a matched set unless a replacement half is dimensionally qualified against the retained half. Preserve matched marks, bore orientation and clamp gaps. Do not mix halves by apparent size alone.

SOLID SLEEVE ACCESS

A solid sleeve generally requires axial access for installation or removal. Confirm shaft spacing, shoulder clearance and removal method before ordering.

KEYLESS DESIGNS

A clamping coupling may be designed without keys. Its capacity depends on clamping preload, shaft fit, surface condition, friction and engagement; keyed-coupling capacities do not transfer to it.



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DIMENSIONAL DRAWING SCHEDULE

All manufacturing dimensions and tolerances are issued on an approved drawing. The table identifies the dimensional information needed for replacement, quotation and inspection.

GENERAL ARRANGEMENT FIELDS

Symbol / feature	Required definition
dA / dB	Shaft bores and fit classes
DA / DB	Hub outside diameters
DF	Flange outside diameter
LA / LB	Bore engagement on each shaft
L / BSE	Overall assembly length / shaft-end separation
PCD / N	Bolt pitch circle / bolt quantity
Bolt holes	Hole diameter, fit and clocking
Pilot	Register diameter, depth and fit
Keyways / splines	Complete size, tolerance and axial position
Runout / face	Bore datum, concentricity, squareness and finish

MEASUREMENT PROCEDURE

Use bore and mounting datums; record both shaft interfaces and both flange faces. Note whether bolts are fitted, clearance or threaded into a half. Include drawings, serial marks and photographs rather than dimensions estimated from photographs.



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MATERIALS AND MANUFACTURING CONTROLS

Material, heat treatment and machining requirements depend on the coupling torque path, fatigue duty, shaft fits and operating environment.

PRODUCTION CONTROLS

Feature	Release requirement
Body material	Named steel or other approved grade and supply condition
Heat treatment	Route, hardness and inspection if specified
Bore / keyway	Fit, finish, straightness and datum relationship
Flange faces	Flatness, parallelism and seating condition
Register	Fit, concentricity and depth
Bolt pattern	Position, size, orientation and thread engagement
Fasteners	Exact design specification and traceability
Protection	Coating and corrosion protection compatible with fits

INSPECTION PACKAGE

Record material identity, critical dimensions, keyway/spline, bore-to-flange runout, assembly fit and hardness where specified. NDT, balance checks and proof testing are agreed against the application.

JOINT SURFACES

Face coatings, oil, fretting debris and changes in surface finish can affect a friction joint. Preserve the specified assembly condition and use the approved fastener preload procedure.



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TORQUE SPEED AND ALIGNMENT SELECTION

A rigid coupling rating must consider the complete assembly, including hubs, shaft interfaces, keys, fasteners and joint surfaces.

SELECTION INPUTS

Input	Information required
Power / speed	Driver kW and normal/maximum RPM
Torque duty	Running, startup, peak, shock and reversing loads
Shafts	Diameters, fits, keys/splines and engagement
Alignment	Angular and parallel alignment plus axial position
Machine layout	Bearing locations, support stiffness and shaft movement
Environment	Temperature, corrosion, water and dust

CALCULATION EXAMPLE

At 30 kW and 1,500 rpm, running torque $T = 9550 \times P / n = 191 \text{ N.m}$. If an illustrative duty factor of 2.0 is chosen, preliminary design torque is 382 N.m. The factor is an example only; the application determines the correct running, peak and fatigue load cases.

RELEASE CHECKS

Verify key shear and bearing pressure, hub and flange stress, shaft-interface capacity, bolt loads or friction-joint capacity, fatigue and rotational integrity. Maximum RPM and balancing requirements are stated for the exact assembly.

ALIGNMENT AND THERMAL GROWTH

Align machines to the approved installation limits. Do not draw misaligned shafts together using coupling bolts. Review temperature-driven axial movement and bearing constraints before assembly.



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INSTALLATION INSPECTION AND MAINTENANCE

Install and service each unit to its released assembly instruction. Fastener torque, fits, heating limits and alignment tolerances are unit-specific.

SERVICE SEQUENCE

Stage	Work scope
Identify	Match coupling serial, drawing revision and parts list
Inspect	Check shafts, keys, bores, faces, bolts and registers
Fit	Use approved mounting and shaft retention method
Align	Confirm shaft alignment and axial position
Assemble	Apply specified fastener sequence and torque/preload
Guard	Fit appropriate guarding and verify rotating clearance
Commission	Observe vibration, noise, runout and machine temperature
Maintain	Inspect fasteners, fretting, cracks and alignment as scheduled

SERVICE ISOLATION

Isolate and secure the drive before removal, inspection or tightening. Provide lifting support for heavy halves and guard exposed rotating parts before operation.

REPLACEMENT TRIGGERS

Investigate fretting, loosened fasteners, cracked hubs, worn keys, shaft damage, corrosion and persistent vibration. Determine the cause before replacing parts. Damaged or unqualified fasteners are not reused.



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SPARE PARTS ORDERING AND SERVICE KITS

All spares are ordered against the coupling serial number and assembly drawing revision. Part suffixes below are quotation codes; final part numbers are assigned at drawing release.

SERVICE KIT ENQUIRY CODES

Code suffix	Kit content	Application
FST	Flange fastener set	RC-FL / applicable adapters
CST	Clamp screw set	RC-SC
KST	Key set A and B	Keyed units
RET	Retention hardware set	As specified on assembly
BDY	Matched split bodies	RC-SC
ASM	Complete assembly	All families

SPARE-PART EXAMPLE

RC-FL-D60-D75-K-FST | serial STT reference supplied by customer | drawing revision supplied | flange fastener set. Specify whether the order requires the complete bolt/nut/washer set or an individual released item.

REQUIRED IDENTIFICATION

Company and site; coupling serial; original drawing and revision; family and bores; photographs; requested item number; quantity; failure symptoms; operating torque/RPM and delivery requirement.

INTERCHANGE CONTROL

Standard hardware is supplied only to the exact released specification. A matching diameter and thread do not establish the correct grade, fit, length, preload or locking arrangement.



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ENQUIRIES REFERENCES AND ISSUE CONTROL

STT Engineering Solutions provides the catalogue structure for new designs and replacements. Final availability, capacity and manufacture are confirmed in a written quotation and drawing release.

CONTACT

STT Engineering Solutions | Gauteng South Africa | 060 935 6542 | info@stteng.co.za | www.stteng.co.za

NEW ASSEMBLY ENQUIRY

Provide driver power, operating and maximum RPM, driven machine, load cycle, shaft details, bearing layout, shaft-end separation, envelope and environment. Specify the required spare-parts package.

TECHNICAL REFERENCE 1

Ruland Manufacturing, Rigid Shaft Couplings and Two-Piece Split Rigid Couplings. Construction and service concepts only; no Ruland ratings or dimensions are presented as STT ratings.

<https://www.ruland.com/rigid-couplings.html> | <https://www.ruland.com/rigid-couplings/two-piece-rigid-coupling.html>

TECHNICAL REFERENCE 2

Ruland coupling comparison guide, rigid coupling alignment characteristics.

<https://www.ruland.com/media/wysiwyg/PDF/coupling-comparison-guide.pdf>

ENGINEERING STATUS

Preferred bore enquiries and STT family/spare codes are proposed catalogue identifiers. This issue contains no released STT model capacities or production drawings; Lovejoy ratings are separately identified as manufacturer references. Torque and speed ratings, exact dimensions and parts quantities require serial-specific engineering approval.

ISSUE

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