Disc Couplings
DI Style (6-Bolt)
Installation Guide

1.0 INTRODUCTION:

The following document is intended for the explicit use of Lovejoy customers to aid in the installation of Lovejoy power transmission products. The information may be considered privileged and should only be disseminated as an active part of conducting business with Lovejoy, Inc.

Although the coupling may have been properly specified during the design and selection process before the coupling was ordered, operational conditions could possibly have changed prior to installation. Lovejoy, Inc. provides the information and technical support necessary to ensure the appropriate coupling selection was made relative to the product specifications and limitations of Lovejoy's power transmission products. The end user is ultimately responsible for verifying the suitability of the final coupling selection based on the actual service conditions at the time the coupling is installed.

Correct installation and alignment practices will ensure longer coupling life, trouble free operation, and a safer operating environment for the coupling. Please thoroughly review all of the instructions in this document prior to installing this coupling and placing it in operation. Proper safety guidelines and practices should always be followed during every phase of the installation.

This installation document is considered part of the purchased product and should be retained for future reference.

2.0 SAFETY:

Accidents involving rotating equipment may result in loss of life, serious bodily harm, or property damage. The purchaser of this equipment must assure that the equipment is properly assembled, installed, safeguarded, operated, and maintained. This equipment should never be operated at, or subjected to, conditions that exceed manufacturer's specifications.

Consult all applicable Federal, State and local laws and regulations covering the safe operation and maintenance of equipment, including, without limitation, the USDOL-OSHA "Lockout / Tag-out" procedure set forth in 29 CFR 1910.147.

Because of the possible danger to persons or property from accidents which may result from the improper use or unapproved modifications of the product, this product must be installed, maintained and operated in accordance with the procedures, standards, and engineering specifications specified in the product literature. To assure safe operation, this product should be inspected in accordance with the instructions described in this document. Proper guards and any suitable safety equipment or procedures as may be necessary, or as may be specified in safety codes, should be installed by the user. Safety equipment, coupling guards, and shields are not provided by, nor are they the responsibility of Lovejoy, Inc.

Symbols and text format used in this document may contain safety information and will appear similar to the following:

Warning! *This symbol indicates safety measures which must be observed to avoid personal injury.*

CAUTION! This symbol indicates safety measures which must be observed to avoid damage to coupling.

3.0 PRODUCT INSPECTION:

Prior to installation, the coupling should be examined for signs of damage that may have occurred as a result of shipping or handling. Refer to the following chart (Table-1) to ensure all the ordered parts were included with the shipment.

Note: Standard DI Disc Coupling spacers are shipped assembled.

Table 1 - Components (DI-6 Version)

Size	Hubs	Hub Bolts	Spacer Assembly				
			Spacer	Guard Rings	Disc Packs	Bolts	Lock Nuts
DI 90-6	2	6	1	2	2	12	12
DI 110-6	2	6	1	2	2	12	12
DI 132-6	2	6	1	2	2	12	12
DI 158-6	2	6	1	2	2	12	12
DI 185-6	2	6	1	2	2	12	12
DI 202-6	2	6	1	2	2	12	12
DI 228-6	2	6	1	2	2	12	12
DI 255-6	2	6	1	2	2	12	12
DI 278-6	2	6	1	2	2	12	12
DI 302-6	2	6	1	2	2	12	12
DI 325-6	2	12	1	2	2	12	12
DI 345-6	2	12	1	2	2	12	12
DI 380-6	2	12	1	2	2	12	12
DI 410-6	2	12	1	2	2	12	12
DI 440-6	2	12	1	2	2	12	12

For maximum protection, the coupling and all components should be stored in the original packaging. All parts should be measured prior to installation to ensure correctness of parts to meet the application requirements; such as the hub bore diameter, shaft diameter, shaft separation, bolt lengths, key sizes, etc.

Warning! *Before performing the coupling installation, make sure the machinery is made safe. Disconnect and lock out all power to the equipment. No part of the installation should be performed on moving, non secure, or unstable equipment.*

CAUTION! Lovejoy manufactured the coupling interface based on the equipment and shaft data supplied by the purchaser. Lovejoy is not responsible for inaccurate or incomplete information supplied by the purchaser.

It is the purchasers' responsibility to assure that the interface connections between the coupling and the connected equipment are capable of handling the anticipated loads.

4.0 REQUIRED TOOLS:

- Measuring tools (Vernier Calipers, Gap micrometer, etc.)
- Calibrated Torque Wrench
- Sockets and appropriate open end wrenches
- Alignment Equipment
- Appropriate hoist or lifting equipment

5.0 COUPLING AND COMPONENT PREPARATION:

5.1 Prior to installation, all exposed surfaces of the coupling and components, including hubs, disc packs, spacer, guard rings, and hardware should be thoroughly cleaned to remove any protective coatings normally applied by Lovejoy at the factory. These coatings are applied as corrosion protection for the coupling surfaces during shipping. All coupling parts, equipment components, shafts, and keyways must be clean and free of any foreign materials prior to attempting assembly or installation. A clean cloth dampened with a nonflammable solvent should be sufficient for this cleaning.

5.2 All sleeves, seals, hub bores, shafts, keys, and keyways must be checked for raised metal, nicks, burrs, dents, gouges, etc., and should be dressed or repaired accordingly prior to installation.

5.2.1 Prior to removing any existing coupling, establish and record the Distance Between Shaft Ends (BSE) between the driver and driven shafts. Compare this value with the BSE dimension for the Disc Coupling based on the BSE of the coupling as purchased.

5.2.2 Once all necessary measurements have been taken and all components are confirmed to be correct, remove any existing coupling and dress the shafts of the driver and driven equipment.

5.2.3 If the final shaft separation is the same as the specified BSE for the Lovejoy Disc coupling, then the hubs can be mounted flush with the ends of the driver and driven shafts.

5.2.4 If the final shaft separation is different than the specified BSE of the Lovejoy Disc coupling, then the hubs must be mounted on the driver and driven shafts so that the distance between the hub flanges match the BSE dimension of the coupling as purchased. If these values are different, please contact your coupling supplier.

CAUTION! *The amount of hub engagement on the shaft should be 80% of the shaft diameter or greater for an interference fit.*

5.3 Lovejoy machines bores in all Lovejoy disc coupling hubs with '**inch**' dimensioned straight bores and keyways to meet the industry accepted **ANSI/AGMA 9002-B04** Standards' tolerance for an interference, or shrink fit bore unless otherwise specified. Tapered and spline bores typically require special consideration.

5.4 Lovejoy machines bores in all Lovejoy disc coupling hubs with '**metric**' dimensioned straight bores and keyways to meet the industry accepted **ANSI/AGMA 9112-A04** Standards' tolerance for an interference, or shrink fit bore unless otherwise specified. Tapered and spline bores typically require special consideration.

5.5 For all Lovejoy disc coupling hubs with **taper bores** and **taper bores with keyways**, Lovejoy manufactures these hubs with bores using tolerances and specifications as supplied by the customer. Taper bores will be tested with plug gauges, usually supplied by the customer or included in the cost of the coupling.

6.0 HUB INSTALLATION (INTERFERENCE FIT):

6.1 Prior to installing any coupling, it is important to make sure the equipment where the coupling is being installed is made safe and that no part of this installation will be done on non-secured, unsafe, or moving equipment. Ideally, the equipment should be disconnected from any power source using the Lockout/Tag-out procedures defined by OSHA. Consult with local, State, and Federal laws and regulations covering safe operation and maintenance of equipment.

Warning! *When installing hubs, consult with all applicable Federal, State, and local laws and regulations covering the safe operation and maintenance of equipment, including, without limitation, the USDOL-OSHA "Lockout/Tag-out" procedure set forth in 29 CFR 1910.147.*

6.1 Lovejoy disc coupling hubs are shipped with Interference Fit bores unless otherwise specified. Prior to installing the coupling, measure the shaft diameters and the hub bores to ensure proper fits. With interference fits, the hub bore diameters should be slightly less than the shaft diameters and the hubs will need to be heated prior to mounting on the shafts.

Note, the Engineering Data section of the *Lovejoy Power Transmission Products Catalog* on-line contains the actual bore and keyway sizes supplied by Lovejoy for specific shaft sizes. Please visit the Lovejoy website at: http://www.lovejoy-inc.com to view this documentation.

6.2 Lovejoy DI style disc couplings are typically installed with the equipment already in place. Please check alignment, preferably using optical or laser aligning equipment. The distance between the shaft ends should match the DBFF (Distance Between Flange Faces), or the BSE (Distance between Shaft Ends), for the coupling as ordered. Please note that DI coupling hubs have a female pilot recess and this recessed surface should be mounted flush with the end of the shaft.

6.3 Install the keys in the shaft keyways. The keys should fit snuggly in the keyway with no side to side movement. The keys should be the same length as the hub to maintain dynamic balance and transmit the maximum torque.

6.4 When mounting hubs that have been machined with an interference fit, there should be a slight clearance between the top of the key and the keyway. Without this clearance, as the hub cools, the top of the keyway could apply pressure on the top of the key creating stress that could cause the hub to fail.

6.5 Heat the hubs and slide them on the shafts with the recessed face mounted flush with the end of the shaft. Make sure each hub is uniformly heated to between 350º F and 600º F (177º C to 315º C). The following steps offer suggestions to follow when heating interference fit hubs.

6.5.1 Oil Bath Heating is usually limited to 350º F. (177º C), or some temperature that is less than the flash point of the oil used. Special handling devices are required to support the hub in the oil bath such as tongs, threaded rods or eye-bolts placed in puller holes, etc. The hubs should not rest on the bottom of the oil bath container and must remain in place for a period of time ample to heat the hub all the way through.

⚠ *Warning!*	*If an oil bath is used, the couplings will need to be heated to approximately 350º F (177º C) or more, so the oil must have a flash point above 350º F (177º C).*

6.5.2 Induction Heating can be used as long as the temperature rise in the hub is uniform and controlled.

6.5.3 Oven Heating offers definite advantages over oil bath heating. Parts can be heated to higher temperatures, usually 450º F to 600º F (235º C to 315º C). 600º F is the maximum temperature where the steel hub has not yet started to go through an annealing process and yet can still be handled with heat resistant gloves. When heating the hubs in an oven, place them on a rack and do not rest the hubs on the oven surface. The hubs should remain in the oven for a sufficient period of time to heat the hub all the way through.

6.5.4 Open Flame Heating is typically not recommended. If the hub is being heated with an oxyacetylene, or blow torch, use an excess acetylene mixture. Mark the hub body at the top, center, and bottom along the length of the hub with heat resistant crayons, one with a 350º F (177º C) melt temperature and another with a 450º F (232º C) melt temperature. The hub should be sitting elevated on refractory bricks oriented to allow the flame to flow through the hub. With a "Blue Flame" or "Rosebud" torch, direct the flame towards the hub bore using constant motion to avoid overheating any single area. Once the heat sensitive crayon marks melt, the hub should be ready for mounting.

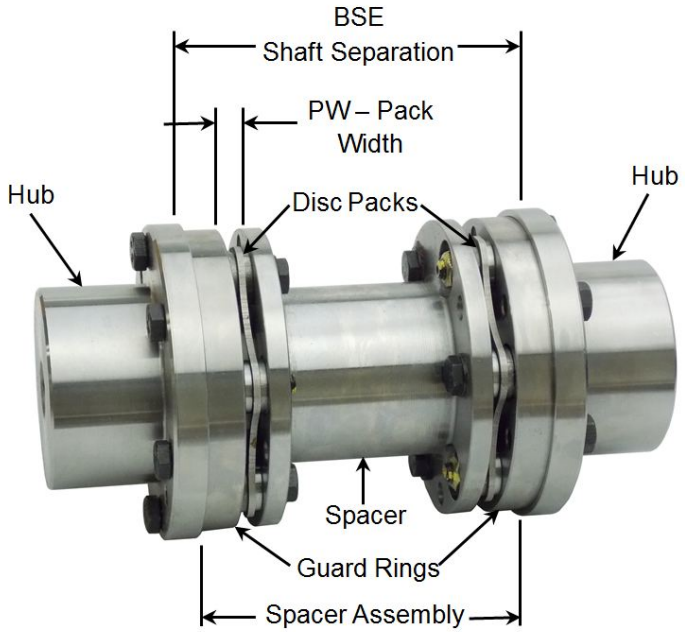
⚠ *Warning!*	*Do not use an open flame in a combustible atmosphere or near combustible materials.*
CAUTION!	Do not "spot" heat the hub in single areas or distortion of the hub could occur.
CAUTION!	Do not exceed 600º F (315º C) during the heating process. Excessive heat can soften, or anneal the hub, reducing the strength of the steel thus affecting the performance characteristics of the hub.
CAUTION!	Use extreme care when handling heated hubs to avoid injury to personnel.
⚠ *Warning!*	*Always allow the hubs to cool to ambient (room) temperature prior to continuing with the installation.*

6.6 If either hub was manufactured with a clearance, or slip fit bore, slide these hubs onto the appropriate shafts. Align the recessed pilot surface on the flanged end of the hub with the end of the shaft and key. These hubs will be held in place with set screws.

7.0 INSTALL THE SPACER ASSEMBLY:

7.1 The hubs must be cooled to the ambient, or room temperature prior to installing the spacer assembly.

7.2 The equipment should be aligned, preferably using an optional alignment procedure such a laser. The allowable misalignment is specified in Table-4. Axial and angular misalignment allowances are listed. The allowable parallel misalignment is a trig function based on the length of the spacer, as measured between the disc packs, **not** the BSE, or shaft separation. The BSE includes the spacer, plus the width of both disc packs and guard rings.



7.3 The spacer assembly for the DI style coupling is assembled at the factory prior to shipping. Some of the larger spacer assemblies may be shipped with shipping bolts and sleeves. These bolts and sleeves serve two purposes. The sleeves are initially used to maintain a specific gap between the spacer and guard ring during shipping and prevent distortion of the disc packs. The bolts may also be used as compression bolts when installing the spacer assembly. Shipping bolts are not provided with all DI couplings. When shipping bolts are used, they are typically provided in coupling sizes DI 185-6 and larger.

7.4 If the coupling was shipped with the red shipping bolts as shown in the photo above**,** remove the bolts and sleeves from both ends of the spacer assembly. **DO NOT discard these bolts**. These bolts will be used as compression bolts to compress the spacer assembly when mounting the assembly between the hubs. These bolts will need to be used when removing the spacer assembly for maintenance or service. **Reinsert the bolts without the sleeves into the same holes** and hand tighten until the head of the bolt comes into contact with the face of the spacer flange.

7.5 If the coupling was shipped without the red shipping bolts and sleeves, as is common with smaller DI couplings, half of the hub mounting bolts can be used to compress the spacer assembly during installation. This requires the use of three bolts in each end of the spacer assembly with the six bolt disc pack design, or four bolts in each end for the eight bolt disc pack design. Place hub mounting bolts in the compression bolt holes as shown in the photo above and on the next page. Hand tighten until the head of the bolts comes into contact with the face of the spacer flange. The sample bolts are red as shown in the photo above.

Caution!	DO NOT discard the shipping bolts. These bolts will be needed to compress the disc packs when installing the spacer assembly and for future servicing of the coupling.

7.6 When positioning the spacer assembly between the hubs, maintain support of the assembly at all times. Use care not to let the assembly drop or impact against the hubs at any time.

7.7 If the coupling has been balanced, care must be taken to ensure the match marks on the hubs and spacer assembly are properly lined up when installing the drop-in spacer assembly.

Caution!	DO NOT compress the disc packs if the hubs being installed are setup for Clearance Fit with set screws. The spacer assembly gap can be set by moving hubs in this configuration.

7.8 Measure the length of the spacer assembly and compare this measurement with the distance between the pilot faces of the hubs. The difference between these two measurements should not exceed the Axial Misalignment value specified in Table-4.

7.9 To compress the disc packs, make sure you placed shipping or hub mounting bolts in the compression bolt holes in both ends of the spacer assembly. Then tighten each of the compression bolts (three on each end) one half turn only. This will compress the disc packs slightly, shortening the overall length of the spacer assembly by one half of the thread pitch per end. Note, each bolt on both ends should be tightened the same amount. If the spacer assembly does not fit between the hubs after tightening all of the bolts, turn each bolt an additional one half turn only. Repeat this as needed until the assembly fits between the hubs. You should not have to tighten the compression bolts more than 1-1/2 turns. If the spacer assembly still does not fit between the hubs, the length of the spacer assembly may not match the equipment shaft separation. Some adjustment in the equipment positioning might be required.

7.10 Carefully position the spacer assembly between the hubs. Rotate the shafts so that the mounting holes in both hubs align with the mounting holes in the spacer assembly. Again, when installing couplings that have been specially balanced, make sure alignment or match marks line up between the hubs and the spacer assembly.

7.11 Insert the hub bolts through the hub flanges on both ends of the coupling. The same holes are used for the hub mounting bolts that are used for compressing the coupling, though accessed from different sides of the guard ring. You will not be able to install hub mounting bolts in holes already being used for compression bolts until the spacer assembly is in place and the compression bolts are removed. Hand tighten these bolts into the tapped holes in the guard rings at both ends of the coupling until the heads of the bolts come into contact with the flange on the hubs. **DO NOT** tighten with a torque wrench at this time. These bolts must be in place to ensure all of the mounting holes line up prior to removing the shipping bolts. If the shipping bolts are removed too soon, the spacer assembly will expand back to the designed length. When this happens, the assembly expands against the hubs and will not be able to rotate independent of the hubs which is necessary when aligning the mounting holes.

7.12 Loosen all of the compression bolts, again one half turn at a time until the pressure on the disc packs is released. The guard rings should seat snuggly in the piloted recess in each hub and should be touching, or firmly pressed against the face of each hub. Remove the compression bolts but do not discard. If hub mounting bolts were used to compress the disc packs, these should be placed in the remaining hub mounting bolt holes. These bolts should be hand tightened until the bolt heads come in contact with the hub flange.

7.14 Using a calibrated torque wrench, tighten the hub bolts on each end of the coupling using the industry standard procedure for tightening the nuts in a star shaped pattern first to 50%, then 75%, then to the final torque specified in Table-3.

7.13 Inspect the disc packs to ensure there is no waviness or gaps between the layers in the disc pack. If the gap between the guard ring and spacer flange does not fall within the 'PW'/High and 'PW'/Low values specified in Table-4, the disc pack will take on a wavy appearance. To correct this, ensure the guard rings on the spacer assembly are fully seated in the recess, or pilot in each hub. If the hubs are mounted using external shaft locking devices, loosen the SLD's to relieve the stress that is causing the waviness. If waviness still exists, some axial adjustment of equipment, or realignment of the equipment may be required to relieve stress on the disc packs.

7.15 Check the angular misalignment by measuring the gap between the guard ring and spacer flange at four or more locations around the coupling, preferably at the 3:00, 6:00, 9:00, and 12:00 positions and compare these values with the 'PW'/Low value and the 'PW'/High value in Table-4. If any of the measurements fall outside this high/low range, make adjustments in the equipment alignment before continuing.

Caution!	To ensure the best possible coupling alignment, it is always recommended to use optical methods such as Laser technology for aligning the equipment. Proper equipment alignment will extend both the coupling and equipment life.

7.16 Remove any tooling and material away from the shafting and coupling. Install the coupling guard per OSHA requirements and remove the Lockout / Tagout kit from the power supply. The equipment can then be started up and tested. The coupling and equipment should run smoothly. If vibration is detected it could indicate there is an issue with alignment or other problems possibly related to the motor, coupling, or driven equipment. These issues should be resolved prior to placing this coupling into operation.

8.0 STANDARD COUPLING INSPECTION AND MAINTENANCE:

8.1 Static Coupling Inspection should be performed with the equipment stopped and made safe per OSHA requirements. The coupling should be inspected for any signs of damage, wear, or fatigue that may have occurred during normal operation of the equipment. The coupling should be rotated to facilitate being inspected on all sides. The following steps should be taken:

8.1.1 Inspect all fasteners for signs of damage, wear, or fatigue and make sure all the bolts and locknuts are tightened to the torque specified in Table-2. Replace and re-torque the bolts as necessary.

8.1.2 Inspect the disc packs for cracks, separation of the layers or leaves within the disc pack and any other abnormalities that may be evidence of fatigue or wear. The disc packs should be replaced if necessary. Replacement disc pack kits include new hardware.

8.1.3 Inspect the disc pack bushings (6 or 8 per disc pack) for signs of any cracks or breaks and replace the complete disc pack and hardware if necessary.

8.1.4 Inspect the hubs for any signs of damage or wear and replace if necessary.

8.2 A dynamic coupling Inspection can be performed while the coupling is in operation. The disc packs can be inspected through a protective shield using a strobe light. Use the following steps when performing a dynamic inspection.

8.2.1 If there is vibration present in the system, the cause is not necessarily the coupling. There could be balance or alignment issues with the driving or driven equipment. Any balance or alignment issues can cause damage to the equipment or coupling if left unresolved.

8.2.2 Setup access to viewing the disc pack through a safety screen or mesh screen so that the disc packs can be observed with a strobe light while under load.

8.2.3 Adjust a strobe light so that the disc pack appears to be stationary, or rotating very slowly. Adjust the strobe on intervals to ensure the inspection is performed on all the disc pack bushings and disc segments.

8.2.4 Check for cracks, breaks, or looseness in the bushings.

8.2.5 Check the disc pack for any bowing or separation of the layers or leaves in the disc pack (see section 7.12).

8.2.6 Check the disc pack for any broken, frayed, or cracked layers or leaves. Specifically look for broken leaves on the outer layers of the disc pack next to the bushings. This is an early stage of a normal disc pack failure caused by misalignment.

8.2.7 Check each disc pack for waviness or any distortion that could indicate misalignment or other disc pack problems.

8.3 If any adverse conditions are identified using procedures specified in sections 8.1 and 8.2, the disc packs and disc pack hardware should be replaced and the equipment alignment checked.

9.0 DISC PACK REPLACEMENT:

9.1 Prior to replacing the disc packs, the spacer assembly will need to be removed from the coupling. Ensure the spacer assembly is adequately supported prior to loosening any of the hub bolts.

9.2 Remove the hub mounting bolts on each end of the coupling. Again, ensure the spacer assembly is adequately supported. When the disc packs are compressed, the spacer assembly could drop free of the hubs and damage the assembly or cause injury.

9.3 Insert the shipping bolts, or hub bolts through the shipping bolt holes in both ends of the spacer. Thread these bolts into the tapped holes on the disc pack side of the guard ring and hand tighten until the bolt heads barely touch the spacer flange.

9.4 While supporting the spacer assembly, turn each of these bolts one half turn. If the spacer assembly is not compressed enough to be removed from between the hubs, tighten each of these bolts an additional one half turn. Repeat this until the assembly is free of the hubs. Normally, the bolts on each end of the spacer assembly should not be tightened more than 1-1/2 turns.

9.5 Move the spacer assembly to a safe and clean area where the spacer assembly can be disassembled to replace the disc packs.

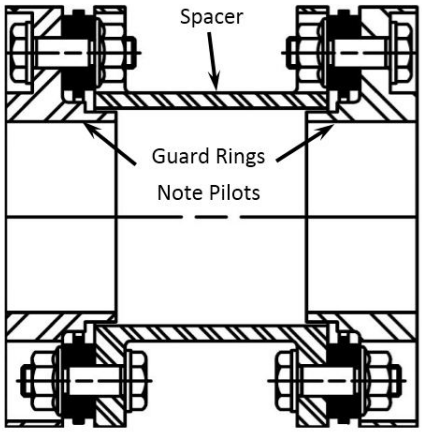
9.6 Remove the bolts and lock nuts that hold the guard rings to the disc packs on each end of the spacer assembly. Discard the bolts and lock nuts. Replacement bolts and lock nuts are provided with new disc pack kits.

9.7 Remove the bolts and nuts that hold the disc packs to the spacer on both ends of the spacer assembly. Disc packs are the flexible elements in disc couplings and, for that reason, are subjected to fatigue through continuous flexing. It is recommended that both of used disc packs in the spacer assembly be replaced and the old disc packs discarded along with the used bolts and lock nuts.

9.8 Prior to installing the new disc packs, apply a light film of lubrication to the face of the bushings on each disc pack. Mount the disc packs on each end of the spacer by inserting the new bolts through the flange in the spacer, then through the bushing in the disc pack. Hand tighten the lock nuts on the bolts until they seat against the disc pack bushing.

9.9 Use an open end or box end wrench to prevent the bolts from turning, then with a calibrated torque wrench, tighten the lock nuts on each disc pack using the industry standard procedure for tightening the nuts first to 50%, then 75%, then to the final torque specified in Table-2.

9.10 Position the guard rings so that the long end extends through the disc pack and inside the spacer. This is intended to be a loose fit, not a pilot fit. The purpose of the guard ring extending inside the spacer is to prevent the coupling from coming apart if one or both of the disc packs fail. This is referred to as anti-flail. The large holes in the guard ring should fit over the lock nuts that are holding the disc packs to the spacer.



9.11 Insert the disc pack bolts through the small counter bored holes in the guard ring and through the holes in the disc pack bushings. Hand tighten the lock nuts through the large holes in the spacer flange until they seat against the bushings.

9.12 Use a socket wrench to prevent the bolts from turning, then with a calibrated torque wrench, tighten the lock nuts on each disc pack using the industry standard procedure for tightening the nuts first to 50%, then 75%, then to the final torque specified in Table-2. Repeat this for both ends of the spacer assembly.

9.13 To reinstall the spacer assembly in the coupling, refer to sections 7.4 through 7.16.

Table 2 - Lovejoy Disc Pack Bolts & Locknuts

Size	Socket Size		Torque Wrench	Clearance Hole		Bolt Torque			
	Bolt Size	Nut Size	Drive Size	Diameter	Diameter	Lubricated Threads		Dry Threads	
	mm	mm	in	in	mm	ft-lbs	Nm	ft-lbs	Nm
DI 90-6	10	10	1/4	0.63	16	8	11	10	14
DI 110-6	13	13	3/8	0.827	21	18	24	22	30
DI 132-6	13	13	3/8	0.827	21	18	24	22	30
DI 158-6	17	15	3/8	1.024	26	35	48	44	60
DI 185-6	19	18	3/8	1.26	32	59	80	74	100
DI 202-6	22	21	1/2	1.378	35	89	120	111	150
DI 228-6	24	24	1/2	1.457	37	136	184	170	230
DI 255-6	30	30	3/4	1.772	45	266	360	332	450
DI 278-6	30	30	3/4	1.811	46	266	360	332	450
DI 302-6	32	32	3/4	1.968	50	354	480	443	600
DI 325-6	32	32	3/4	2.047	52	354	480	443	600
DI 345-6	36	36	3/4	2.205	56	460	624	575	780
DI 380-6	41	41	1	2.362	60	649	880	811	1100
DI 410-6	46	46	1	2.677	68	885	1200	1106	1500
DI 440-6	50	50	1	2.913	74	1180	1600	1475	2000

Note: The Clearance Hole Diameter of the coupling may be smaller than the Outside Diameter of some typical size socket. The socket's OD may need to be turned down to approximately 0.76 mm (0.030") smaller than the coupling's clearance hole diameter.

Table 3 - DI Hub Mounting Bolts (Size and Torque)

Size	Hub Bolts				Bolt Torque	
	Standard Hubs		Jumbo Hubs		Std and Jumbo Hubs	
	Qty Per Hub	Size mm	Qty Per Hub	Size mm	ft-lbs	Nm
DI 90-6	6	M6x20	6	M6x50	11	15
DI 110-6	6	M8x25	6	M8x70	26	35
DI 132-6	6	M8x25	6	M8x80	26	35
DI 158-6	6	M10x30	6	M10x90	51	69
DI 185-6	6	M12x40	6	M12x100	89	120
DI 202-6	6	M14x45	6	M14x110	140	190
DI 228-6	6	M16x50	6	M16x130	218	295
DI 255-6	6	M20x60	6	M20x150	428	580
DI 278-6	6	M20x60	6	M20x160	428	580
DI 302-6	6	M22x70	6	M20x170	575	780
DI 325-6	12	M18x70			480	650
DI 345-6	12	M20x70			428	580
DI 380-6	12	M22x80			575	780
DI 410-6	12	M24x90			738	1000
DI 440-6	12	M24x90			738	1000

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ISO 9001:2008 Certified

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Table 4 - Allowable Misalignment

Size	Disk Pack Width (PW) - Gap								Misalignment				
	Standard Pack Width (PW)				PW + / - Dimensions				Axial		Angular	Parallel	
	PW		Tolerance + / -		Low		High		±ΔKa		Max	Max	
	in	mm	in	mm	in	mm	in	mm	in	mm	Degree	inch	mm
DI 90-6	0.295	7.5	0.003	0.08	0.292	7.43	0.298	7.58	0.030	0.75	1.5°	**Spacer Length x 0.025"**	**Spacer Length x 0.6mm**
DI 110-6	0.331	8.4	0.004	0.11	0.327	8.30	0.335	8.51	0.039	1.00			
DI 132-6	0.331	8.4	0.005	0.13	0.326	8.27	0.336	8.53	0.051	1.30			
DI 158-6	0.441	11.2	0.006	0.16	0.435	11.05	0.447	11.36	0.059	1.50			
DI 185-6	0.551	14.0	0.007	0.19	0.544	13.82	0.558	14.19	0.071	1.80			
DI 202-6	0.610	15.5	0.007	0.19	0.603	15.31	0.617	15.69	0.075	1.90	1°	**Spacer Length x 0.017"**	**Spacer Length x 0.4mm**
DI 228-6	0.689	17.5	0.008	0.21	0.681	17.29	0.697	17.71	0.083	2.10			
DI 255-6	0.807	20.5	0.009	0.24	0.798	20.27	0.816	20.74	0.091	2.30			
DI 278-6	0.835	21.2	0.010	0.26	0.825	20.94	0.845	21.46	0.102	2.60			
DI 302-6	0.961	24.4	0.011	0.29	0.950	24.12	0.972	24.69	0.110	2.80			
DI 325-6	1.024	26.0	0.013	0.33	1.011	25.68	1.037	26.33	0.126	3.20			
DI 345-6	1.110	28.2	0.014	0.35	1.096	27.86	1.124	28.55	0.134	3.40			
DI 380-6	1.260	32.0	0.015	0.38	1.245	31.62	1.275	32.38	0.150	3.80			
DI 410-6	1.307	33.2	0.016	0.41	1.291	32.79	1.323	33.61	0.161	4.10			
DI 440-6	1.433	36.4	0.017	0.44	1.416	35.96	1.450	36.84	0.173	4.40			