



## Repair instructions for PM ball valve, type Rx5GD



- All work on the ball valve must only be carried out by trained specialist personnel.
  - During repair work, the appropriate protective equipment must be worn and the tools used must be in perfect condition.
  - Our repair instructions must be observed when carrying out repairs.
1. In the death space of the ball valve, there may still be pressurized product, in both open and closed position of the valve. After having taken suitable safety precautions the ball must first be opened/closed to a 45° position in order to relieve the pressure from the death space.
  2. Unscrew the stuffing box cover (pos. 5).  
Loosen the disc springs (pos. 17) and the thrust ring (pos. 6) by slightly tapping the drive shaft (pos. 4) side wards, then remove them both.
  3. Loosen the Allen screws (pos. 8) and remove the body half (pos. 1.1) together with the seat ring (pos. 9).
  4. Bring the ball (pos. 2) into the closed position so that you can pull it out of the housing (pos. 1).
  5. Push the drive shaft (pos. 4) towards the inside to remove it out of the housing (pos. 1).
  6. Remove stuffing box packing (pos. 13 and 16). Take care that you don't damage the inside of the stuffing box housing.
  7. Remove the seat ring (pos. 9) from the housing (pos. 1) and also the seat ring (pos. 9) from the housing half (pos. 1.1).
  8. Carefully remove the graphite packings (pos. 9.2) from both housings (pos. 1 and pos. 1.1).
  9. The disassembled ball valve parts may only be cleaned with glass bead blasting  
Attention: Do not damage sealing surfaces (seat and seal area of the bodies, inner side of the stuffing box).
  10. Compress the graphite packings for seat ring, see Fig. 1 in "Force table Rx5GD/A3"  
Place new graphite packings (pos. 9.2) (2/3 of the indicated quantity) together with the seat ring (pos. 9) into the housing (pos. 1). Use a suitable ring (R) to compress the packing with the pre-pressing force F.
  11. Place new graphite packings (pos. 9) (2/3 of the indicated quantity) together with seat ring (pos. 9) into housing half (pos. 1.1). Use a suitable ring (R) to compress the packing with the pre-pressing force F as well.



12. Carefully remove the seat ring (pos. 9) from the housing (pos. 1). Insert the remaining graphite packings (pos. 9.2) and the intermediate ring (ZR, 0.3mm) for the valve sizes marked with \*.
13. Insert the seat ring (pos. 9) again and compress the graphite packings (pos. 9.2) with the ring (R) to the same compression force as before. See Fig. 2 in "Tabelle Rx5GD / A3".
14. For the valve sizes where the intermediate ring (ZR) was used for compressing, it must be removed afterwards. To do this, carefully remove the seat ring (pos. 9), remove the intermediate ring (ZR) and now reinstall the seat ring directly onto the prepressed graphite packings (pos. 9.2).
15. Now do the same for the housing half (pos. 1.1):  
Carefully remove the seat ring (pos. 9) from the housing (pos. 1.1) and insert the remaining graphite packings (pos. 9.2). Also insert the intermediate ring (ZR, 0.3mm) for the sizes marked with \*.
16. Insert the seat ring pos. 9 again and compress the graphite packings pos. 9.2 with the ring (R) to the same compression force as before.
17. For the valve sizes where the intermediate ring (ZR) was used for compressing, it must be removed afterwards. To do this, carefully remove the seat ring (pos. 9), remove the intermediate ring (ZR) and now reinstall the seat ring directly onto the prepressed graphite packings (pos. 9.2)
18. Put one graphite bearing ring (pos. 16) over the drive shaft (pos. 4) and pre-press it with a suitable piece of pipe, so that the final thickness of the bearing ring is approx. 1.3 mm.
19. Install the drive shaft (pos. 4) with the pre-pressed graphite bearing ring (pos. 16) from the inside of the housing into the stuffing box.
20. Insert the ball (pos. 2) into the housing (pos. 1) so that the drive shaft (pos. 4) engages into the groove of the ball. Rotate the ball 90° into the open position.
21. Place the housing half (pos. 1.1) with installed seat ring (pos. 9) and compressed graphite packing (pos. 9.2) into housing (pos. 1).  
Attention: Do not damage metallic sealing edges. Grease the Allen screws (pos. 8) with suitable grease (high temperature) and tighten them crosswise in several steps.
22. Measure the torque (without stuffing box packing) and compare it to the values in the table. If it is too low, install and compress another packing ring (pos. 9.2)  
If it is too high, compress the graphite packing rings again together with the intermediate ring. Remove the intermediate ring after the pre-compressing.

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23. In some valve sizes there is a metal ground ring (pos. 3.1) at the bottom of the stuffing box. This one has to be installed before the assembly of the stuffing box packing begins. The smaller diameter must be at the bottom side. Insert the bearing ring (pos. 16), the graphite packings (pos. 13) and the thrust ring (pos. 6) into the stuffing box. Slightly compress the stuffing box packing by tightening the stuffing box cover (pos. 5). Remove the cover again and insert the disc spring (pos. 17) with the outer diameter against each other.
24. Screw the stuffing box cover (pos. 5) in and fully tighten it.
25. Check the function of the ball valve.



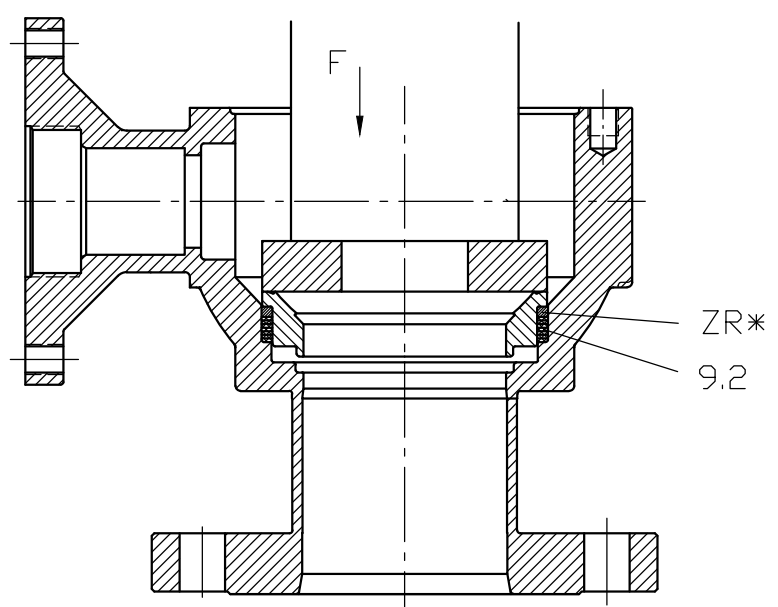
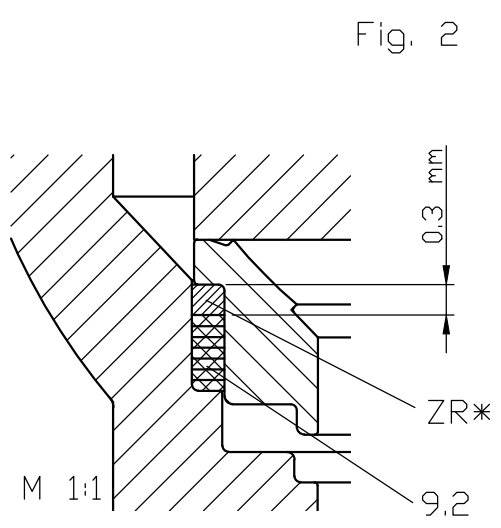
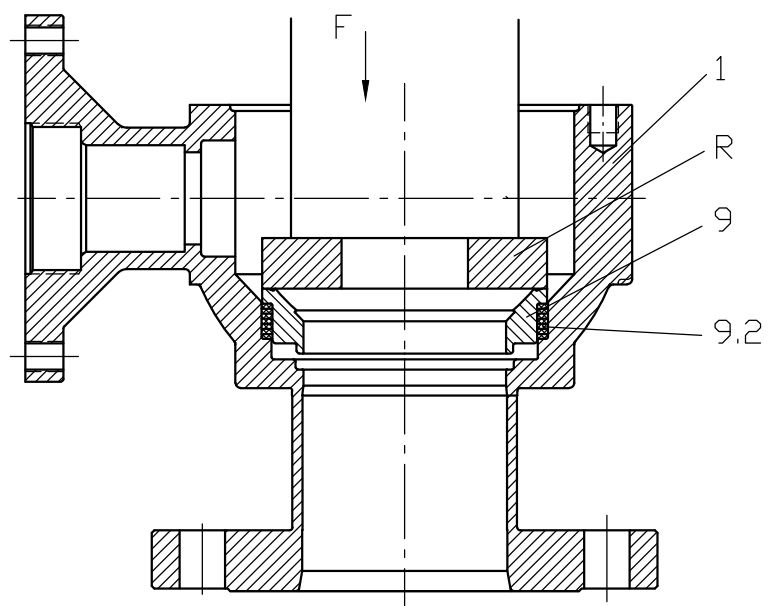
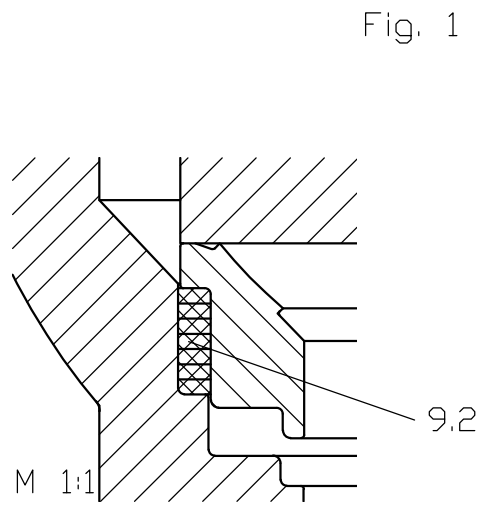
**PART LIST 1**

Drawing number: Type R650GD2440440065F10

**Description: PM ball valve metallic seated, two-piece body; Material 1.4404  
Both seats sealed with graphite;**

<b>Item</b>	<b>Description</b>	<b>Material</b>	<b>Quantity</b>
1.00	housing complete, type R	1.4404	1
1.10	housing half complete, type R	1.4404	1
2.00	ball	1.4571, metallic coated	1
3.10	stuffing box ring	1.4404	1
4.00	drive shaft	1.4418	1
5.00	stuffing box cover	1.4305	1
6.00	thrust ring	1.4305	1
8.00	allen screw	1.4301	8 *
9.00	seat rings	1.4571, metallic coated	2
9.20	graphite packing (for seats)	Graphite (see Force table Rx5GD/A3)	14 *
13.00	stuffing box packing	Graphite	2 *
16.00	bearing ring	Graphite	1
17.00	disc spring	1.4310	2
20.00	hand lever, slidable	1.4301	1
21.00	stop plate	1.4301	1
22.00	stop bolt	1.4301	2
23.00	washer	1.4301	12

\* quantity depending on valve size



DN	Graphite rings Pos. 9.2 Number/side	Compression force F	Target torque Nm (without SB packing)	
			von	bis
15	5 x 2mm	20000 N	5 Nm	30 Nm
25	5 x 2mm	30000 N	5 Nm	40 Nm
40*	5 x 2mm	60000 N	30 Nm	120 Nm
50	5x2mm, 1x1mm	60000 N	30 Nm	150 Nm
65*	8 x 2mm	65000 N	30 Nm	170 Nm
80*	7 x 2mm	75000 N	40 Nm	180 Nm
100	7x2mm, 1x1mm	80000 N	40 Nm	220 Nm
150	9 x 2mm	140000 N	200 Nm	450 Nm

Intermediate ring ZR is used for dimensions which are marked with \*, or if the torque value of the valve is too high.

Geprüft		Allgem. Tol. ±0.2		Oberfläche		Maßstab 1:3		(Gewicht)	
		Datum		Name		Werkstoff (Halbzeug) (Rohteil-Nr) (Modell- oder Gesenk-Nr)			
		Bearb. 23.05.11		hk		Compression force table for PM-Ball valves Typ Rx5GD			
A3 DN15 angepasst		02.10.17		hk		Force table Rx5GD /A3			
A2 DN15 ergänzt		07.09.15		hk					
A1 Neue Werte		17.07.13		hk					
Zust		Änderung		Datum		Name		Dateiname	
		ReparleitungA2		Ersatz für:		Ersatz durch:		Blatt	
								Blätter	

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