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1. SAFETY

These instructions contain essential health and safety requirements concerning the safe use of the equipment.

1. For the intended purpose that was specified to Hopkinsons, e.g. location, pressure, temperature, fluid, etc.
2. When installed, operated, maintained, etc. in accordance with these instructions.

Failure to comply with these points in their entirety involves serious risk.

The manufacturer of this valve and actuator is:

WEIR VALVES & CONTROLS Ltd,
Britannia House,
Huddersfield Rd, Elland,
West Yorkshire,
HX5 9JR.
England.

A nameplate is attached to the valve adaptor plate giving details in accordance with the valve standard to which this valve has been manufactured. It includes details of the manufacturing contract and item number and valve figure number. The nameplate details should be quoted in their entirety in any correspondence with Weir valves & Controls, for the enquiry of spare parts or other technical information.

Where actuators are employed, a nameplate is also attached to the electric actuator, and similarly all nameplate details should be quoted in any correspondence concerning the actuator. In addition to these instructions, the Operating and Maintenance Instructions for the actuator must be read and fully understood, and must be consulted in any matter relating to the actuator.

Where gearboxes are employed, please refer to the information provided by the gearbox manufacturer.

The following warning/instructions are attached to the valve assembly and must be observed and followed at all times.

SAFETY WARNINGS:

Beware of Hot surfaces.

Electrically isolate actuator before adjustment or maintenance to valve.

Valve must be depressurised before adjustment and maintenance.

Please refer to Weir Valves & Controls UK Ltd Publications 'SAFETY WITH VALVES' and 'SAFETY WITH ELECTRIC ACTUATORS' for general principles on installation, operation and maintenance. However, in all cases these Operating and Maintenance Instructions supersede any alternative information that may be given in, for example non-specific catalogues or the above mentioned general safety publications.

At all times the valve must be maintained to a safe condition and any damaged or worn parts must be replaced with the correct parts supplied by Weir Valves & Controls Ltd. Users are strongly recommended to avail themselves of the training courses provided by Weir Valves & Controls UK, who also provide on-site and off-site repairs.

We recommend that a record is kept of all work done to this equipment, including its operating history.

DESCRIPTION

The 'UNIFLOW' is an adaptation of the parallel slide valve, suitable for one way flow, which is easy to operate and simple to maintain. The valve has only one disc, which slide over the seat face. The disc is firmly held against the seat solely by the fluid pressure acting on the back of the disc. A light spring is used to keep the disc in

contact with the seat when the valve is not under pressure. The disc is free to align itself to the seat and to revolve; this effects a wiping action across the seat when closing to remove any scale or other debris lying on the seat. Only a half turn of the handwheel is required to operate the valve between the shut positions, which are indicated on the index plate.

The 10mm and 15mm are bonnetless construction, the internal components being assembled and dismantled through the stuffing box. Refer to drawing R20379A/18

The 20, 25, 32 and 40mm sizes have a pressure seal bonnet lid assembly, in which the fluid pressure acting on the lid creates a seal by a mechanical wedging action.

Refer to drawing R20332B/18

VALVE OVERHAUL

Overhaul the valve only when it is safe to do so. Obtain the correct spare parts prior to dismantling the valve. Do not attempt to reuse gland packing material.

Care must be taken not damage to the stem or stuffing box when removing old packing material. Clean and inspect all parts and replace any damaged components.

DISMANTLING

Bonnetless Design (10mm and 15mm)

Note: Observe all safety precautions

1. The valve should be in the open position
2. Remove gland nuts (522) and capscrews (643) and lift out the complete top assembly followed by the spring and disc.

Pressure Seal Lid Design (20mm to 40mm)

1. The valve should be in the open position
2. Remove bridge and handwheel assembly by unscrewing capscrews and hand wheel nut (49). Lift off handwheel (3) index (118), bridge (4) and cover plate (34).
3. Remove gland nuts (522) and gland assembly gland (12), gland cover (994) and cleaning ring (2058).
4. Remove pillars (8).

5. Remove adjusting screws (443), t allow the gland plate (718) and split ring (152) to be removed.
6. Remove the locating ring (424).
7. Press lid (2) down until it locates on shoulder inside body (1).
8. Remove segmental ring by firstly removing master segment, Refer to diagram 1a, then remove the remaining pieces. Each segment has tapped hole (No.6 UNC) to aid removal.
9. The lid (2) and spindle (9) may now be removed.
10. Remove the packing's from the spindle lid.
11. Remove valve disc (26) and spring (70).

Maintenance of seat and disc

The seating faces of the need to be smooth and flat to make a leak-tight seal. Conventional machining will not produce satisfactorily smooth and flat results.

Lapping produces a uniform, smooth, flat finish and is used both in the process of manufacturing new parts, and as a renovation process on valves that have been in service.

The lapping of the disc and seat should be carried out independently. Avoid lapping of the disc to the valve seat as this tends to create ridges on one of the components and prevents the valve from perfect sealing.

It is bad practice to attempt to lap out deep score marks, where possible these should be machined out prior to lapping.

Proprietary lapping compounds are recommended which will give rapid cutting and a suitable finish from the appropriate grade.

For additional information refer to:
IOM-P1-R1 Maintenance of Valves and Seats

ASSEMBLY

Bonnetless Design (Refer to Typical Drawing R20379A/18).

1. Ensure that all parts are clean.
2. Place the disc (26), disc spring (70) and spindle (9) into the body (1).
3. Fit the gland ring (148) into the stuffing box bore.
4. Repack valve refer to section replacement of gland packing's.

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IOM-P10-R0

5. Fit the gland (12), cleaning ring (2058), cover plate (994) and nuts (522), tighten the nuts evenly to compress the packing slightly.
6. Fit the pillars (8), bridge assembly, index plate (118) handwheel (3) and spindle nut/washer (49, 50).

Pressure Seal Lid Design Refer to Typical Drawing R20331/B18 & R20332/B18.

1. Ensure that all parts are clean.
2. Place the disc (26), disc spring (70) and spindle (9) into the body (1).
3. Place spindle in lid and locate in body ensuring correct location in disc.
4. Fit pressure seal joint (430) taking care not to damage the tapered lip. The use of a tubular ram with a small clearance between the lid and body will facilitate fitting the joint. The joint must NOT be tamped down.
5. Fit the distance piece (343)
6. Fit the segment ring (926)
Note the lid can now be pulled up to tap the segmental locking ring
7. Fit pillars to the bonnet lid.
8. Fit the locating ring (424), gland plate (718) and split ring (152).
9. Use adjusting screws (443) to jack up the lid keeping it square, until no more load can be applied to the adjusting screws.
10. Repack the valve Refer to gland packing below.
11. Fit and progressively tighten gland nuts
12. Replace bridge and hand wheel assembly.
- 13.

GLAND PACKING

Replace the preformed block where fitted. (61)

Fit each ring of packing (921) separately, tamping down each ring into the stuffing box with a tubular ram preferably fitted with a bronze bush on the end and having a small clearance between the spindle and stuffing box.

Each successive ring should be tamped down, until the full compliment of rings are fitted. Consolidation of the rings is important as adequate load cannot be achieved solely by tightening the gland studs.

Fit the final preformed block into the top of the stuffing box as described above.

Fit the gland follower and replace the nuts, tighten the nuts evenly keeping the stem and gland concentric to avoid any contact with any parts in the sealing area.

The valve may then be completely assembled, tested and the system re commissioned. The packing may require slight attention after the application of pressure and temperature, in order to maintain packing density the gland should be followed up as soon as possible after re commissioning to prevent leakage. This is done by tightening the gland nuts.

In order to obtain optimum service during service glands should be followed up as soon as any leakage is detected.

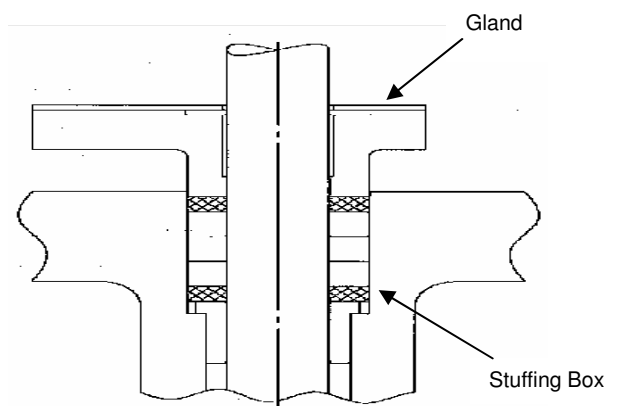
Refer IOM-G5-R0 Valves Glands

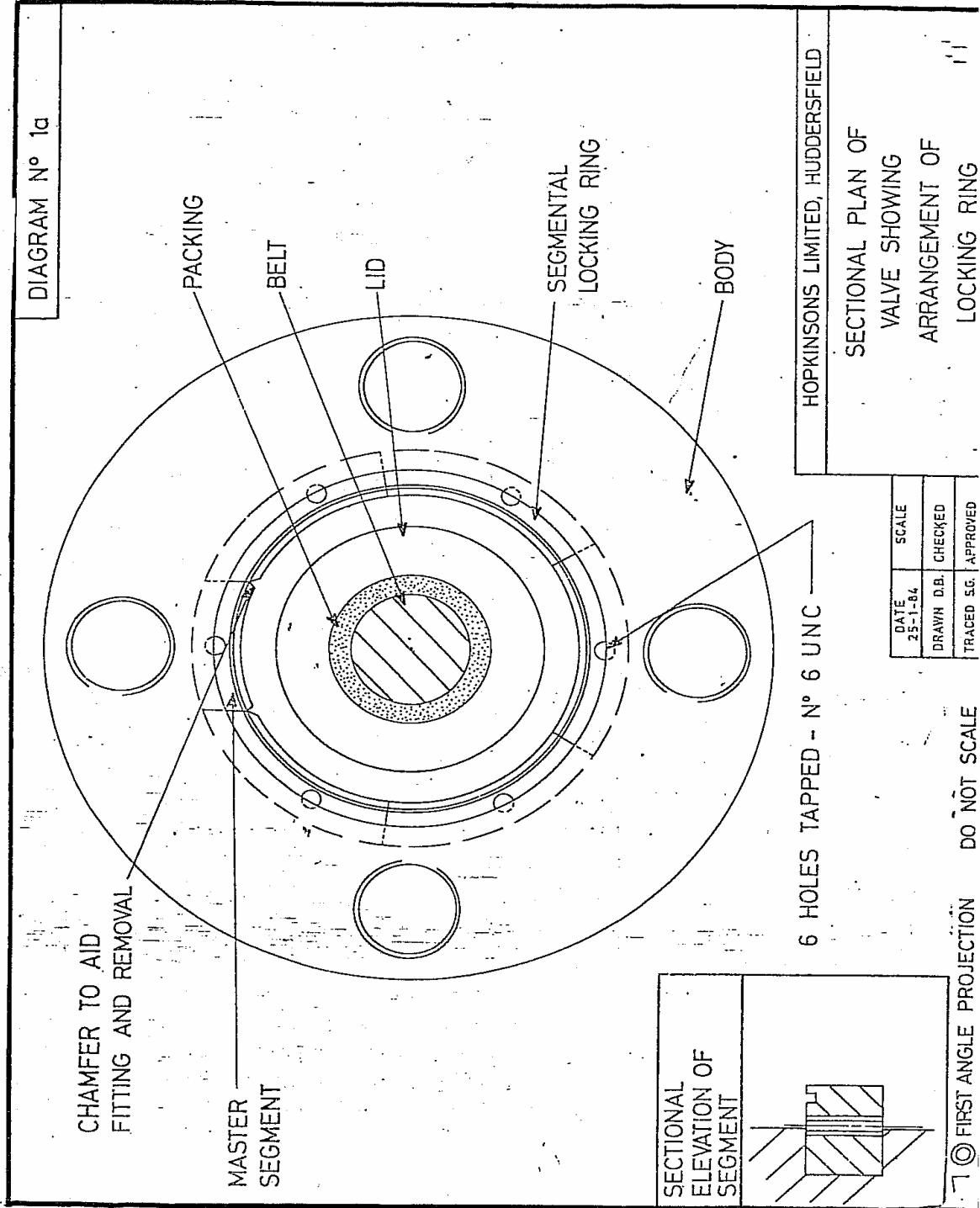
PREVENTATIVE MAINTENANCE

Regularly inspect valves for signs of gland leakage. The gland packing can be tightened to prevent leakage but if a leak has persisted for some time it will have blown out some of the packing material and thus simply tightening the gland will not prevent the leakage. In addition the lack of support given to the stem by the gland packing may allow for the stem to come into contact with the metal gland parts.

Caution: Only undertake preventative maintenance when it is safe to do so. Do not over tighten gland nuts in an attempt to stop gland leaks. If the leakage cannot be controlled, then overhaul the gland at the earliest opportunity.

Typical Packing Arrangement



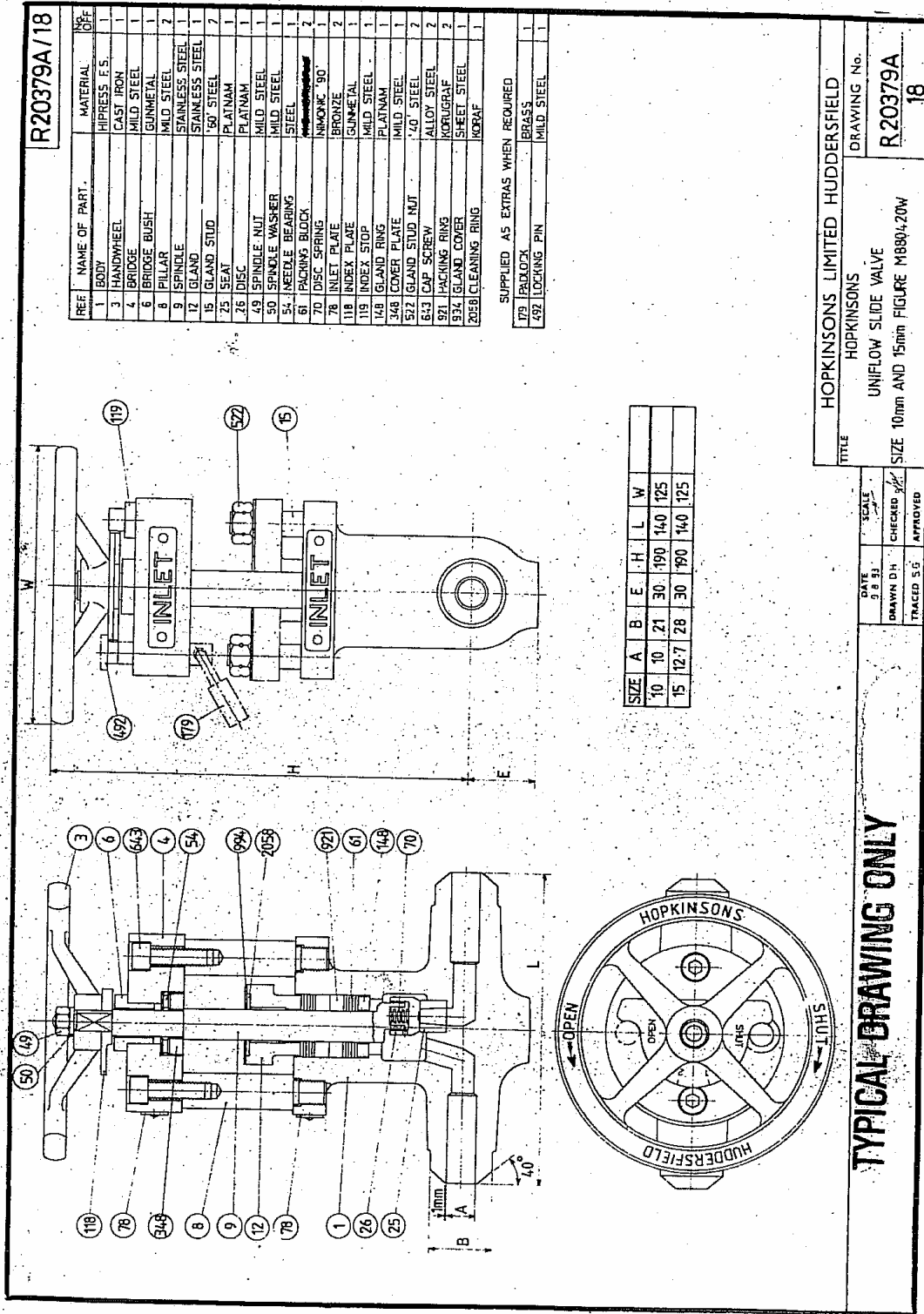


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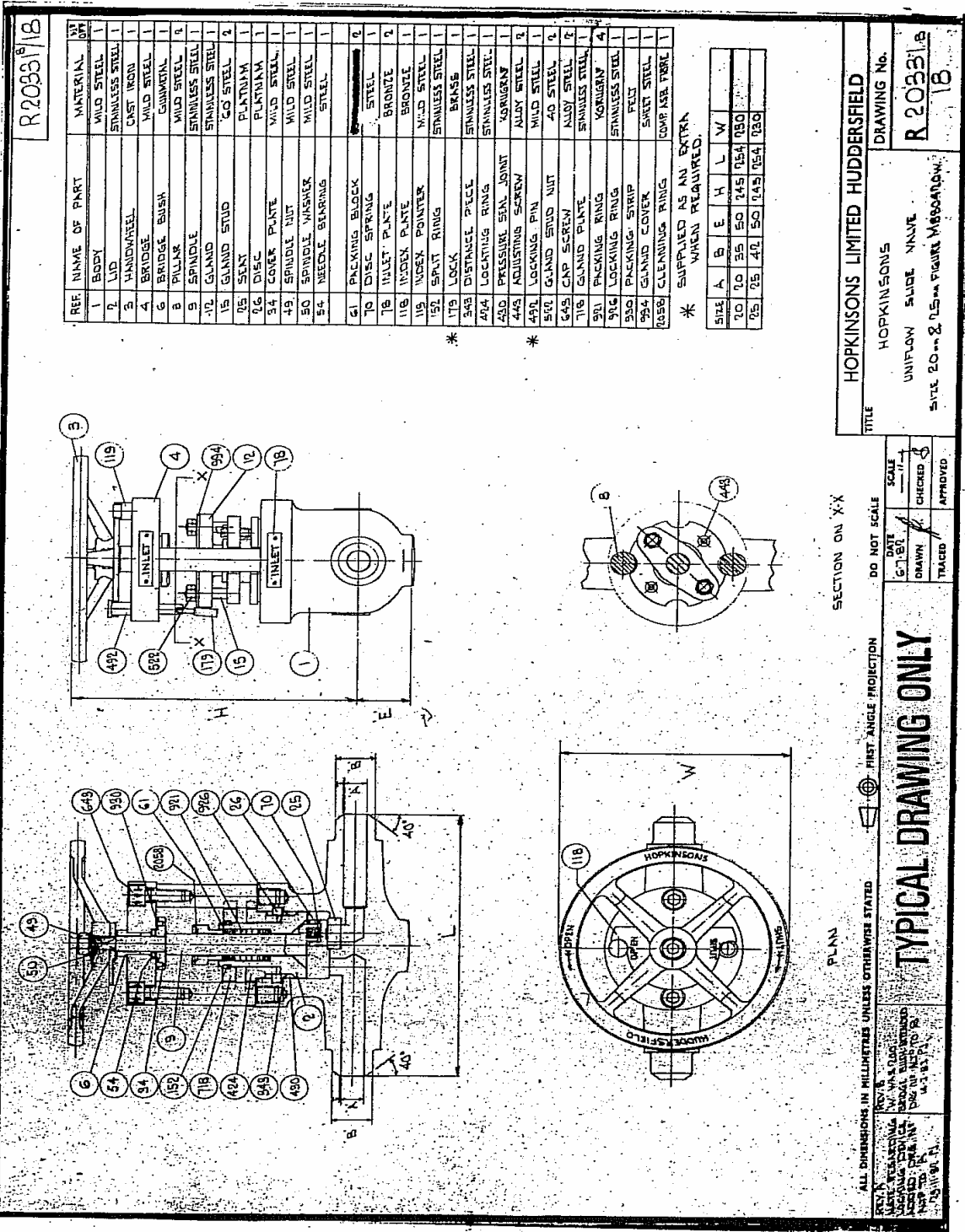


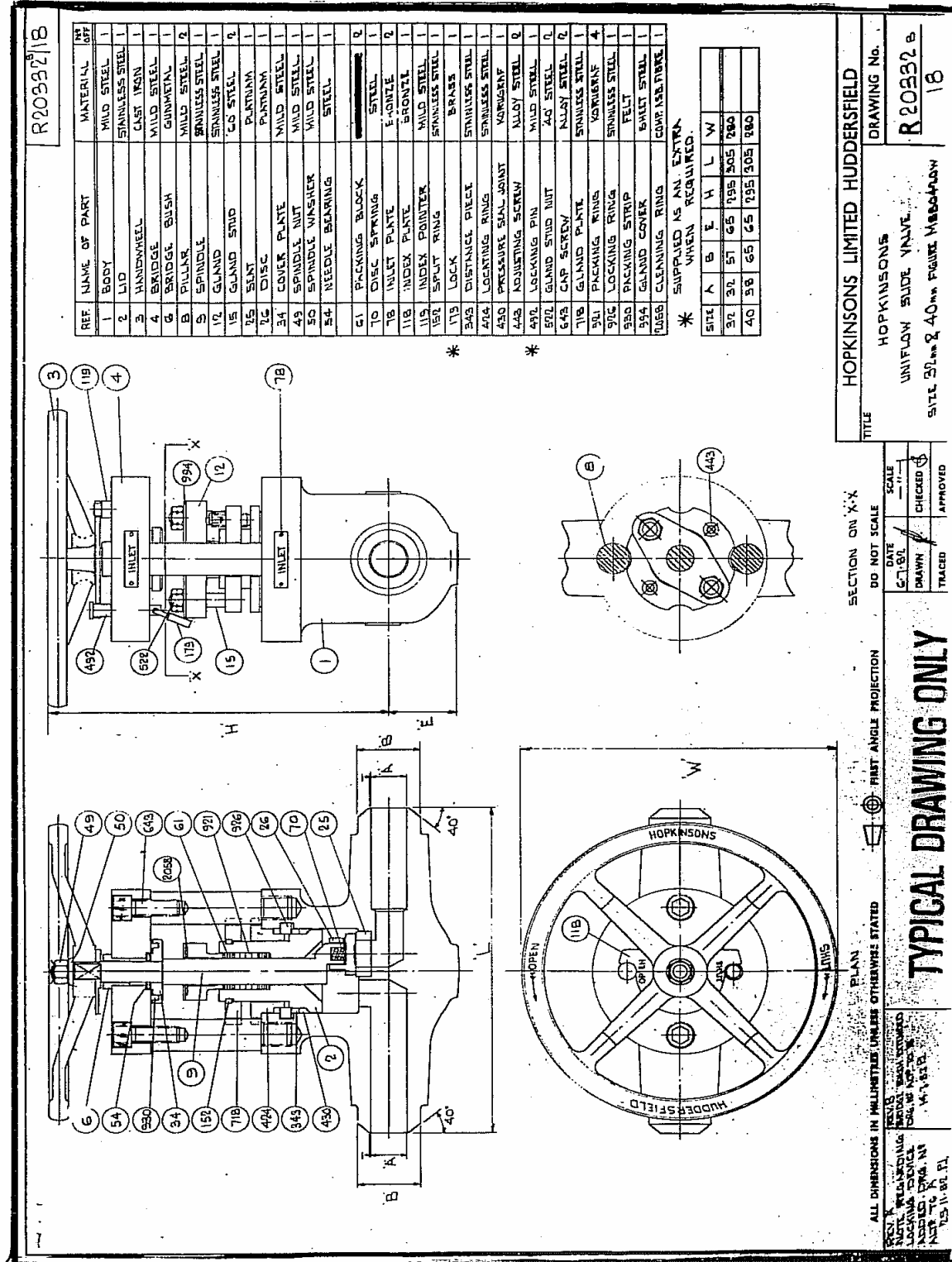
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R20332/18

REF.	NAME OF PART	MATERIAL	NO. OFF
1	BODY	MILD STEEL	1
2	LID	STAINLESS STEEL	1
3	HANDWHEEL	CAST IRON	1
4	BRIDGE	MILD STEEL	1
5	BRIDGE BUSH	BRONZE	2
6	PILLAR	MILD STEEL	2
7	SPINDLE	STAINLESS STEEL	1
8	GLAND STUD	CS STEEL	2
9	SEAL	PANTHAM	1
10	DISC	PANTHAM	1
11	COVER PLATE	MILD STEEL	1
12	SPINDLE NUT	MILD STEEL	1
13	SPINDLE WASHER	MILD STEEL	1
14	NEEDLE BEARING	STEEL	1
15	PACKING BLOCK	STEEL	2
16	DISC SPRING	STEEL	1
17	INLET PLATE	BRONZE	1
18	INDEX PLATE	BRONZE	1
19	INDEX POINTER	MILD STEEL	1
20	SPLIT RING	STAINLESS STEEL	1
21	LOCK	BRASS	1
22	DISTANCE PIECE	STAINLESS STEEL	1
23	LOCATING RING	STAINLESS STEEL	1
24	PRESSURE SEAL JOINT	MONEL	1
25	ADJUSTING SCREW	ALLOY STEEL	2
26	ADJUSTING PIN	MILD STEEL	1
27	GLAND STUD NUT	CS STEEL	2
28	CAP SCREW	ALLOY STEEL	2
29	GLAND PLATE	STAINLESS STEEL	1
30	PACKING RING	MONEL	4
31	LOCKING RING	STAINLESS STEEL	1
32	PACKING STRIP	FELT	1
33	GLAND COVER	CAST IRON	1
34	CLEANING RING	COMP. 15% NIBBLE	1

* SUPPLIED AS AN EXTRA WHEN REQUIRED.

SIZE	A	B	E	H	L	W
32	51	65	195	305	280	
40	58	65	235	305	280	

TITLE
HOPKINSONS LIMITED HUDDERSFIELD
DRAWING No. R20332/B
18

SECTION ON X-X
DO NOT SCALE
DATE 5/7/81
SCALE 1:1
DRAWN / CHECKED / TRACED / APPROVED

PLAN
FIRST ANGLE PROJECTION
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED
HOPKINSONS
HUDDERSFIELD
UNIFLOW SLIDE VALVE
TYPICAL DRAWING ONLY
REVISED 1984
REVISED 1985
REVISED 1986
REVISED 1987
REVISED 1988
REVISED 1989
REVISED 1990
REVISED 1991
REVISED 1992
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