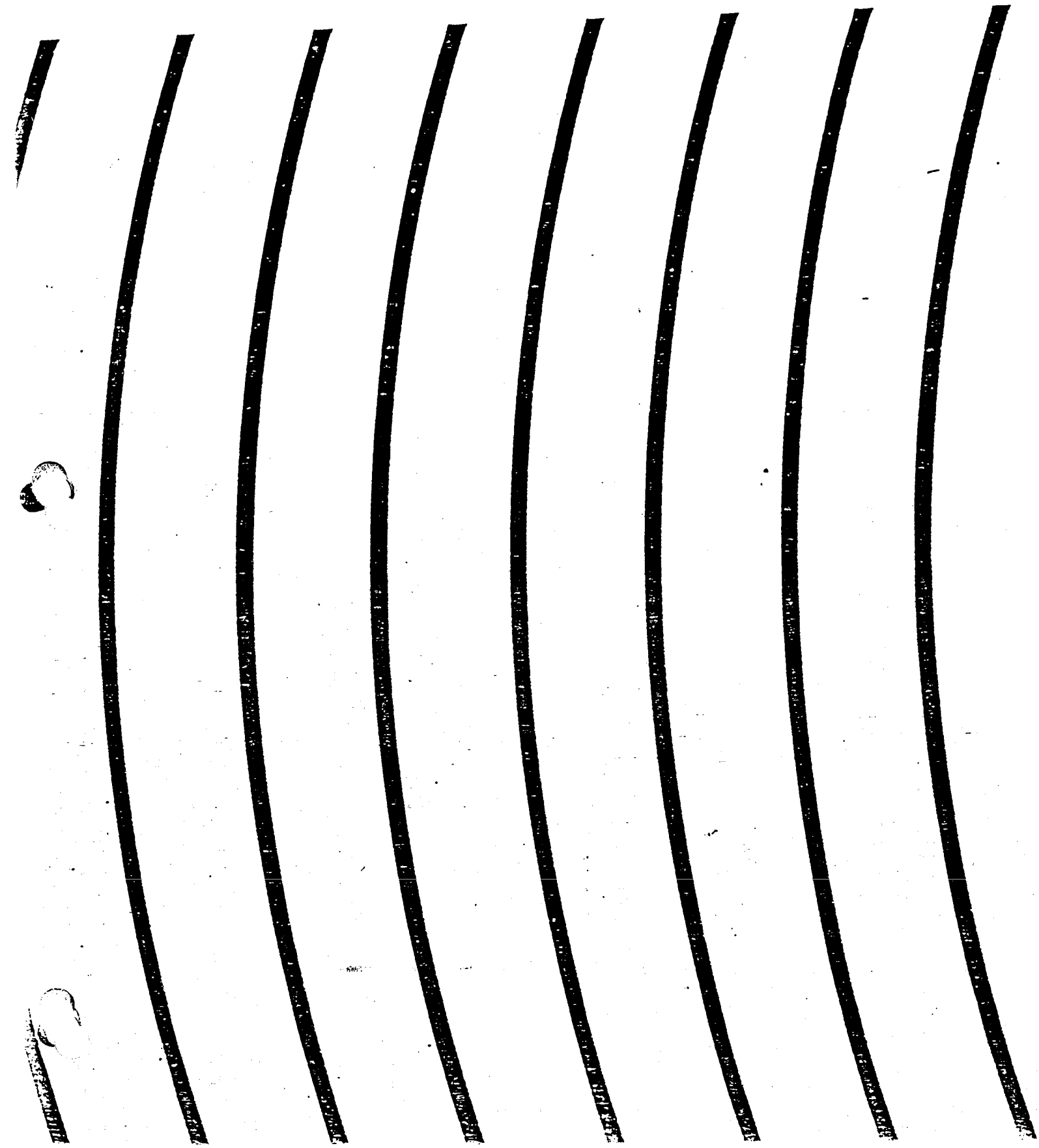
3016

CONWIND
- 2300 -

APPENDIX

PART 4

the care and maintenance of MOUNT HOPE® rolls



do

a few pointers to help your Mount Hope rolls deliver longer life and better performance

20 do's & don'ts for the care and maintenance of your Mount Hope rolls

A dollar's worth of prevention might save you hundreds in repairs and thousands in damaged or rejected products.

Your Mount Hope roll is a rugged piece of equipment that is designed to give you long, trouble-free service with only routine preventive maintenance. The outer sleeve normally supplied is made of a special compound which is tough and long-wearing though like any other soft rubber it is subject to cuts, tears and distortions if unreasonably abused.

Like any other equipment, a little common sense attention can greatly lengthen its service life and enable it to perform up to design characteristics.

IF IT IS NECESSARY TO STORE THE ROLL FOR ANY LENGTH OF TIME BEFORE INSTALLATION ☐ store in a cool, dry place protected from sunlight. Support the roll by the ends, not allowing it to rest on the rubber sleeve. For transporting the roll, lift it with a belt sling at least 12 inches wide. Do not use a chain or rope. Rotate the sleeve a quarter or half turn occasionally to prevent the rubber from taking a "set" due to the bow if storing for some length of time. If a set does develop, the roll may rotate unevenly for a while after being installed on the machine but will correct itself.

WHEN CLEANING THE ROLL ☐ use a cloth that has been dampened with kerosene or Stoddard solvent to clean the roll. Finish by wiping it dry. The regular sleeve of the Mount Hope roll is completely resistant to kerosene, lubricating oils and greases.

SHOULD SIGNS OF PREMATURE SLEEVE WEAR OCCUR ☐ check the bow setting to be sure it is not rotated too far out of the web. Rotating the apex of the bow slightly into the web will help reduce sleeve wear at the edges. If this does not eliminate the problem contact your Mount Hope sales engineer so he can check out the recommended amount of bow and wrap for your particular installation. Too much bow, wrap or, if the Mount Hope roll is not running at web speed, can cause sleeve wear. If it is necessary to sand the ends of the sleeve, it should be sanded cylindrical and finished as smooth as possible to help reduce further edge wear.

FOR ROUTINE LUBRICATION ☐ grease both ends of the roll about once a week in dry service, two or three times a week in a wet application such as on a cylinder machine wet felt near the showers. This is merely to grease the seal and not the bearings inside. Alemite Special High Temperature #2 water repellent grease (or equivalent) should be used. On a very wet application the axle and brackets should be kept painted to prevent corrosion (Greasing is required on rolls with grease fittings on the ends. Mount Hope's latest design is with seals that do not require greasing and no fittings are supplied).

APPROXIMATELY EVERY TWO YEARS ☐ return rolls in continuous service to the factory for thorough overhauling and replacement of worn parts. Although the rolls will run much longer than two years under good conditions, many of our customers have found such preventive maintenance a sound policy.

ON VARI-BOW ADJUSTABLE BOW ROLLS ☐ keep the locking nut "M" (see our specification sheets) tight at all times except when increasing or decreasing the bow. Failure to do this will not only allow moisture to get into the axle and bearings, but may also allow the spools to separate enough so that the sleeve gets pulled in between them, producing corrugations in the surface. Failure to keep the locking nut tight, will also cause vibration.

IN AN EMERGENCY ☐ call your Mount Hope sales engineer or your nearest Mount Hope plant in advance, should you require rush service or repairs. By anticipating your needs we can have everything in readiness when your roll arrives. We cannot stock all sizes of sleeves and, in the case of the larger sizes, we appreciate two weeks' notice in order to have the sleeve on hand when your roll arrives. When notifying us be sure to give us the serial number of the roll. We maintain a large stock of spare parts which can be installed immediately on receipt of your roll. In some cases we may request that your roll be shipped to one plant rather than another because a particular sleeve is available or because our work is lighter at a given plant, enabling us to give you faster service.

do not

☐ use Mount Hope rolls with regular sleeves above operating temperatures of 225° F. We have special sleeves available for higher temperatures, resistance to particular chemicals and other critical service. Your local Mount Hope sales engineer can tell you about them. Or write to your nearest Mount Hope plant.

☐ expose the Mount Hope roll continuously to chlorinated or aromatic hydrocarbons. While the sleeve is resistant to most chemicals and solvents, prolonged and concentrated exposure to acetone, toluol, and similar compounds will cause swelling.

☐ be a "Roll Snatcher." If the roll is doing a good job in one location, don't pirate it for service in another spot rather than installing a second roll. If you DO move the roll avoid excessive bow, as when a size press roll has been moved to the reel location. Also, be sure to replace the "borrowed" roll, lest the problem it originally prevented return with a vengeance.

☐ interchange heavy-duty,rolls with lighter duty rolls. While small diameters may serve well in some applications, a change of roll from a light-duty responsibility to a heavy-duty machine can damage the roll, the machine and the material processed. If in doubt, contact your Mount Hope sales engineer.

☐ try to use a standard-speed roll for applications over 1600 fpm. Use a high-speed roll.

☐ switch a roll from "normal" temperature duty to high-heat areas since high heat is deleterious to the standard sleeve. Special sleeves are necessary for high-temperature use. In all cases, be sure the roll covering is correct for the application, to prevent excessive wear or damage.

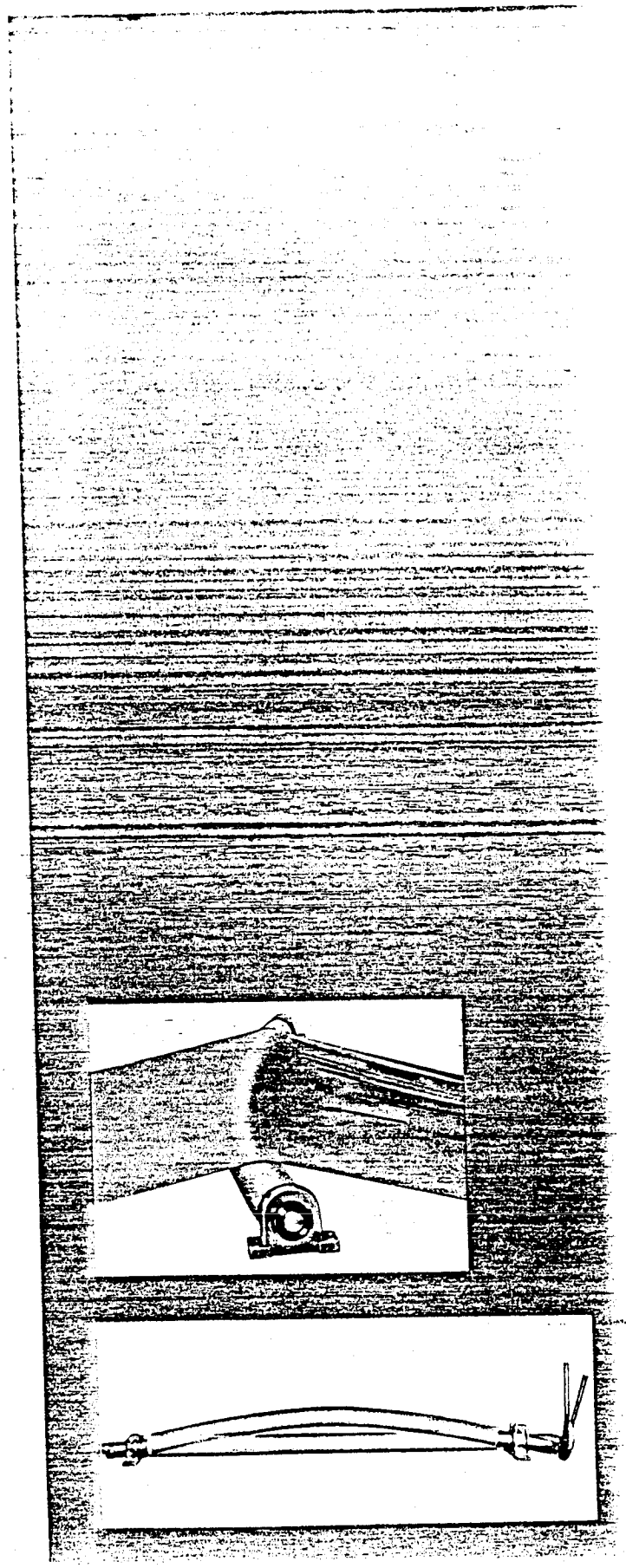
☐ use a knife on the surface of the sleeve at any time. If a wrap-up occurs, be sure the final layers of paper are unrolled by hand.

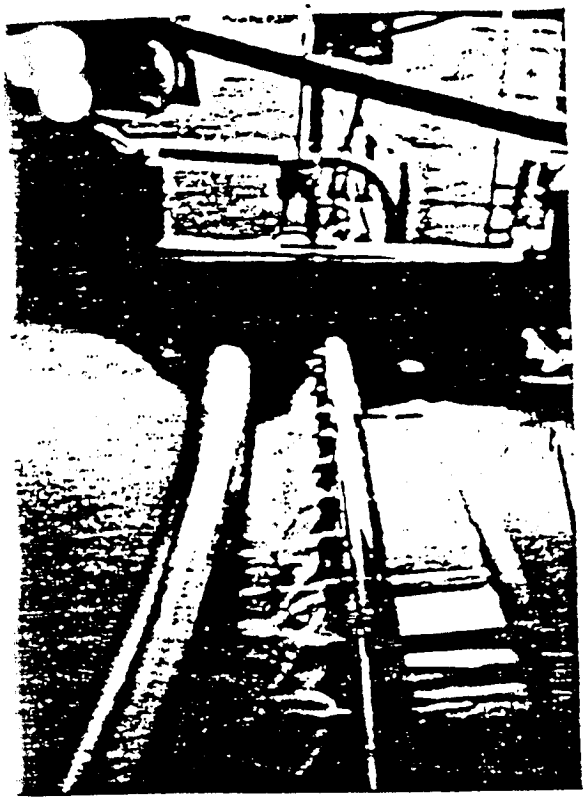
☐ worry about the hydraulic equipment itself on hydraulically-operated Vari-Bow and bow rotating devices on 10½" O.D. rolls. This gets very little actual use and very seldom needs any attention other than an occasional replenishing of the hydraulic fluid. (See Technical Data Sheet #6A). When a roll is returned to the shop for repairs, we will, of course, check the hydraulic equipment both for the bowing and for the bow rotating device.

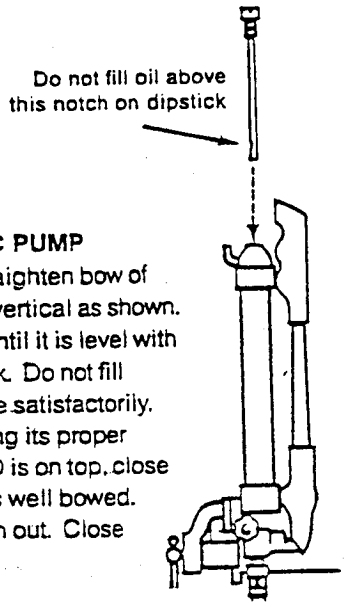
☐ drive nails carefully through the shipping case when crating a roll for shipment. Nails projecting inside the case can puncture or otherwise damage the soft rubber sleeve, necessitating costly and unnecessary repair or replacement. A stout case properly nailed and with the roll inside suitably immobilized will insure safe transit and delivery. The roll should be supported by mounting brackets secured to the bottom of the box with the roll locked in position so that it does not touch the top, bottom or sides of the box.

☐ use the roll when there are signs of overheating, seal failure or excessive wear of the sleeve. Normal repairs can be made quickly and at minimal cost. Lack of care may cause damage to bearings and this involves long and expensive repairs.

☐ rotate adjusting nut N on 4¼" and 5⅛" Vari-Bows (see our specification sheet) counter clockwise to bow the Vari-Bow. Nut N may be rotated counter clockwise beyond the neutral point to bring the bow to zero when bow is vertical down.







INSTRUCTIONS FOR ADDING OIL TO HYDRAULIC PUMP

(See Sec. Sheet for Vari-Bow roll.) Connect pump, straighten bow of roll, permitting oil to flow back into pump. Hold pump vertical as shown. Remove filler plug at end of pump. Add hydraulic oil until it is level with notch on stem of filler plug, using the stem as a dipstick. Do not fill oil above the notch because then pump will not operate satisfactorily. It is possible that air might get into the system, hindering its proper operation. To remove air, rotate the roll so connection D is on top, close release valve E, loosen nut M, and pump until the roll is well bowed. Now, open release valve and allow the roll to straighten out. Close release valve. Then pump rapidly 8 to 12 strokes.

Repeat procedure if necessary.

Use Sun #916 Hydraulic Oil, Texaco Regal Oil A (R&O) or equivalent.

Capacity of Pump and Cylinder: approximately one pint each.

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A division of SW Industries

MOUNT HOPE MACHINERY COMPANY,
15 Fifth Street, Taunton, Massachusetts 02780, U.S.A. (617) 824-6994 • Charlotte, North Carolina, U.S.A. (704) 392-5057 • Kelso, Washington, U.S.A. (206) 636-0330 • Kimberly, Wisconsin, U.S.A. (414) 739-2357
MOUNT HOPE, Green Street-Green Road, Dartford, Kent, England
MOUNT HOPE MACHINERY COMPANY, LTD., 45 Mount Hope Street, Lindsay, Ontario, Canada (705) 324-6186
MOUNT HOPE, Parc Industriel des Hauts-Sarts, Herstal-Liege, Belgium
S. A. WOODWARD ELASTOMEROS LTDA., Rua Ulisses Cruz 1205, CEP 03077, Sao Paulo, Brazil

MHCAM Ingalls 12/79 3M

IMPORTANT INSTRUCTIONS
FOR MOUNT HOPE ROLLS

HANDLING:

Lift or support only on axle ends or mounting brackets.
Do not lift or support on roll cover.

STORAGE:

Support on axle ends or mounting brackets — not on roll cover.
Leave roll in box if possible.
Store in dry area protected from weather and sunlight.
Recommended storage temperature, 35° F to 100° F (1° C to 38° C). (Roll can be subjected to lower temperatures during short term storage while shipping.)

STARTUP:

If roll has been in an area at a temperature less than 60° F (15° C) allow 24 hours over 60° F before rotating sleeve. Rotate sleeve ½ turn and allow roll to rest in this orientation for 1 hour prior to startup. (This action, which relieves the sleeve "set" caused by storage, will reduce high torque and roll quiver at startup.)

MAINTENANCE:

No additional grease lubrication of the roll itself is required with Mount Hope's advanced seal design.
For rolls furnished with Model RE worm and gear rotatable type brackets the grease fittings on the brackets should be greased at 3 month intervals.

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GENERAL INSTRUCTIONS

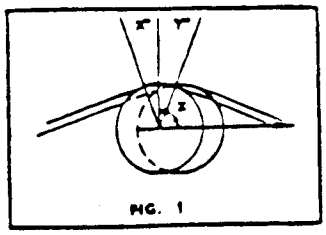


FIG. 1

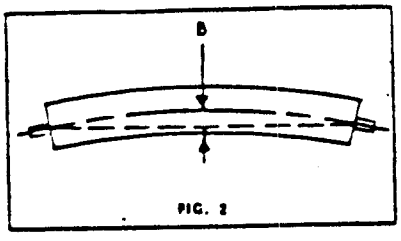


FIG. 2

the BOW

No. 2 OF A SERIES

LATERAL EXPANSION or CONTRACTION of paper or other processed web by a MOUNT HOPE ROLL depends upon 3 conditions:

1. Wrap of web on MOUNT HOPE ROLL (X° + Y° in Fig. 1).
2. Amount of "bow" in MOUNT HOPE ROLL ("B" in Fig. 2).
3. Stretchability of the web.

NOTE: Large arrow in diagrams indicates direction of apex of bow of the MOUNT HOPE ROLL. All directions apply to installations on webs running in horizontal, vertical or angular planes.

BASIC PROCEDURE

a. Install roll so that it makes an arc of contact with the web with the apex of the bow as shown in Fig. 1:

b. Assure maximum area of contact between the roll and the web by making "meeting" and "leaving" angles equal (Angles X° and Y°, Fig. 1). To do this, bisect the total arc of contact and draw a line at 90° to the bisecting line. Axle of roll should lie in this plane with apex of bow (indicated by large arrow) pointing in direction of travel.

TO LATERALLY EXPAND WEB

a. Set roll with apex of bow in same direction as that in which paper or other sheet is traveling. Web will meet roll on concave side and leave from convex side (Fig. 4).

b. Make draw between MOUNT HOPE ROLL and preceding roll twice as great as the draw between MOUNT HOPE ROLL and the roll following it (Fig. 3). (Smaller ratios may be used on special applications).

c. Keep draw from MOUNT HOPE ROLL to the roll FOLLOWING it as short as possible in order to hold expanded width (Fig. 3).

TO LATERALLY CONTRACT WEB

Set MOUNT HOPE ROLL with apex of bow in direction opposite to that in which paper or other sheet is traveling. Web will meet roll on convex side and leave from concave side.

TO CORRECT FOR SLACK EDGES OR BAGGY CENTERS

(Refer to Figs. 5 and 6)

To tighten slack edges, rotate apex of bow AWAY from web.
To tighten baggy centers, rotate apex of bow INTO the web.
Shaded area indicates how plane of the bow (large arrow) is shifted.

FIG. 3

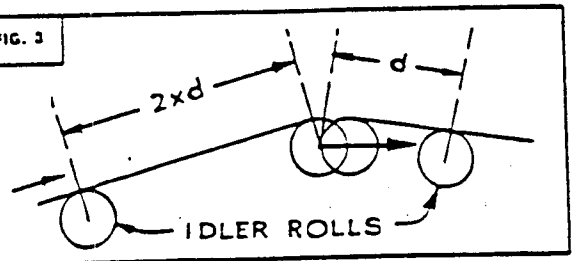


FIG. 4

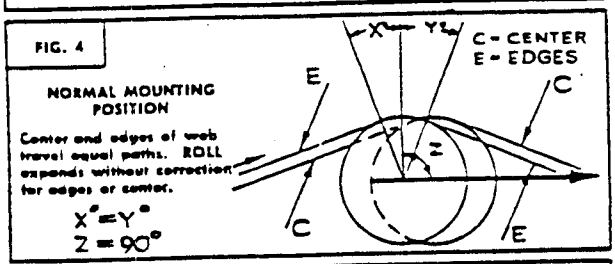


FIG. 5

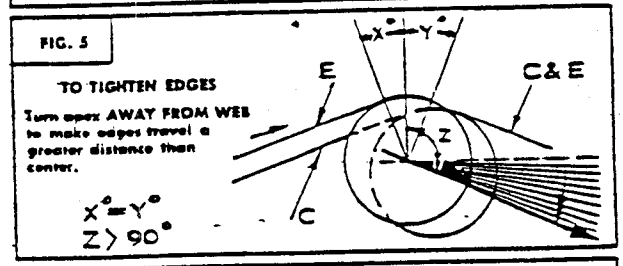
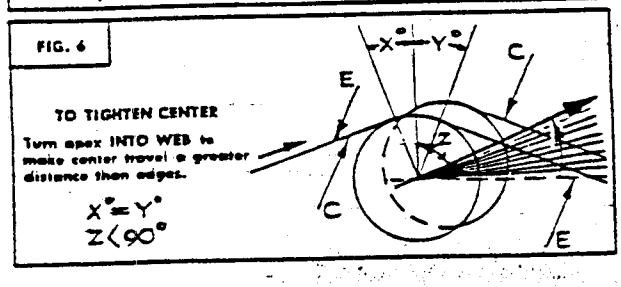


FIG. 6



YOUR MOUNT HOPE SALES ENGINEER is ready to help you with your web handling problems.

Contact us and we will have him get in touch with you immediately. Write or phone:

mount hope

MOUNT HOPE MACHINERY COMPANY,
Fifth Street, Taunton, Massachusetts 02780, U.S.A. (617) 824-6994 • Charlotte, North Carolina, U.S.A. (704) 392-5057 • Iso, Washington, U.S.A. (206) 636-0330 • Kimberly, Wisconsin, U.S.A. (414) 739-2357
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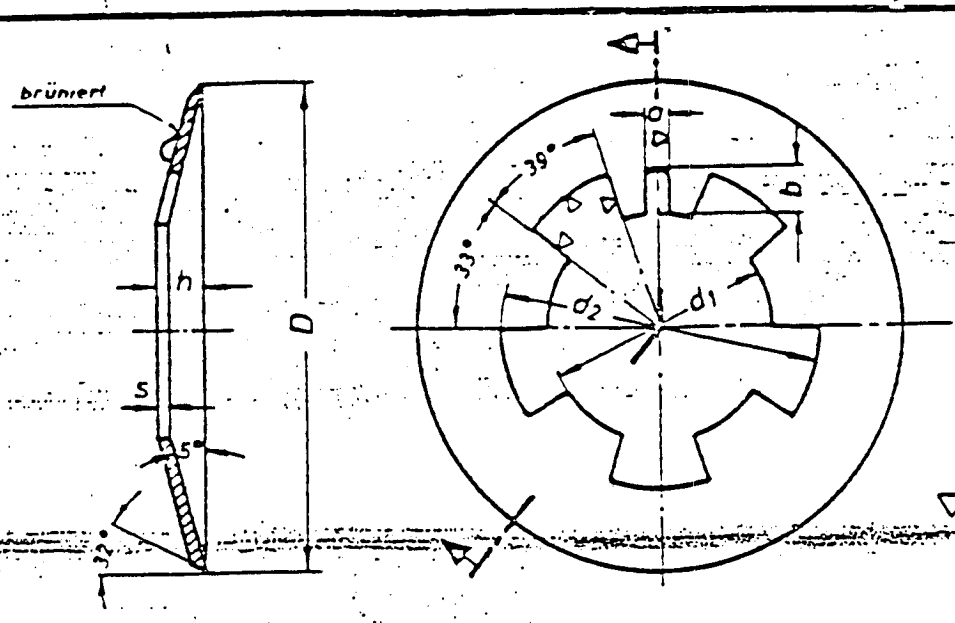

Bezeichnung eines Ringfeder-Messers, mit D = 77 mm und d_1 = 55 mm:

Ringfeder-Messer 77x55 JW 701-13

(Waren-Nr. 701.410)

D ±0,1	d_1 F7	d_2	h	s	a	b	Holzbrug Nr.	Waren-Nummer
77	55	62	1,70	0,75	3	4,5	156.816	701.410
105	65	72,5	2,75	1,00	5	5	156.816	701.411
	65,1 1)	72,5	3,25	1,50	5	5	156.820	701.406
130	80	88	3,19	1,00	5	6	156.816	701.412
	80,1 1)	88	3,69	1,50	5	6	156.820	701.416
	90	99	3,25	1,50	5	6		701.413
150	90	99	4,12	1,50	5	6	156.820	701.414
	90,0 1)	99	4,38	1,75	5	6	156.822	701.407
	90,1 1)	99	4,12	1,50	5	6	156.820	701.408
175							156.825	
	90	99	5,62	2,20	5	6		701.415
200	90 2)	–	6,70	2,20	5	6	156.825	701.418

1) die angehängte 0 bzw. 1 dient nur zur Unterscheidung in der Bezeichnung

2) Aussparung entfällt

Werkstoff: ~~80 Cr V 2~~ 100 Cr 6, durchgehärtet HRC 59 ± 1

▽ = lagerhaltig

▽ = lagerhaltig, nicht für Neukonstruktionen

Jagenberg-Werke AG, Düsseldorf

Nur für den Dienstgebrauch

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Dat.

Abt.: TB Norm | Ausgegeben: | -701-13N

ORDER TABLE

Standard models normally available from distributor stock.

PIPE SIZE	1/2-PINT TRANSPARENT RESERVOIR WITHOUT DRAIN STRANDARD	
	w/Guard	w/o Guard
1/4"	L12-200-OPPA	L12-200-OPEA
3/8"	L12-300-OPPA	L12-300-OPEA
1/2"	L12-400-OPPA	L12-400-OPEA
3/4"	L12-600-OPPA	L12-600-OPEA

Use metal reservoir in applications in which the lubricator might be exposed to substances which are incompatible with polycarbonate. See CAUTION note.

OPTIONS:

When ordering lubricators with optional features, substitute the designated letter or number in the 9th position (L12-X00-OP__A) of the standard model number

1/2-Pt. Polycarbonate Rsvr w/Drain – Substitute 'L'.
1/2-Pt. Polycarbonate Rsvr w/Drain & Bowl Guard – Substitute 'N'.
1/2-Pt. Aluminum Rsvr w/Drain & Oil Level Sight Gauge – Substitute 'D'.
1/2-Pt. Aluminum Rsvr w/Drain – Substitute 'M'.
Steel Rsvr w/Drain & Oil Level Sight Gauge:
- 1-Qt. – Substitute 'G'.
- 2-Qt. – Substitute 'H'.
- 2-Gal. – Substitute 'J'.
- 5-Gal. – Substitute 'K'.

1/2-Pt. Polycarbonate Rsvr w/Remote Fill Device:
- w/o Guard – Substitute '1'.
- w/Guard – Substitute '2'.

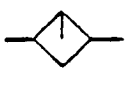
1/2-Pt. Metal Rsvr w/Remote Fill Device:
- w/o Sight Gauge – Substitute '3'.
- w/Sight Gauge – Substitute '4'.

ACCESSORIES

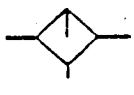
Specify in addition to lubricator model number.

	ORDERED WITH LUBRICATOR	ORDERED SEPARATELY
Mounting Bracket (1/2-Pt., 1 & 2-Qt.)	5532-04	5532-04
Quick-Fill Cap	18-011-020	18-011-021
Tamperproof Seal Wire	2117-01	2117-01
Guard (Includes retaining spring)	See Options	5270-50
Low Oil Level Switch —		
1-Qt. Rsvr	18-023-601	18-023-602
2-Qt. Rsvr	18-023-603	18-023-604
2-Gal. Rsvr	18-023-605	18-023-606
5-Gal. Rsvr	18-023-607	18-023-608
High/Low Oil Level Switch —		
2-Gal. Rsvr	18-023-651	18-023-652
5-Gal Rsvr	18-023-653	18-023-654
Mounting Strap —		
2-Gal. Rsvr	18-001-056	18-001-056
5-Gal. Rsvr	18-001-039	18-001-039
1/2-Pt. Polycarbonate Rsvr w/Remote Fill Device	See Options	18-027-013
1/2-Pt. Metal Rsvr. w/Remote Fill Device & Sight Gauge	See Options	18-027-014
Pyrex Sight-Feed Dome	5605-54	5605-50

GRAPHIC SYMBOLS

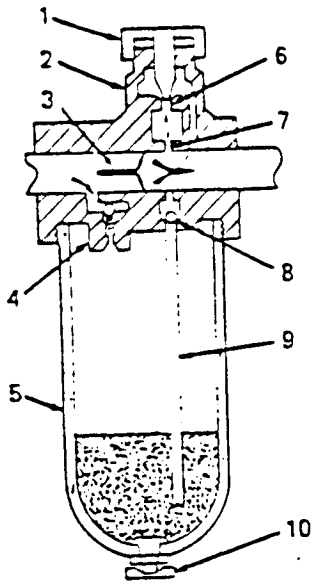


Closed Bottom



With Drain

OPERATION



The lubricator meters oil into the air line only when the is a flow of air through the lubricator. Air flowing through t lubricator passes around flow sensor (3) to the downstrea system. Inlet pressure is admitted to the reservoir through check (charge) valve (4). When air is flowing, a small pressu drop occurs across the flow sensor. The outlet (lower) pressu is sensed in the sight feed dome (2) through a nozzle passa (7). This establishes a pressure drop across oil metering orifi (6) and, as a result, oil at inlet pressure flows upward throu the siphon tube (9) into the sight feed dome where it dri into the nozzle passage and thence into the lubricator throa Adjusting knob (1) controls the oil drip rate. The oil drops a atomized by the high velocity air flowing past the flow sens and are carried downstream as oil fog. Check ball (8) preven back flow of oil into the reservoir during periods of no flo and eliminates the need for repriming each time air flow star

Flow sensor (3) functions as a variable restrictor in t throat of the lubricator to produce a pressure drop (up approximately 5 psi) between inlet and outlet that is propo tional to the air flow through the lubricator. These variatio in outlet pressure, sensed in the sight feed dome, cause a li variation in the pressure drop across the oil metering orifi as a function of air flow. Thus, for any given drip rate settir at an average air flow, a lower air flow will cause a lower dr rate, a higher air flow a higher drip rate. This results in a near constant oil density ratio over a wide range of air flows.

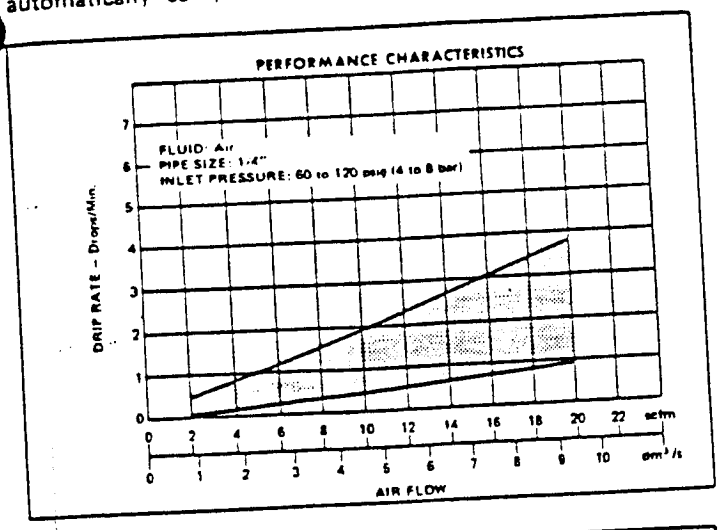
Charge valve (4) controls the rate of reservoir pressurizatio and allows rapid de-pressurization for refilling without shuttir off the air pressure. When the oil fill plug (not shown) loosened, a bleed orifice is exposed which immediately reduc the reservoir pressure. The drop in reservoir pressure caus the charge valve to close and restrict air flow into the reservo to eliminate blow-back when adding fresh oil. When the oil f plug is replaced, the reservoir re-pressurizes through the charg valve at a reduced rate. The charge valve opens when inl pressure is reached. The charge valve is used with 1/2-pin 1 and 2-quart reservoirs only.

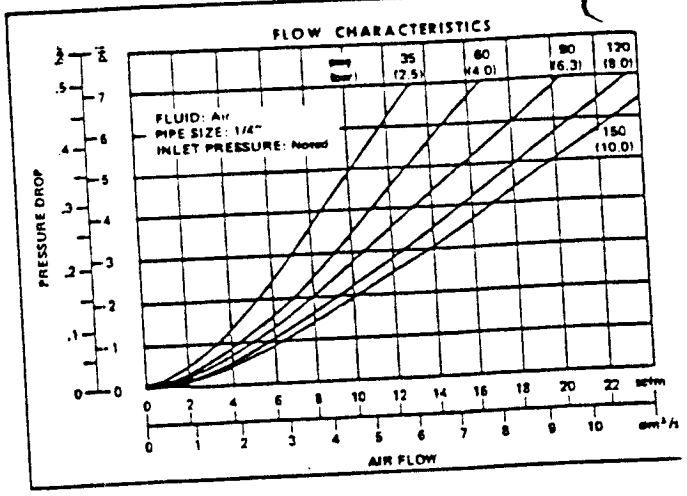
Turn adjusting knob (1) counterclockwise to increase t drip rate, clockwise to decrease the drip rate. Drip ra adjustments should only be made under steady flow co ditions. Once established, the lubricator will automatical adjust the drip rate proportionally to variations in air flo Push the green lockring downward to lock the setting aft final adjustment. To release lock, pull lockring upward.

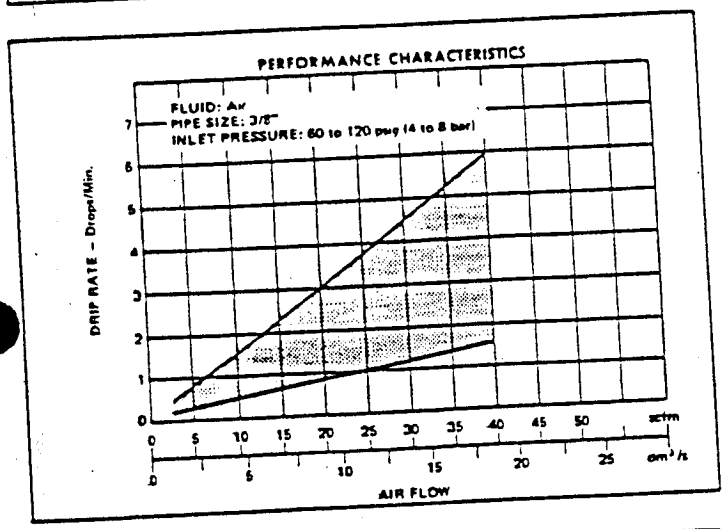
Manual drain petcock (10) is optional.

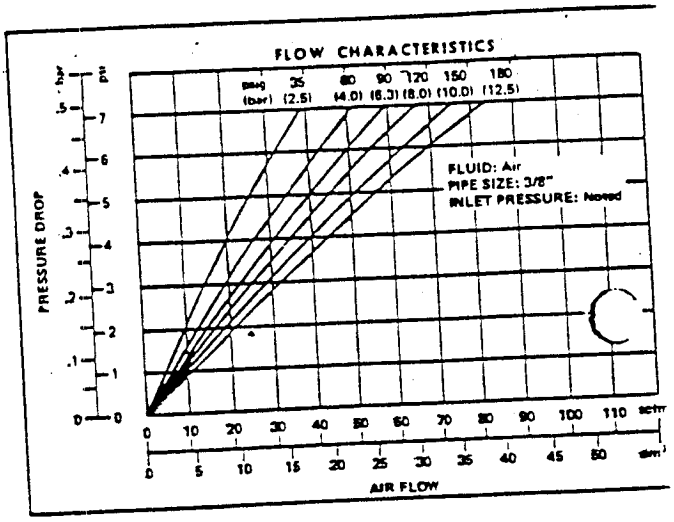
PERFORMANCE CHARACTERISTICS

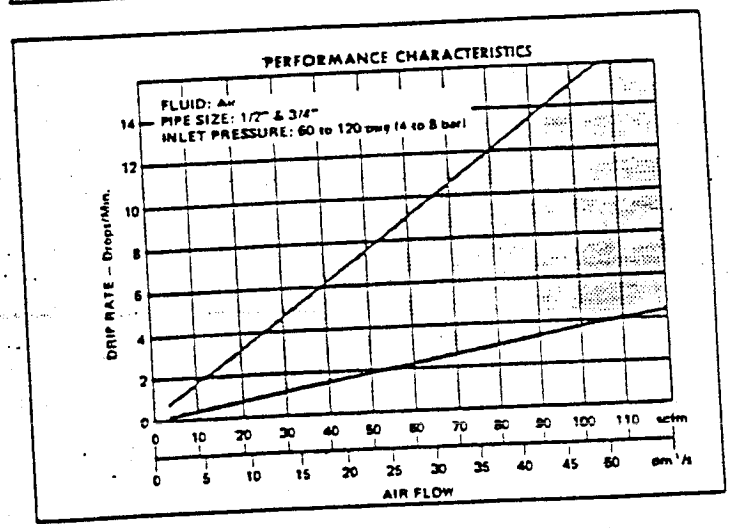
For initial startup, lubricator drip rate should be set within the shaded area at some average flow rate. The lubricator will automatically compensate for flow rate changes after initial setting. Lubricator should be monitored for first few day after installation and the drip rate readjusted if tool lubricatio appears either excessive or low.

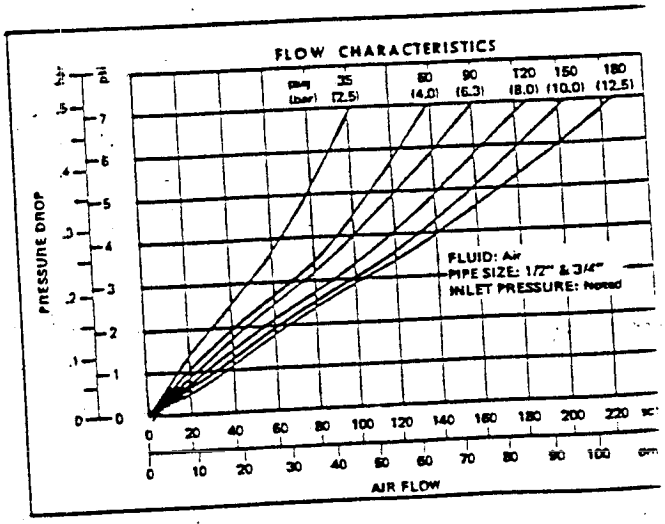




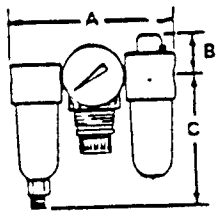




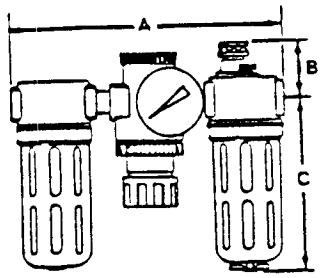




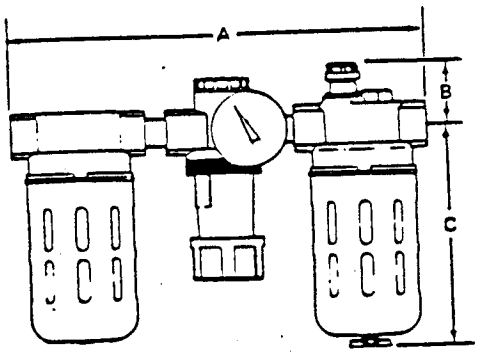
MENSIONS



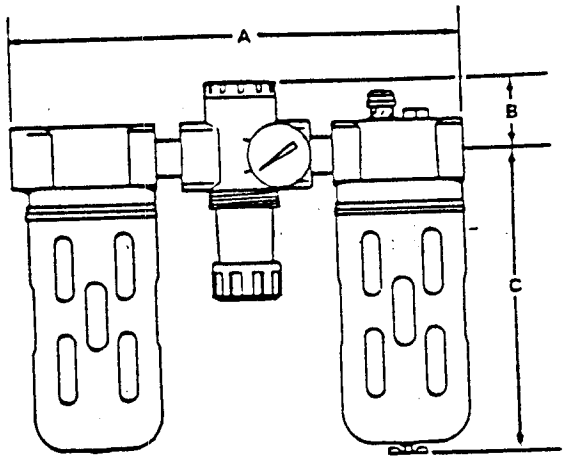
1/2-OUNCE



1/3-PINT



1/2-PINT

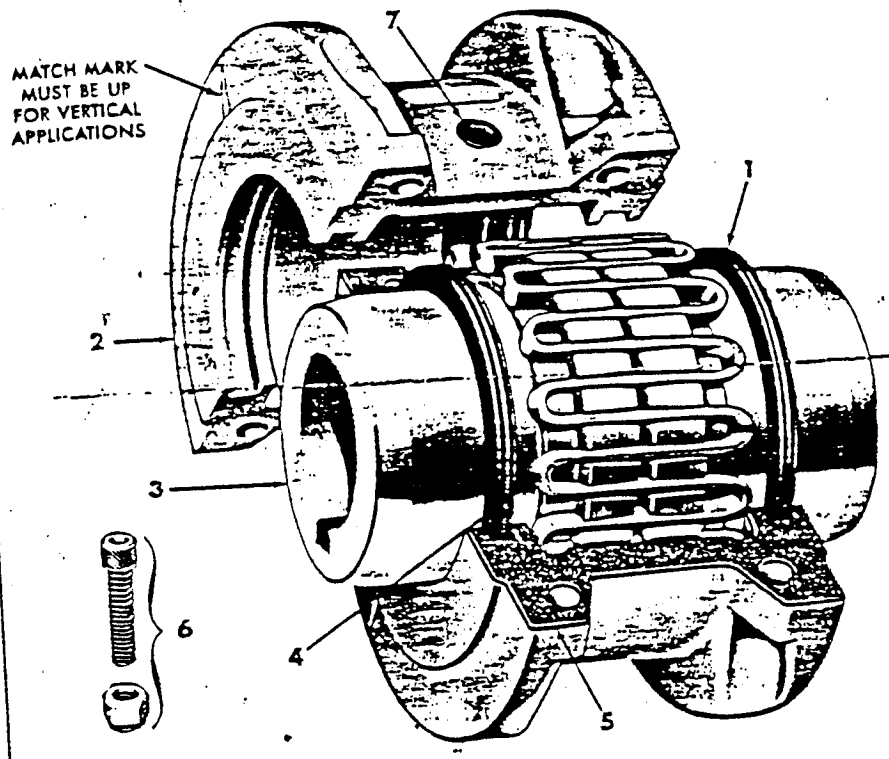


1-QUART

OIL RSVR CAP.	PIPE SIZE (Inches)	FILTER DRAIN	INCHES(MILLIMETERS)					
			MICRO-FOG			OIL-FOG		
			A (Approx.)	B	C	A (Approx.)	B	C
1/2-Oz	1/8, 1/4	Auto. Man.	4.94(125)	1.32(34)	3.84(98) 3.25(83)	—	—	—
1/3-Pt	1/4, 3/8	Auto. Man.	9.44(240)	1.85(47)	5.75(146)	9.44(240)	1.85(47)	5.75(146)
1/2-Pt	1/4, 3/8	Auto. Man.	10.63(270)	1.88(48)	6.38(162) 6.69(170)	10.63(270)	1.88(48)	6.31(160) 6.69(170)
	1/2, 3/4	Auto. Man.	12.31(313)	1.88(48)	6.38(162) 6.69(170)	12.31(313)	1.88(48)	6.31(160) 6.69(170
1-Qt	3/4, 1, 1-1/4	Auto. Man.	14.75(375)	2.38(60)	10.44(265)	14.75(375)	2.38(60)	10.06(256) 10.44(265)

C. A. NORGREN CO.
LITTLETON, COLORADO 80120 / 303-794-2611
Printed in U.S.A.

TYPE T10 STEELFLEX COUPLING PARTS



PART NUMBERS

1. Seal (T10)
2. Cover (T10)
3. Hub (Specify bore and keyway)
4. Grid
5. Gasket (T10)
6. Fasteners (T10)
7. Lube Plug

WHEN ORDERING SPARE PARTS, SPECIFY COUPLING SIZE AND TYPE AS SHOWN ON COUPLING COVER

INTRODUCTION — This manual applies to Sizes 20 thru 140 T10 Falk Steelflex Tapered Grid Couplings. They are designed to operate in either the horizontal or vertical position without modification. However, for vertical applications, the match mark shown above, must be up. The performance and life of the couplings depend largely upon how you install and service them. Carefully follow the instructions in this manual for optimum performance and trouble free service.

PARTS IDENTIFICATION — All coupling parts have identifying part numbers as shown above. Parts 3 and 4 (Hubs and Grids), are the same for both T10 and T20 couplings; all other coupling parts are NOT INTERCHANGEABLE. Therefore, when ordering parts, always SPECIFY SIZE and TYPE shown on the COVER. Sizes 80 thru 140T10 covers have been manufactured with two and three ribs; DO NOT mix these cover halves.

LUBE FITTINGS — Cover halves have ⅛ NPT lube holes. Use a standard grease gun and lube fitting as instructed in Step 6 on Page 2.

LIMITED END FLOAT — When electric motors, generators, engines, compressors and other machines are fitted with sleeve or straight roller bearings, limited axial end float kits are recommended for protecting the bearings. Falk Steelflex couplings are easily modified to limit end float; refer to Manual 428-820 for instructions.

LUBRICATION — Adequate lubrication is essential for proper operation of the coupling. Refer to Table 1 on Page 2 for the amount of lubricant required. It is recommended that the coupling be checked once a year and lubricant added if required. For extreme or unusual operating conditions, check more frequently.

CAUTION: Consult applicable local and national safety codes for proper guarding of rotating members.

LUBRICANT SPECIFICATIONS — Refer to Manual 428-010 for recommended lubricants. The following specifications apply to lubricants for Falk couplings which are lubricated annually and operate within ambient temperatures of 0° to 150°F (−18° to +66°C). For temperatures beyond this range, consult the Factory.

Dropping Point — 300°F (149°C) or higher.

Consistency — NLGI No. 2 with worked penetration value in the range of 250 to 300.

Separation and Resistance — Low oil separation rate and high resistance to separation from centrifuging.

Liquid Constituent — To possess good lubrication properties . . . equivalent to a high quality, well refined petroleum oil.

Inactive — Must not corrode steel or cause swelling or deterioration of synthetic seals.

Clean — Free from foreign inclusions.

SEMI-PERMANENT LUBRICATION — Refer to Service Manual 428-012 for details.

INSTALLATION — Only standard mechanics tools, wrenches, straight edge and feeler gauges are required to install Falk Steelflex couplings. Coupling Sizes 20 thru 90 are generally furnished for CLEARANCE FIT with set screws. Sizes 100 and larger are furnished for an INTERFERENCE FIT without set screws. Heat hubs with interference fit in an oil bath to a maximum of 275°F (135°C) to mount. The oil flashpoint must be 350°F (177°C) or higher. Refer to Page for detailed mounting instructions.

ORDER TABLE

Order by Lubro-Control Unit model number. For further detailed information such as description of operation, performance data, repair kits and other parts, refer to the Norgren Catalog (NC) sheets listed below:

FILTERS		REGULATORS		LUBRICATORS			
F04	NC-110	R06	NC-206	L04	NC-351	L12 M/F	NC-358
F11	NC-115	R11	NC-223	L01	NC-353	L12 O/F	NC-359
F12	NC-122	R12	NC-227	L11	NC-352	L17 M/F	NC-357
F17	NC-120	R17	NC-226			L17 O/F	NC-355

LUBRO-CONTROL UNIT				The Lubro-Control Unit Consists of These Components		
OIL RSVR CAPACITY	PIPE SIZE (PTF)	FILTER DRAIN	MODEL NUMBER	FILTER MODEL NO.	REGULATOR MODEL NO.	LUBRICATOR MODEL NO.
1/2-Ounce (Micro-Fog only)	1/8	Automatic Manual	21-314-151 21-314-152	F04-100-A1TA F04-100-M1TA	R06-100-RGKA	L04-100-MPAA
	1/4	Automatic Manual	21-314-176 21-314-177	F04-200-A1TA F04-200-M1TA	R06-200-RGKA	L04-200-MPAA
		LUBRICATOR TYPE				
1/3-Pint*	1/4	Micro-Fog Oil-Fog	P2A-220-A3NA P2B-220-A3NA	F11-200-A3PA	R11-200-RGLA	L11-200-MPNA L01-200-OPNA
	3/8	Micro-Fog Oil-Fog	P2A-320-A3NA P2B-320-A3NA	F11-300-A3PA	R11-300-RGLA	L11-300-MPNA L01-300-OPNA
1/2-Pint*	1/4	Micro-Fog Oil-Fog	P4A-220-A3NA P4B-220-A3PA	F12-200-A3PA	R11-200-RGLA	L12-200-MPNA L12-200-OPPA
	3/8	Micro-Fog Oil-Fog	P4A-320-A3NA P4B-320-A3PA	F12-300-A3PA	R11-300-RGLA	L12-300-MPNA L12-300-OPPA
	1/2	Micro-Fog Oil-Fog	P4A-420-A3NA P4B-420-A3PA	F12-400-A3PA	R12-400-RGLA	L12-400-MPNA L12-400-OPPA
	3/4	Micro-Fog Oil-Fog	P4A-620-A3NA P4B-620-A3PA	F12-600-A3PA	R12-600-RGLA	L12-600-MPNA L12-600-OPPA
1-Quart*	3/4	Micro-Fog Oil-Fog	P8A-620-A3NA P8B-620-A3PA	F17-600-A3PA	R17-600-RGLA	L17-600-MPNA L17-600-OPPA
	1	Micro-Fog Oil-Fog	P8A-820-A3NA P8B-820-A3PA	F17-800-A3PA	R17-800-RGLA	L17-800-MPNA L17-800-OPPA
	1-1/4	Micro-Fog Oil-Fog	P8A-A20-A3NA P8B-A20-A3PA	F17-A00-A3PA	R17-A00-RGLA	L17-A00-MPNA L17-A00-OPPA

*Use metal bowls for applications in which the Lubro-Control Unit might be exposed to substances that are incompatible with polycarbonate. See CAUTION note.

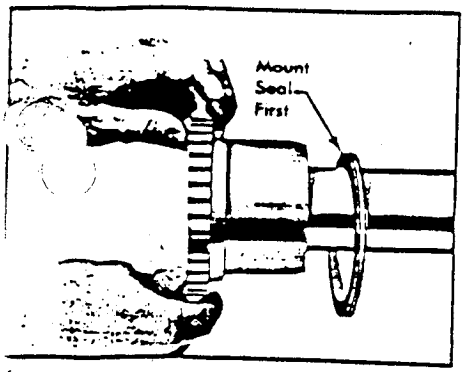
OPTIONS

Units Without Bowl/Reservoir Guards (1/3 & 1/2-Pt Only)
Substitute '00' for '20' in the 5th and 6th positions and 'L' for 'N' or 'E' for 'P' in the 9th position of model number (XXX-X__-X3_A). Guards not available for 1/2-ounce units. Guards mandatory for 1-quart units.

Units With Metal Bowl/Reservoir (1/3 & 1/2-Pt, 1-Qt)
Substitute '40' for '20' in the 5th and 6th positions and 'D' for 'N' or 'P' in the 9th position of the model number (XXX-X__-X3_A). Metal lubricator reservoir has oil level sight gauge. Metal bowl/reservoir not available for 1/2-ounce units.

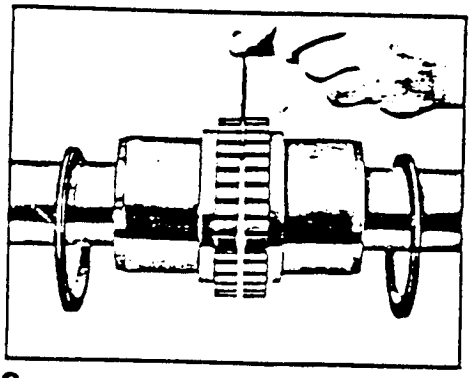
Units With T-Handle Regulator (1/3 & 1/2-Pt, 1-Qt)
Substitute 'H' for 'P' in 1st position of model number (_XX-XXX-X3XA). T-Handle regulator not available for 1/2-ounce units.

Units With Manual Drain Filter (1/3 & 1/2-Pt, 1-Qt)
Substitute 'M' for 'A' in the 7th position of model number (XXX-XXX-_3XA).



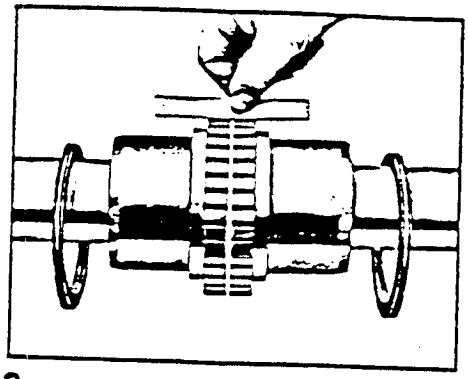
MOUNT SEALS AND HUBS

ock out starting switch of prime mover. Clean ll metal parts using a non-flammable solvent. ghtly coat seals with grease and place on afts BEFORE mounting hubs. Mount hubs on eir respective shafts so the hub face is flush ith the end of its shaft. Tighten set screws nen furnished. Heat interference fit hubs as structed on Page 1.



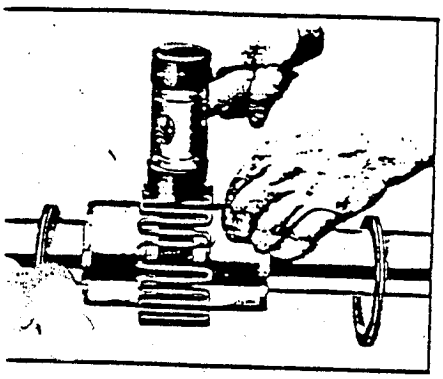
2 GAP & ANGULAR ALIGNMENT

Use a spacer bar equal in thickness to the gap specified in Table 1. Insert bar, as shown above, to same depth at 90° intervals and measure clearance between bar and hub face with feelers. The difference in minimum and maximum measurements must not exceed the ANGULAR limit specified in Table 1.



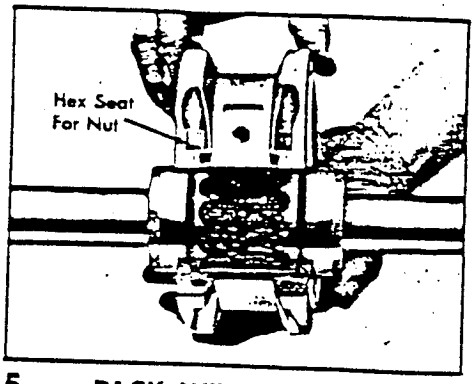
3 OFFSET ALIGNMENT

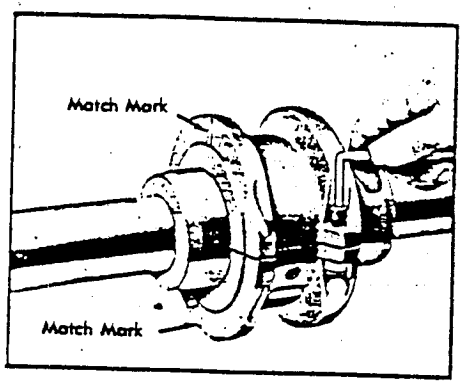
Align so that a straight edge rests squarely (or within the limits specified in Table 1) on both hubs as shown above and also at 90° intervals. Check with feelers. The clearance must not exceed the OFFSET limit specified in Table 1. Tighten all foundation bolts and repeat Steps 2 and 3. Realign coupling if necessary. NOTE: Use a dial indicator for more accurate alignment.



INSERT GRID

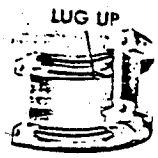
gap and grooves with specified lubricant re inserting grid. When grids are furnished vo or more segments, install them so that ut ends extend in the same direction; this permit cover installation. Spread the grid tly to pass it over the coupling teeth and with a soft mallet.





5 PACK WITH GREASE AND ASSEMBLE COVERS

Pack the spaces between and around the grid with as much lubricant as possible and wipe off excess flush with top of grid. Position seals on hubs to line up with grooves in cover. Position gaskets on flange of lower cover half and assemble covers so that the match marks are on the same side (see above). If shafts are not level (horizontal) or coupling is to be used vertically, assemble cover halves with the lug and match mark UP, or on the high side. Secure cover halves with fasteners and tighten to torque specified in Table 1. (Note that Sizes 20 thru 70 have a self-locking feature for the stop nuts.) CAUTION: Make certain lube plugs are installed before operating.



VERTICAL COUPLINGS

INSTALLATION DATA* (Dimensions-Inches)

ZE	Gap	Operating* Alignment Limits		Cover Bolt Torque (lb-in)	Max Speed (rpm)	Lube Wt (lb)
		Offset (Max)	Angular (Max)			
0T	.125	.005	.005	100	4500	.06
0T	.125	.005	.005	100	4500	.06
1T	.125	.005	.005	100	4500	.12
1T	.125	.005	.005	200	4500	.12
T	.125	.010	.010	200	4350	.19
T	.125	.010	.010	200	4125	.19
T	.125	.010	.010	200	3600	.38
T	.125	.012	.012	200	3600	.56
	.188	.012	.012	260	2440	.94
T	.188	.012	.012	260	2250	1.1
	50	.012	.012	650	3025	1.6
	60	.012	.012	650	1800	2
	70	.015	.015	650	1650	2.5

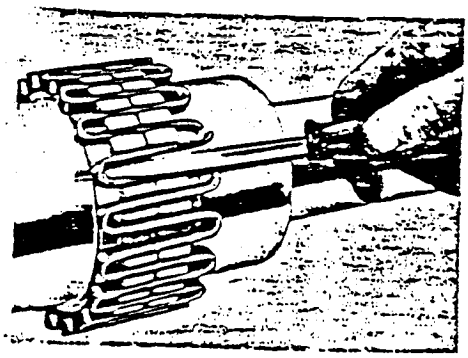
to L[illegible]in 421-110 for maximum b[illegible]res and Engineering 08 for reboring instructions.
couplings within "Operating Alignment Limits" specified . Exceeding these limits reduces coupling life.

6 PERIODIC LUBRICATION

— Remove both lube plugs and insert lube fitting. Fill with recommended lubricant until an excess appears at the opposite hole. CAUTION: Make certain all plugs have been inserted after lubricating.

COUPLING DISASSEMBLY AND GRID REMOVAL

Whenever it is necessary to disconnect the coupling, remove the cover halves and grid. A round rod or screw driver that will conveniently fit into the open loop ends of the grid is required. Begin at the open end of the grid section and insert the rod or screw driver into the loop ends. Use the teeth adjacent to each loop as a fulcrum and pry the grid out radially in even, gradual stages, proceeding alternately from side to side.



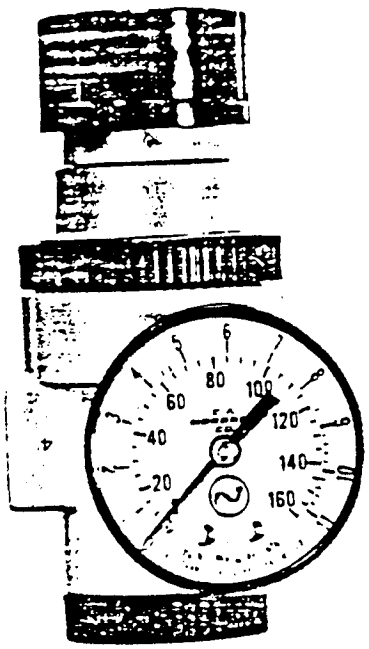
NC-223
October, 1976
Supersedes October, 1974
Replaces NC-222

TYPE R11 (KNOB ADJUSTMENT)
TYPE R01 (T-HANDLE ADJUSTMENT)

DESIGNER SERIES 1/4" BASIC PRESSURE REGULATOR

FOR COMPRESSED AIR SERVICE

1/4"& 3/8" PIPE SIZES • DIAPHRAGM TYPE • RELIEVING OR NON-RELIEVING



ORDER TABLE

Standard models normally available from Distributor stock.

ADJ. TYPE	GAUGE	PIPE SIZE	STANDARD RELIEVING — 2 to 125 PSIG
Knob	w/	1/4 3/8	R11-200-RGLA R11-300-RGLA
	w/o	1/4 3/8	R11-200-RNLA R11-300-RNLA
T-Handle	w/	1/4 3/8	R01-200-RGLA R01-300-RGLA
	w/o	1/4 3/8	R01-200-RNLA R01-300-RNLA

OPTIONS

For 1-50 psig adjustment range, substitute 'E' for 'L' in 9th position of order number (RXX-X00-XX_A).

For 5-250 psig adjustment range, substitute 'S' for 'L' in 9th position.

For non-relieving model, substitute 'N' for 'R' in 7th position (RXX-X00-_XXA).

ACCESSORIES

Order separately.

Wall mounting bracket	5203-01
Tamper resistant seal wire (Knob type adj.)	2117-01
Gauges — Black metal case, plastic crystal, 1/4" PTF center-back connection, dual psi and bar scales —	
0— 60 psi	18-013-208
0—160 psi	18-013-209
0—300 psi	18-013-210

CAUTION

THESE REGULATORS MUST NOT BE USED WHERE PRESSURE OR TEMPERATURE MAY EXCEED RATED OPERATING CONDITIONS.

FOR USE IN LIFE SUPPORT SYSTEMS, OR FOR USE WITH FLUIDS OTHER THAN AIR OR INERT GASES, CONSULT YOUR DISTRIBUTOR FOR FACTORY APPROVAL.

SPECIFICATIONS

MAIN PORTS: 1/4" OR 3/8" PTF (STANDARD)
GAUGE PORTS: TWO 1/4" PTF FULL FLOW (STANDARD)
PRIMARY PRESSURE: UP TO 300 psig (20.7 bar) MAXIMUM
SECONDARY PRESSURE ADJUSTMENT RANGES*:
5 to 125 psig (.3 to 8.6 bar) (STANDRAD)
5 to 50 psig (.3 to 3.5 bar) (OPTIONAL)
15 to 250 psig (1.0 to 17.2 bar) (OPTIONAL)
OPERATING TEMPERATURE RANGE: 0 to 175°F (−18 to 79°C) WITH DEWPOINT LESS THAN AIR TEMPERATURE BELOW 35°F (2°C)

*Secondary pressure adjustment ranges are not minimum or maximum secondary pressure limits. Regulators can be adjusted to zero psig secondary pressure and, generally, to pressures in excess of those specified. The use of these regulators to control pressures outside of the specified ranges is not recommended.

FEATURES

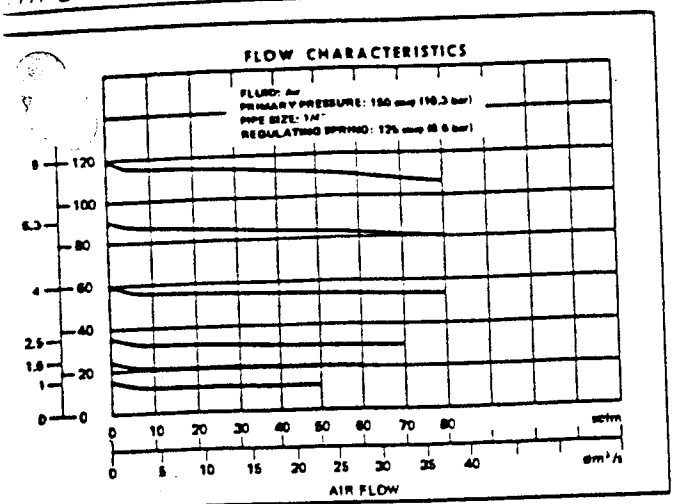
- Attractive, lightweight, modern styling.
- Balanced valve design minimizes effect of variations in primary pressure on secondary pressure.
- Excellent flow, regulation and response time.
- Non-rising adjusting knob (R11) has integral locking device which can be made tamper-resistant with addition of optional seal wire.
- Relieving model permits secondary pressure reductions under dead-end conditions and also reduces excessive secondary pressure buildup.
- Panel mounting nut standard. Wall mounting bracket available.
- Easily disassembled for servicing without removal from air line.

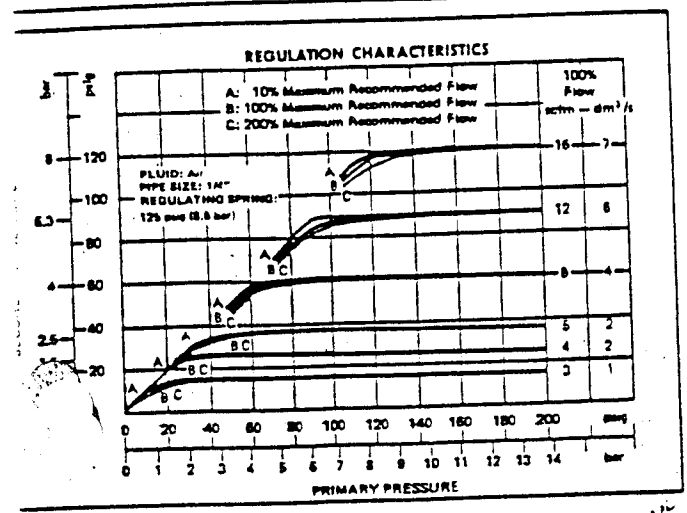
APPLICATION

The R01/R11 Pressure Regulator is designed for general application in compressed air systems where reliable, accurate pressure regulation and large flow capacity are required. Gauge ports are full-flow and can be used as auxiliary outlet ports.

NORGREN
LITTLETON, COLORADO

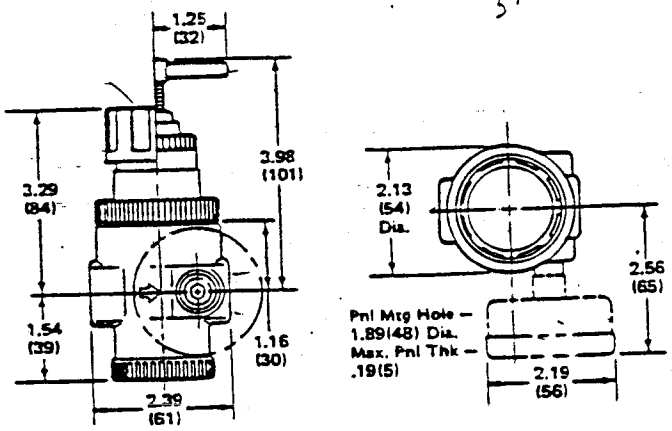
ERFORMANCE CHARACTERISTICS



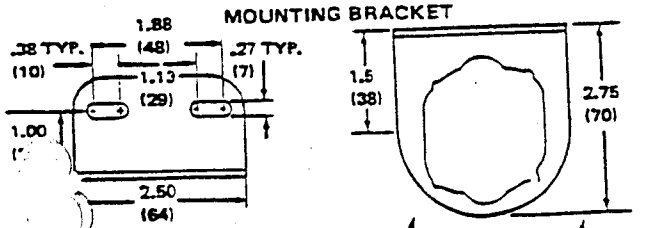


DIMENSIONS

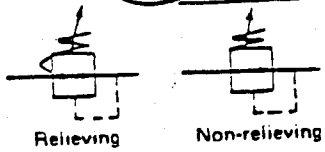
All dimensions in inches (mm).



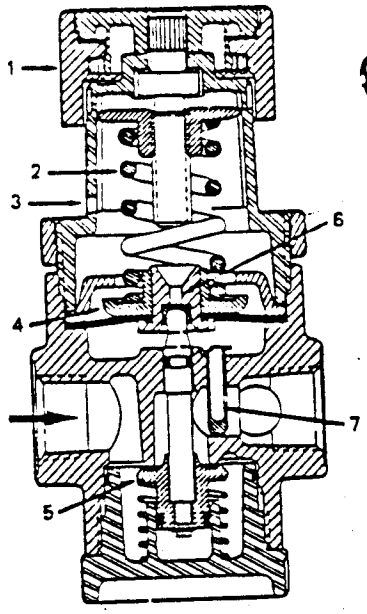
MOUNTING BRACKET



GRAPHIC SYMBOLS



OPERATION



The primary parts of the R01/R11 pressure regulator are the diaphragm (4), regulating spring (2), valve (5) and adjusting knob (1) or T-handle. The lower side of the diaphragm is connected to the outlet (secondary) side of the regulator through an aspirator tube (7).

With the adjustment turned counterclockwise until no load is applied to the regulating spring, the valve is closed. When the adjustment is turned clockwise, a force is applied to the regulating spring which causes the diaphragm to move downward and open the valve. The increase in secondary (regulated) pressure, acting against the lower (pressure) side of the diaphragm, creates a force tending to move the diaphragm upward, compressing the regulating spring. This upward movement will continue until the force exerted by the pressure on the lower side of the diaphragm balances the spring force exerted on the upper side. If there is no downstream flow demand, this balance of forces will occur with the valve closed. If there is a flow demand, the balance of forces will occur with the valve open just the amount necessary to compensate for the demand, thus maintaining the desired pressure.

The regulator shown is a relieving type and, should a secondary overpressure occur, the diaphragm will move further upward and open relief passage (6) in the diaphragm. This allows secondary air to escape into the regulator bonnet and thence to atmosphere through vent (3). Non-relieving models do not have a relief passage in the diaphragm but are otherwise identical to the relieving models. Since non-relieving models will trap any over-pressure on the downstream side, some other means of relieving the over-pressure must be provided.

After the desired secondary pressure setting is made on R11 regulators, push the outer ring on the adjusting knob downward to lock the setting. To release, pull the ring upward. The setting can be made tamper resistant by installing a seal wire (see Accessories) in groove immediately above the lock-ring.

With R01 regulators, tighten locknut on T-handle to secure setting.

REPAIR KITS

Non-relieving models.	5298-01
Relieving models	5298-02

Kits contain all O-rings, diaphragm assembly, valve assembly and valve spring.

REPAIR PARTS

Regulating springs —	
5– 50 psig	5302-02
5–125 psig	5354-02
15–250 psig	5195-01
Diaphragm assemblies —	
Non-relieving	5083-58
Relieving	5083-57
Valve assembly (Includes seals)	5180-50

MATERIALS OF CONSTRUCTION

Body & Bonnet	Diecast Aluminum
Elastomers	Buna-N
Valve assembly	Brass
Bottom plug	Nylon

C. A. NORGREN CO.
LITTLETON, COLORADO 80120 / 303-794-2611

Printed in U.S.A.
NC-223/10-76

SSORIES

ACCESSORY	USED ON	HOW ORDERED	
		WITH	SEPARATELY
/L/RESERVOIR GUARDS   erforated metal gives added protection, et allows visible oil level.	F11, L01, L11	Included with Lubro-Control Unit	5176-02
	F12		5270-50
	L12		5270-51
	F17		5393-51
	L17 (STD)		5393-50
MPER-RESISTANT SEAL WIRE  Fits knob adjustments only. Install in groove between lockring and top of knob.	R06, R11, R12, R17 L01, L11, L12, L17	2117-01	
UNTING BRACKETS  Made of heavy gauge steel for use on any vertical surface. Mounting nut included where shown. Mounting nut standard on R11.	R06	18-025-003	
The regulator bracket only is required for mounting 1/2-ounce Lubro-Control Units. Units in the 1/3 and 1/2-pint sizes may be mounted by the regulator bracket alone, however, for added support, it is recommended that the filter and lubricator brackets be used. 	F11, L01, L11	5203-02	
	R11	5203-01 (1/3-pt units) 5947-01 (1/2-pt units)	
	F12, L12	5532-04	
	R12	5514-04	
	R17	5570-02	
UICK-FILL CAP  Refill without shutting off air pressure. Replaces filler cap.	L01, L11	18-011-007	18-011-008
	L12, L17	18-011-020	18-011-021
GAUGES  Black metal case with plastic crystal, center-back connection, dual psi & bar scales, 0—160 psi.	R06	Included with Lubro-Control Unit	18-013-212
	R11, R12, R17		18-013-209

Consult your Distributor for additional accessories.

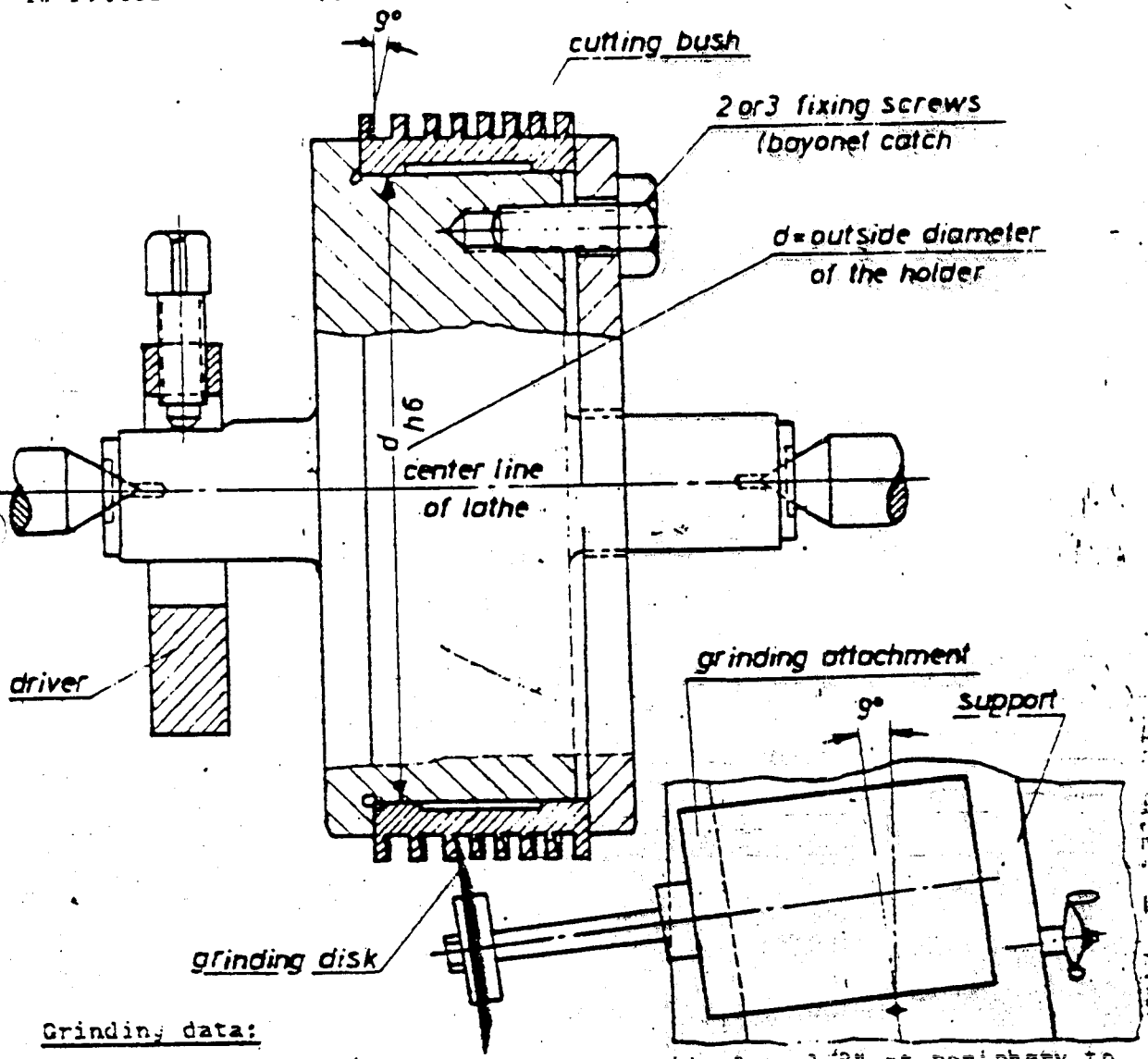
...ing of Cutting Bushes

(single-piece, HRC-60)

...CENGERG

S3e

For grinding, detach the cutting bushes from the slitter roll. The latter must therefore not be used as holder for the bushes during the grinding because otherwise the grinding dust can enter into the bearings. A holder should be made as shown in our illustration. For grinding the bushes, a lathe can be used on which a grinding device is fitted to the support.



Grinding data:

Grinder wheel 6 x 5/16 x 1 beveled one side from 1/8" at periphery to 3" flat spot. Norton 32A80 - J5VS or equal *

Per. speed of wheel approx. 76 ft/sec (3,000 rpm).

Peripheral speed of bushing: abt. 40 ft/min

equal to $\frac{480"}{D \times 3.14}$ rpm

where D = outer diameter of bushing in inches

Bushing and wheel should revolve in opposite directions.